University of Arkansas, Fayetteville

# Undergraduate Catalog of Studies, 2023-2024 

University of Arkansas, Fayetteville

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## For More Information

See the University of Arkansas Directory (http://directory.uark.edu/) for a more comprehensive directory of offices and personnel.

## Admissions

| Undergraduate Admissions | 232 Silas H. Hunt Hall 479-575-5346 |  |
| :--- | :--- | ---: |
| School of Law Admissions | 110 Waterman Hall | $479-575-3102$ |
| Graduate School Admissions | 213 Gearhart Hall | $479-575-6246$ |
| International Admissions | 213 Gearhart Hall | $479-575-6246$ |

## Campus Tours \& Visits

Office of Admissions
Graduate School Admissions

232 Silas H. Hunt Hall 479-575-5346
213 Gearhart Hall 479-575-6246

## Self-Paced Online Courses

 Correspondence CoursesGlobal Campus
Toll Free
Deans' Offices

| Honors College | 244 Gearhart Hall | $479-575-7678$ |
| :--- | :--- | :--- |
| Dale Bumpers College of Agricultural, Food and Life | E-202 Agricultural, | $479-575-2252$ |
| SciencesNew Row | Food and Life <br>  <br> Sciences Bldg |  |
| Fay Jones School of Architecture and Design | 120 Vol Walker Hall | $479-575-4945$ |
| Fulbright College of Arts \& Sciences | 525 Old Main | $479-575-4801$ |
| Sam M. Walton College of Business | 301 Business Building 479-575-5949 |  |
| College of Education and Health Professions | 324 Graduate | $479-575-3208$ |
|  | Education Bldg. |  |
| College of Engineering | 4183 Bell Engineering 479-575-6012 |  |
|  | Center |  |
| Graduate School and International Education | 213 Ozark Hall | $479-575-4401$ |
| School of Law | 110 Waterman Hall | $479-575-5601$ |

## Enrollment Services

Office of Financial Aid 114 Silas H. Hunt Hall 479-575-3806
Academic Scholarship Office 101 Old Main 479-575-4464

## Greek Life

Walton Hall
Charlie and Cappy 479-575-5001
Whiteside Greek Life
Center

## Honors Program

| Honors College | 244 Gearhart Hall | 479-575-7678 |
| :---: | :---: | :---: |
| Dale Bumpers College of Agricultural, Food and Life Sciences | Dean's Office AFLS E-202 | 479-575-2252 |
| Fay Jones School of Architecture and Design | 112 W. Center St., Suite 700 | 479-575-4945 |
| Fulbright College of Arts \& Sciences | 517 Old Main | 479-575-2509 |
| Sam M. Walton College of Business | WCOB 328 | 479-575-4622 |


| College of Education and Health Professions | Office of the <br> Associate Dean, <br> GRAD 317 | $479-575-4205$ |
| :--- | :--- | :--- |
| College of Engineering | BELL 3189 |  |$\quad 479-575-5412$

## New Undergraduate Student Orientation

Admissions

232 Silas H. Hunt Hall 479-575-4200

## Registration

| Office of the Registrar | Main Office: 141 | 479-575-5451 |
| :--- | :--- | :--- |
|  | Uptown East (UPTE) |  |
|  | Campus Office: 146 | 479-575-5451 |
|  | Silas H. Hunt Hall |  |
|  | (HUNT) |  |

## ROTC

| Air Force ROTC | 319 Memorial Hall | $479-575-3651$ |
| :--- | :--- | :--- |
| Army ROTC | 207 Military Science | $479-575-4251$ |
|  | Building |  |

## Student Affairs

| Vice Provost for Student Affairs and Dean of Students | 325 Administration <br>  <br> Building |
| :--- | :--- |

Testing (ACT, CLEP, LSAT, GRE, ect.)
Toll-Free Number

Toll-Free Number
1-800-377-8632
The following offices may be reached by dialing this toll-free number between 8 a.m. and $4: 30 \mathrm{p} . \mathrm{m}$. each weekday:

- Office of Admissions (undergraduate)
- Office of Scholarships and Financial Aid
- New Student Orientation


## Transcripts, Academic Records

| Office of the Registrar | Main Office: 141 | 479-575-5451 |
| :--- | :--- | :--- |
|  | Uptown East (UPTE) |  |
|  | Campus Office: 146 | 479-575-5451 |
|  | Silas H. Hunt Hall |  |
|  | (HUNT) |  |

## University Switchboard <br> University Switchboard

479-575-2000

## Veterans Affairs

## University of Arkansas

An office and building address from above

1 University of Area Code: 479
Arkansas Fayetteville,
AR 72701

## 2023-24 Academic Calendar

## Summer 2023/May Intersession May Intersession 2023 - (10 Class Days; includes Saturday)

| Date | Description |
| :--- | :--- |
| May 15 | Classes Begin |
| May 15 | Last day to register, add a course, <br> or change from audit to credit |
| May 16 | Last day to drop without a mark of <br> "W" or change from credit to audit |
| May 22 | Last day to drop a May Intersession <br> class wth a "W" |
| May 25 | Last day to officially withdraw from <br> the May Intersession <br> May 25 |
| May 26 | Last day of classes for the May <br> Intersession |

Summer Session 2023-10 Week (48 Class
Days)

| Days) | Description |
| :--- | :--- |
| Date | Classes Begin |
| May 30 | Last day to register, add a course, <br> or change from audit to credit |
| June 1 | Last day to drop without a mark of <br> "W" or change from credit to audit |
| June 7 | Independence Day Holiday |
| July 4 | Last day to drop a 10 Week class <br> with a "W" |
| July 14 | Last day to officially withdraw from <br> the 10 Week session |
| Aug. 3 | Last day of classes for the 10 Week <br> session |
| Aug. 4 | Last Day of Class |
| Aug. 4 |  |

Summer Session 2023 - First 5 Week ( 24
Class Days)

| Date | Description |
| :--- | :--- |
| May 30 | Classes Begin |
| May 31 | Last day to register, add a course, <br> or change from audit to credit |
| June 1 | Last day to drop without a mark of <br> "W" or change from credit to audit <br> Last day to drop a First 5 Week <br> class with a "W" |
| June 21 | Last day to officially withdraw from <br> the First 5 Week session |
| June 29 | Last day of classes for the First 5 <br> Week session |
| June 30 |  |

Summer Session 2023 - Second 5 Week (24 Class Days)

| Date | Description |
| :--- | :--- |
| July 3 | Classes Begin |
| July 5 | Last day to register, add a course, <br> or change from audit to credit |
| July 6 | Last day to drop without a mark of <br> "W" or change from credit to audit |
| July 26 | Last day to drop a Second 5 Week <br> class with a "W" |
| Aug. 3 | Last day to officially withdraw from <br> the Second 5 Week session |
| Aug. 4 | Last day of classes for the Second 5 <br> Week session |

## Summer Session 2023-8 Week (37 Class Days)

Date
May 30
June 1

June 5

July 4
July 7 Last day to drop an 8 Week session

July 19

July 20
Description
Classes Begin
Last day to register, add a course,
or change from audit to credit
Last day to drop without a mark of
"W" or change from credit to audit
Independence Day Holiday
Last day to drop an 8 Week session
class with a "W"
Last day to officially withdraw from
the 8 Week session
Last day of classes for the 8 Week
session

Fall 2023/August Intersession August Intersession 2023-(10 Class Days; includes Saturday)

| Date | Description |
| :---: | :---: |
| August 7 | Classes Begin |
| August 7 | Last day to register, add a course, or change from audit to credit |
| August 8 | Last day to drop without a mark of "W" or change from credit to audit |
| August 14 | Last day to drop an August Intersession class with a "W" |
| August 17 | Last day to officially withdraw from the August Intersession |
| August 17 | Last day of classes for the August Intersession |
| August 18 | Final Exams |
| Fall 2023 - (73 Class Days; 43 MWF, 30 TT) |  |
| Date | Description |
| August 21 | Classes Begin |
| August 25 | Last day to register, add a course, or change from audit to credit |
| September 1 | Last day to drop without a mark of "W" or change from credit to audit |


| September 4 | Labor Day Holiday |
| :--- | :--- |
| October 16-17 | Fall Break |
| October 30 | Advanced Registration for Spring <br> 2023 begins for currently enrolled <br> students |
| November 17 | Last day to drop a full semester <br> class with a "W" |
| November 22 | Thanksgiving Break (student break; <br> University offices will be open) |
| November 23-24 | Thanksgiving Holiday |
| December 7 | Last day to officially withdraw from <br> all classes |
| December 7 | Last day of classes for fall semester |
| December 8 | Reading Day |
| December 11-15 | Final Exams |
| December 16 | Commencement |

## 2024 Academic Calendar

January 2024/January Intersession January Intersession 2024-(10 Class Days; includes two Saturdays)

| Date | Description |
| :---: | :---: |
| January 2 | Classes Begin |
| January 2 | Last day to register, add a course, or change from audit to credit |
| January 3 | Last day to drop without a mark of "W" or change from credit to audit |
| January 9 | Last day to drop a January <br> Intersession class with a "W" |
| January 12 | Last day to officially withdraw from the January Intersession |
| January 12 | Last day of classes for the January Intersession |
| January 13 | Final Exams |
| Spring 2024-(73 Class Days; 43 MWF, 30 TT) |  |
| Date | Description |
| January 15 | Martin Luther King Day |
| January 16 | Classes Begin |
| January 22 | Last day to register, add a course, or change from audit to credit |
| January 29 | Last day to drop without a mark of "W" or change from credit to audit |
| March 18-22 | Spring Break Week |
| April 3 | Advanced Registration for Summer and Fall 2023 terms begins for currently enrolled students |
| April 21 | Last day to drop a full semester class with a "W" |
| May 2 | Last day to officially withdraw from all classes |
| May 2 | Last day of classes for spring semester |
| May 3 | Reading Day |


| May 6-10 | Final Exams |
| :--- | :--- |
| May 11 | Commencement |

## Summer 2024/May Intersession May Intersession 2024-(10 Class Days; includes Saturday)

| Date | Description |
| :--- | :--- |
| May 13 | Classes Begin |
| May 13 | Last day to register, add a course, <br> or change from audit to credit |
| May 14 | Last day to drop without a mark of <br> "W" or change from credit to audit |
| May 20 | Last day to drop a May Intersession <br> class with a "W" |
| May 23 | Last day to officially withdraw from <br> the May Intersession |
| May 23 | Last day of classes for the May <br> Intersession |
| May 24 | Final Exams |

Summer Session 2024-10 Week (48 Class Days)

| Date | Description |
| :--- | :--- |
| May 27 | Memorial Day Holiday |
| May 28 | Classes Begin |
| July 4 | Independence Day Holiday |
| Aug. 2 | Last day of classes for the 10 Week <br> session |

## Summer Session 2024 - First 5 Week (24 Class Days)

| Date | Description |
| :--- | :--- |
| May 27 | Memorial Day Holiday |
| May 28 | Classes Begin |
| June 28 | Last day of classes for the First 5 |
|  | Week session |


| Summer Session 2024 - Second 5 Week (24 |  |
| :--- | :--- |
| Class Days) |  |
| Date Description <br> July 1 Classes Begin <br> July 4 Independence Day Holiday <br> August 2 Last day of classes for the Second 5 <br>  Week session |  |

## Summer Session 2024-8 Week (37 Class Days)

Date
May 27
May 28
July 4
July 18

## Description

Memorial Day Holiday
Classes Begin
Independence Day Holiday Last day of classes for the 8 Week session

## Board of Trustees

The trustees of the University of Arkansas System are appointed by the governor of Arkansas to 10 -year overlapping terms. The board sets policy for the University of Arkansas as well as other universities, colleges and institutes within the system.

## Morril Harriman, chair

Morril Harriman of Little Rock is an attorney with the Mitchell Williams law firm. He served as Governor Mike Beebe's chief of staff from 2007 to 2015. Prior to that, Harriman served 16 years in the Arkansas Senate. He earned both his bachelor and law degrees from the University of Arkansas. His term expires in 2024.

## Sheffield Nelson, vice chair

Sheffield Nelson of Little Rock is a senior partner at Jack Nelson and Jones.Sheffield Nelson of Little Rock is a retired president and chief executive office of Arkla Gas. He has served on the board of the Arkansas Department of Higher Education and the Arkansas Game and Fish Commission. Nelson earned his undergraduate degree from Arkansas State Teachers College, now the University of Central Arkansas, and his Juris Doctor degree from the University of Arkansas. His term expires in 2025.

## Kelly Eichler, secretary

Kelly Eichler of Little Rock is the public policy director for Gov. Asa Hutchinson. She previously served as a deputy prosecutor for Pulaski County and on the Arkansas Board of Corrections. She earned a bachelor's degree from the University of Arkansas and a law degree from the University of Arkansas at Little Rock Bowen School of Law. Her term expires in 2026.

## Ted Dickey, assistant secretary

Ted Dickey is a general partner at CapRocq Core real estate fund and an adviser to Innovate Arkansas, a technology entrepreneurship initiative. Dickey previously spent six years in corporate finance at Stephens Inc. He earned his bachelor's degree and was elected Phi Beta Kappa the University of Arkansas before earning his Juris Doctor at the $U$ of $A$ School of Law. He served on the $U$ of $A$ Technology Park Board and was appointed to the Arkansas Ethics Commission. His term expires in 2030.

## Tommy Boyer

Tommy Boyer, of Fayetteville, graduated from the University of Arkansas, Fayetteville in 1964, where he was also an All-American basketball player. He retired from the Eastman Kodak Company in 1989, and founded Micro Images in Amarillo, Texas. Within two years, Micro Images had become the largest Kodak document imaging systems broker and reseller in the United States. Boyer was inducted into the Arkansas Business Hall of Fame in 2013 and the Arkansas Sports Hall of Fame in 2000. His term expires in 2027.

## Steve Cox

Steve Cox of Jonesboro graduated from the University of Arkansas in 1982 after having earned All Southwest Conference and All America honors during his football career as a punter and kicker, later playing in the NFL for the Cleveland Browns and Washington Redskins. He rose through the ranks of banking before becoming a managing partner at Rainwater and Cox LLC, which oversees ownership and management of an array of commercial, hotel and agricultural properties. His term expires in 2028.

## Ed Fryar

Edward Fryar Jr. of Rogers is a graduate and former professor of the University of Arkansas. He earned degrees in economics and agricultural economics and was a professor of agricultural economics for more than 13 years. He co-founded Ozark Mountain Poultry in Rogers in 2000, which grew from 15 employees to more than 1,800 before selling it in 2018. He was inducted into the Arkansas Agriculture Hall of Fame in 2019. His term expires in 2029.

## Jeremy Wilson

Jeremy Wilson of Bentonville is a graduate of the University of Arkansas with more than 25 years of business experience in the state. In 2012, he cofounded NewRoad Capital Partners, a private equity firm. He is also founder and chair of NOWDiagnostics, a leader in innovative diagnostic health testing. His term expires in 2031.

## Nathaniel Todd

Retired Col. Nathaniel "Nate" Todd is director of the Arkansas Department of Veterans Affairs and previously served as the chief financial officer for the Central Arkansas Veterans Health Care System in North Little Rock. Prior to his retirement from military service after a 37 -year career, he served as the director of health financial policy in the office of the U.S. Army Surgeon General. He is from Pine Bluff and is a fellow of the American College of Healthcare Executives. His term expires in 2032.

## Kevin Crass

Kevin Crass is a senior partner in the litigation practice group at Friday, Eldredge \& Clark LLP in Little Rock. He is a graduate of Ouachita Baptist University and the UA Little Rock Bowen School of Law. He served on the Board of the 8th Circuit Court of Appeals Bar Association and the Federal Practice Committee for the United States District Court for the Eastern District of Arkansas. He currently serves on the Board of Visitors of UA Little Rock, is the chair of the War Memorial Stadium Commission, and a past chair of the Little Rock Regional Chamber of Commerce. His term expires in 2033.

## Administrative Officers

## System Administration

President, University of Arkansas System — Donald Bobbitt, B.S., Ph.D.

## Chancellor and Vice Chancellors

Chancellor, University of Arkansas - Charles F. Robinson II, B.A., M.A., Ph.D.

Provost and Executive Vice Chancellor for Academic Affairs - Terry Martin, B.S.E.E., M.S.E.E., Ph.D.

Vice Chancellor for Economic Development - Mike Malone, B.A., M.A
Executive Vice Chancellor for Finance and Administration - Ann Bordelon, B.S.B.A.

Vice Chancellor for Government and Community Relations - Randy Massanelli, B.S.B.A.

Vice Chancellor for Intercollegiate Athletics — Hunter R. Yurachek, B.S., M.A.

Interim Vice Chancellor for Research and Innovation — Margaret Sova McCabe, B.A., J.D.

Vice Chancellor for Student Affairs - Jeremy Battjes, B.S.E., M.Ed., Ed.D.

Vice Chancellor for University Advancement - Scott Varaday, B.A., M.S.F.S, J.D.

## Deans and Vice Provosts

Dean of Honors College - Lynda Coon, B.A., M.A., Ph.D.
Interim Dean of Dale Bumpers College of Agricultural, Food and Life Sciences - J.F. Meullenet, B.S., M.S., Ph.D.

Dean of Fay Jones School of Architecture and Design - Peter MacKeith, B.A., M.Arch.

Interim Dean of Fulbright College of Arts and Sciences - Kathryn Ann Sloan, B.A., M.A., M.B.A., Ph.D.

Interim Dean of Sam M. Walton College of Business - Brent Williams, Ph.D.

Dean of College of Education and Health Professions - Kate Mamiseishvili, B.A., M.A., Ph.D.

Dean of College of Engineering — Kimberly LaScola Needy, B.S.I.E., M.S.I.E., Ph.D.

Dean of Graduate School and International Education - Ed Pohl, B.S. M.S.R.E., M.S.S.E., M.S.E.M., Ph.D.

Dean of School of Law - Cynthia Nance, B.S., J.D., M.A.
Dean of Students - Melissa Harwood-Rom, B.A., M.F.A., M.S.Ag.E.
Dean of University Libraries - Jason J. Battles, B.A., M.A., M.L.S.
Dean of Admissions and Vice Provost for Enrollment Services - Suzanne McCray, B.A., M.A., Ph.D.

Vice Provost for Academic Affairs - Jim Gigantino, B.A., Ph.D.
Vice Provost for Distance Education - Cheryl Murphy, B.A., M.A., Ed.D.
Vice Provost for Faculty Affairs - Anna Zajicek, B.S., M.S., Ph.D.
Vice Provost for Planning — Colleen Briney, B.A., M.S.

## University Profile

## Vision

The University of Arkansas represents the best of public higher education, advancing Arkansas while building a better world.

## Mission

The University of Arkansas is determined to build a better world by providing transformational opportunities and skills, promoting an inclusive and diverse culture, nurturing creativity, and solving problems through research and discovery, all in service to Arkansas.

Since 1871, our fundamental purpose as a land-grant institution and state flagship remains unchanged - to serve the state of Arkansas as a partner, resource and catalyst by:

- Providing access to a comprehensive and internationally competitive public education, and fostering student success across a wide spectrum of disciplines.
- Utilizing research, discovery and creative activity to improve the quality of life, develop solutions to the challenges we face and drive the state's economy.
- Contributing service and expertise through outreach, engagement and collaboration.


## History

The University of Arkansas was founded in 1871 and will celebrate its 150 th anniversary during the calendar year of 2021. The university opened its doors to students on January 22, 1872. Under the Morrill Land-Grant College Act of 1862, federal land sales provided funds for the new university, which was charged with teaching "agricultural and the mechanic arts," "scientific and classical studies," and "military tactics" to Arkansas scholars.

Statewide elections, held to establish bonds to help finance the university, eventually determined the school's location. Washington County and the city of Fayetteville submitted the highest bid, a total of \$130,000, to which was added a $\$ 50,000$ state appropriation for the benefit of the institution and $\$ 135,000$ from the sale of federal lands for the university's first endowment. With \$12,000 of this money, the university purchased a 160-acre farm, the homestead of William and Martha Mcllroy, and established its campus on a hilltop looking out upon the Ozark Mountains.

There were few facilities and little money that first academic year, but the eight students and three faculty members who gathered for classes in 1872 showed the same dedication to learning and commitment to excellence that has carried the University of Arkansas into the 21st century. Over the past 150 years, the university has developed into a mature institution with 10 schools and colleges, more than 1,100 full-time faculty members, and more than 30,000 students. Its graduates number more than 200,000 and their names are engraved in the sidewalks of campus, a lasting tribute to alumni that is unique in America.

The University of Arkansas serves as the major provider of graduatelevel instruction in Arkansas. The research and scholarly endeavors of its faculty make it an economic and cultural engine for the state. And its public service activities reach every county in Arkansas, throughout the nation, and around the world. Find out more about the university's history (http://www.uark.edu/about/history.php) or browse our timeline (http:// uark.edu/about/time-line.php).

## Today at the University of Arkansas Campus

Students pursue a broad spectrum of academic programs leading to baccalaureate, master's, doctoral, and professional degrees, not only in traditional disciplines within arts, humanities, social sciences, and natural sciences, but also in the core professional areas of agricultural, food and life sciences; architecture; business; education; engineering; nursing; human environmental sciences; and law.

The University of Arkansas houses more than 200 academic programs and offers bachelor's degrees in more than 75 areas of study. Students may also pursue a wide range of graduate degrees, including the Master's, the Educational Specialist, the Doctor of Education, and the Doctor of Philosophy.

The Carnegie Foundation categorizes the University of Arkansas as a research institution with "highest research activity," placing the university among a small percentage of colleges and universities nationwide and in a class by itself within the state of Arkansas. U.S. News and World Report consistently ranks the university among the top tier of institutions of higher education. Faculty members perform cutting-edge research for which they annually win prestigious grants and awards, and the university encourages undergraduates to participate in the research process. Such opportunities enhance the learning process by providing handson experience in lab and research techniques, by developing students' abilities to implement, experiment, discover and teach, and by fostering a mentoring relationship early in students' academic careers.

Research programs involving both faculty and students serve as vital sources of information on the economic and social needs of Arkansas. In many fields, research performed at the University of Arkansas reaches beyond the state to provide insight and guidance on issues of national and international concern. The university provides extensive technical and professional services to varied groups and individuals throughout the state, helping to further Arkansas' economic growth. The university operates nationally respected self-paced (correspondence) courses; it assists other institutions in developing educational programs; it offers graduate programs, both cooperatively and singly, throughout the state; and it makes specialized campus resources such as computing services and library holdings available to other institutions in the state.

Classes at the university maintain a low average ratio of students to instructor, although individual classes may range from a large generallecture class of 200 to a focused special-topics class of 4 or 5 students. University of Arkansas students are given the tools and encouragement needed to excel. Over the last 15 years, more than 200 undergraduate Arkansas students have become Rhodes, Gates Millennium, Madison, Marshall, Goldwater, Fulbright, Boren, Gilman and Truman scholars. More than 100 graduate students have received National Science Foundation Graduate Research Fellowships. Find out more about the university's numbers (http://www.uark.edu/about/by-the-numbers.php).

# Academic Resources and Facilities 

The University of Arkansas provides a variety of resources for students to enhance their ability to attend college, improve their studies in class, and aid their academic research as they advance through their curricula.

The programs and services listed at left provide advice, tools and inspiration for high school students; individual tutoring for students on campus and infrastructure such as libraries and technology support that offer University of Arkansas students ongoing support throughout their college careers.

## Center for Multicultural and Diversity Education

The Center for Multicultural and Diversity Education provides academic, cultural and social programs intended to promote inclusiveness, foster achievement and assist in the development and advancement of a diverse student body.

The center is located on the fourth floor of the Arkansas Union in Room 404, and can be contacted at 479-575-8405 or by visiting multicultural.uark.edu (http://multicultural.uark.edu).

## Information Technology Services

Information Technology Services, or IT Services as most people refer to it, provides technology solutions that support and enable teaching, learning, research and discovery for students, faculty and staff at the University of Arkansas.

Supported services include student information systems, learning management systems, cloud storage, email and collaboration tools, research computing resources, software, internet access and the campus network. Learn more about everything IT Services provides at its.uark.edu (https://its.uark.edu/).

New members of the university community can get started with technology using the Get Started with Tech guide (https://its.uark.edu/getstarted/).

Tech support is available 7 days a week at the IT Help Desk in the Arkansas Union, by phone at 479-575-2905 or online at help.uark.edu (https://help.uark.edu/).

## Reasonable Accommodation for Students with Disabilities

The Center for Educational Access, 209 Arkansas Union, is the central campus resource for students who require reasonable accommodations in order to access the programs, services and activities offered through the University of Arkansas. The center's staff work in partnership with the individual student to communicate and facilitate any accommodation needs to faculty and staff. Accommodation determination is based in part on medical or psychological documentation provided to the Center for Educational Access by the student. Students must meet with one of the center's staff for an access plan meeting to discuss their needs and provide such documentation before any accommodations can be granted.

To register for services or for more information, contact the Center for Educational Access, University of Arkansas, 209 ARKU, Fayetteville, AR 72701, phone 479-575-3104 ; e-mail: ada@uark.edu; Web: Center for Educational Access (http://cea.uark.edu/) (online request for services available).

## Student Success Center

Trevor Francis
Director of Student Services
479-575-7627
tafranc@uark.edu (tafranc@uark.edu)
Student Success Center website (https://success.uark.edu/)
The Student Success Center is the embodiment of the $U$ of A's commitment to each and every student. The program provides help to individual students through tutoring, supplemental instruction, online chat, courses that teach students about college, and a writing and communication studio, among other resources. The center is based in the Cordia Harrington Center for Excellence, just north of Old Main.

## TRIO Student Support Services

The TRIO Student Support Services program is designed to provide a powerful combination of programs and services to students who are firstgeneration, and/or modest-income, and/or individuals with disabilities. The services provided by TRIO place an emphasis on individual assessment, counseling, advising, and skill building. Some of these services include: academic/financial/personal counseling, financial scholarships, social etiquette instruction, career and graduate school preparation, academic/ cultural enrichment, assistance with tutoring, and mentorship. The overarching goal of the University of Arkansas Student Support Services program is to empower students, assist them in achieving academic excellence, and seeing them through to graduation.

Student Support Services is a department in the Division of Student Affairs. The office is located on the Garden Level of Gregson Hall. For more details, call Student Support Services at 479-575-3546 or visit the Student Support Services website (https://success.uark.edu/about-us/ trio/).

## Talent Search Programs

## College Project Talent Search, Educational Talent Search, and University Access Talent Search

Talent Search is an early intervention/educational opportunity program. Serving students in grades 6-12, the program promotes skills and disseminates information necessary for successfully entering college and completing a baccalaureate degree. Emphasizing personal/career development, financial literacy, technological/academic skills, and ACT readiness through a developmental curriculum of college preparatory workshops, students are prepared for the rigors of higher education. Campus visits, academic monitoring/advising, and guidance in the completion of college and financial aid applications are key components for participants and their families. Summer enrichment and campusbased events are also hosted as funding permits.

Talent Search is a federal TRIO program funded by the U.S. Department of Education. The University of Arkansas has three Talent Search grant projects which serve distinct target areas in Benton, Carroll, Crawford, Sebastian and Washington counties in Arkansas, and McDonald County,

Missouri. At least two-thirds of students served by the programs must be low-income and in the first generation of their family to attend college. They exhibit academic potential and attend one of the 37 target schools served. For additional information and a full listing of target schools, visit the Talent Search website (http://talentsearch.uark.edu/).

The Talent Search Programs office is located at the university's Uptown Campus East, 1083 E. Sain Street, UPTE 128, Fayetteville, Arkansas. Call 479-575-3553 for more information.

## Testing Services

The Office of Testing Services is a unit of the Division of Academic Affairs housed within the Graduate School and International Education.

The office's mission is to provide high quality testing services for students, graduates, professionals, and those from the surrounding community.
The Office of Testing Services is certified by the National College Testing Association.

The Office of Testing Services administers such national tests as:

- ACT Assessment
- Accuplacer
- Law School Admission Test (LSAT)
- Graduate Management Admission Test (GMAT)
- Graduate Record Examination (GRE)
- College-Level Examination Program (CLEP)

National testing companies determine testing dates and deadlines. The Office of Testing Services also offers a number of institutional tests such as the Test of English as a Foreign Language (TOEFL) and the Spoken Language Proficiency Test (SLPT). These tests are scheduled at various times as demand dictates. Test fees vary depending on the test.

To obtain information about exam dates and deadlines, contact the Office of the Testing Center at 97 N. Razorback Road (https:// campusmap.uark.edu/?pnl_disp=Y\&bldg_code=TEST\&parklot=Y-Student-Faculty\%2FStaff-Parking_Meters-ADA_Parking-Remote), Fayetteville, or call 479-575-3948.

Find out more at the Testing Services website (http://test.uark.edu/).

## University Libraries

The library system of the University of Arkansas, Fayetteville, includes the David W. Mullins Library, the main research facility on campus, and four branch libraries:

- The Robert A. and Vivian Young Law Library (http://law.uark.edu/ library/)
- The Fine Arts Library (http://libinfo.uark.edu/FAL/)
- The Chemistry and Biochemistry Library (http://libinfo.uark.edu/ chemistry/)
- The Physics Library (http://libinfo.uark.edu/physics/)

The spacious Helen Robson Walton Reading Room is Mullins Library's most popular quiet study area, but group study space and graduate student study space is also available. More than 200 databases and thousands of electronic journals are accessible from anywhere with a University ID. Librarians onsite assist in locating and using library resources, or students may send questions by email, phone, or 24/7 chat.

Subject librarians (http://libinfo.uark.edu/info/specialists.asp) are also available for one-on-one research consultations tailored to individual research questions, whether onsite, over the phone, or even remotely by video software. Librarians conduct orientation sessions on research methods and software throughout the semester and the Quality Writing Center (http://qwc.uark.edu/) has a satellite location inside Mullins Library.

With 2.1 million volumes and more than 56,000 journal titles, students will find research material for every subject. Other resources in the collections include several thousand maps, manuscripts, and more than 33,000 audio and visual materials, including music scores, recordings, and movies, available through the Performing Arts and Media (http://libraries.uark.edu/ AV/default.asp) Department on the lower-level of Mullins Library.

A full-service computer commons (GACL) is located on the lobby level of Mullins, complete with printing stations and state-of-the-art scanners. Laptops and iPads are available to check-out to take advantage of wireless access anywhere in the library. Visit the University Libraries website (http://libinfo.uark.edu/) to learn more about services and collections, or access My Library (https://library.uark.edu/patroninfo~S1/) to check accounts, renew books, request holds, or save catalog searches.

Items not owned by the University Libraries may be obtained through Interlibrary Loan (http://libinfo.uark.edu/ill/default.asp). Requested items in electronic format will be sent directly to desktops, usually within 24 hours; physical items are held for pickup at the main service desk on the Lobby Level. The University Libraries have had official status as a United States government depository since 1907, and the Government Documents Department has been a depository for Arkansas state publications since 1993. The University Libraries' map collection and GIS (http://libinfo.uark.edu/GIS/default.asp) (geographic information systems) program, including a public GIS workstation equipped with ArcGIS Desktop Suite, are also available.

In Special Collections, students can read rare books from around the world; consult the largest book collection related to Arkansas; handle historic letters, diaries, magazines, and old photographs in the archives; and watch old black and white films made in or about the state. A number of digital collections and exhibits (http://libinfo.uark.edu/eresources/ digitalcollections.asp) are available through the Special Collections website (http://libinfo.uark.edu/SpecialCollections/). Special Collections also holds the University Archives, the Arkansas Collection, and the Arkansas Architectural Archives.

To stay up-to-date on the Libraries' programs, resources, and events, follow @UARKLibraries on Facebook, Twitter, Instagram, and Pinterest. For information concerning collections and services, please inquire at 479-575-4104 or refer@uark.edu. For any other questions, please contact the Dean's Office at 479-575-6702.

## Faculty

Allen, Amy L., M.L.I.S. (University of Alabama), B.A. (University of Arkansas), Assistant Librarian, 2008, 2010.
Daniels, Donna E., M.L.S., B.A. (Western Michigan University), Associate Librarian, 1982.
Dean, Jason W., M.S. (Syracuse University), B.B.S. (Hardin-Simmons University), Assistant Librarian, 2013.
Fritz, Angela I., Ph.D. (Loyola University), M.A. (University of WisconsinMadison), B.A. (University of Iowa), Associate Librarian, 2014.
Ganson, Judy, M.P.A. (University of California-Riverside), M.S.
(University of Illinois-Urbana-Champaign), B.A. (Purdue University), Associate Librarian, 2001.

Gibeault, Michelle J., M.S. (University of North Carolina), B.A. (University of California, Berkeley), Assistant Librarian, 2013.
Gibson, Tess, M.A. (University of South Dakota), M.L.S. (Emporia State University), B.A. (Baker University), Associate Librarian, 2005, 2011.
Gilbertson, Mary A., M.L.S. (University of North Texas), B.A. (University of Arkansas), A.A. (NorthWest Arkansas Community College), Associate Librarian, 2001, 2008.
Hackstadt, Angela, M.L.I.S. (University of Alabama), B.A. (University of Arkansas), Assistant Professor, .
Johnson, Normastel Mosby, M.L.S. (Simmons College), B.A. (Vanderbilt University), Associate Librarian, 1989.
Jones, Phillip J., M.S. (University of Illinois-Urbana-Champaign), M.A. (University of California-Irvine), B.A. (University of California-Santa Barbara), Associate Librarian, 2003.
Juhl, Beth, M.L.S. (Columbia University), B.A. (University of Texas at Austin), Librarian, 1993, 1999.
King, Michele S., M.L.S., B.F.A. (University of Oklahoma), Associate Librarian, 1987.
Kirkwood, Patricia Elaine, M.S. (University of Illinois-Urbana-
Champaign), B.S. (Pacific Lutheran University), Associate Librarian, 2004.
Kulczak, Deborah E., M.L.S., B.A. (Kent State University), Librarian, 1988, 2013.
Laincz, Jozef, Ph.D. (University of Arkansas), Magister, B.S. (Comenius University Bratislava), Assistant Librarian, 2015.
Lehman, Kathleen A., M.L.I.S. (University of Wisconsin-Milwaukee),
M.A.T. (Webster University), B.A. (University of Iowa), Assistant Librarian, 2010.

Lennertz, Lora, M.I.S. (University of Arkansas), M.L.I.S., B.A. (University of Illinois-Urbana-Champaign), Librarian, 1991, 2011.
McKee, Elizabeth Chadbourn, M.L.S. (University of Oklahoma), B.A. (University of Arkansas), Librarian, 1974.
Parker, Martha A., M.L.I.S. (University of North Carolina at Greensboro), B.A. (Queens University of Charlotte), A.A. (Central Piedmont Community College), Assistant Librarian, 2012.
Parker-Gibson, Necia T., M.L.I.S. (Louisiana State University), B.S.A. (University of Arkansas), Librarian, 1991, 2014.
Parsch, Janet H., M.P.A. (University of Arkansas), M.A., B.A. (University of Wisconsin-Madison), Librarian, 1983.
Pollock, Chad Aaron, M.A. (University of Missouri-Columbia), M.Div. (Baylor University), B.A. (Ouachita Baptist University), Assistant Librarian, 2011.

Rogers, Marilyn L., M.L.S. (Louisiana State University), B.A.
(Northwestern State University), Assistant Librarian, 1987.
Salisbury, Luti, M.Sc. (Loughborough University of Technology), B.Sc. (University of Guyana), Distinguished Professor, 1992, 2015.
Spiegel, Sarah E., M.S. (University of Illinois-Urbana-Champaign), B.A. (Bryn Mawr College), Assistant Librarian, 2007, 2009.
Stankus, Tony, M.L.S. (University of Rhode Island), B.A. (College of the Holy Cross), Distinguished Professor, 2007, 2014.
Szakasits, Monika, J.D. (Baylor University), B.A. (Sam Houston State University), Associate Librarian, 2004.
Williams, Colleen C., J.D. (Washington University in St. Louis), B.A. (Western Washington University), Associate Librarian, 2006, 2009.
Youngblood, Joshua Cobbs, M.A. (Florida State University), B.A. (University of Louisiana at Monroe), Assistant Librarian, 2011.
Zou, Tim Jiping, Ph.D., M.S. (University of Illinois-Urbana-Champaign), B.A. (Shandong University), Librarian, 2004, 2010.

## Upward Bound Programs

Upward Bound and Upward Bound Math and Science

Upward Bound (http://ub.uark.edu/) and Upward Bound Math and Science are early intervention programs that help low-income and potential first-generation college students prepare for higher education. These programs bring high school students in grades $9-12$ to the University of Arkansas campus on weekends and during the summer to receive instruction in mathematics, laboratory sciences, composition, literature, and foreign languages. The programs also provide academic and social support through tutoring, counseling, mentoring, cultural enrichment, financial literacy, field trips, college planning, and financial aid assistance. For students just completing their senior year of high school, Upward Bound provides a summer residential bridge program that enables participants to earn up to six hours of college credit. Funding is provided through grants from the U.S. Department of Education.

## Veterans Upward Bound

Veterans Upward Bound (http://vub.uark.edu/) is designed to identify and serve the unique needs of veterans who are low-income and potential first-generation college students, who have the academic potential and desire to enter and succeed in a program of higher education. Eligible veterans must have completed a minimum of 180 days of active duty in the military and hold any discharge other than dishonorable, or discharged because of a service connected disability, a member or a reserve component of the U.S. Armed Forces called to active duty for a period of more than 30 days, or a member of a reserve component of the U.S. Armed Forces who served on active duty in support of a contingency operation on or after September 11, 2001. Services include Accuplacer testing, tutoring, guidance counseling, assistance in filing financial aid and VA benefit forms, academic/career advisement, test preparation for entrance exams, and courses in English, Spanish, math, science, and computer technology. Courses are offered days and evenings each semester. Funding is provided through a grant from the U.S. Department of Education. Call 479-575-2442 for more information.

The Upward Bound and Veterans Upward Bound offices are located at the university's Uptown Campus West, 1001 E. Sain St., Fayetteville.

## Online Education

Cheryl Murphy
Vice Provost for Distance Education
Global Campus
800-952-1165
globalcampus@uark.edu
U of A ONLINE (https://online.uark.edu/)
Academic colleges and schools at the University of Arkansas provide flexible learning options through distance education and online learning options for undergraduate and graduate students. Traditional online courses, self-paced online (correspondence) courses, and online degree programs remove the barriers of time and distance. Support units provide the web-based resources and services necessary for distance and online students to reach their educational and professional goals.

## Global Campus

The Global Campus (http://globalcampus.uark.edu/) serves as a portal for online, distance and professional education programs and courses provided by the University of Arkansas. Experienced staff members collaborate with the university's academic colleges and other academic units to develop and facilitate quality courses and programs that help students reach educational and professional goals.

## State Authorization and Distance Education Beyond Arkansas

The University of Arkansas, Fayetteville delivers online education programs and courses throughout the United States and internationally. All programs have been approved by the Arkansas Department of Higher Education. Many states have prescribed an "authorization" process for out-of-state institutions delivering online programs to its state residents to ensure quality post-secondary education, to preserve the integrity of an academic degree and to instill greater consumer protection for its student citizens.

Authorization (sometimes referred to as "registration," "licensure," "approval," etc.) indicates that certain minimum standards have been met by the institution under the laws and regulations of that state. Authorization does not constitute an endorsement of any institution, course or degree program. Credits earned at an institution may not transfer to all other institutions.

The University of Arkansas, Fayetteville, through the Global Campus, has taken steps to protect its students and operations through nationwide compliance and has been granted authorizations, exemptions and waivers from many states. In other states, the University of Arkansas, Fayetteville can operate without such authorization because the state's laws do not pertain to a public institution, to an accredited institution or to the University of Arkansas activities in that state. More specific information about state authorization can be found at the University of Arkansas Online Web page (http://online.uark.edu/about/state-authorization.html). The Global Campus supports the university's development and delivery of online and distance education.

## Student Affairs

The Division of Student Affairs supports students in pursuing knowledge, earning a degree, finding meaningful careers, exploring diversity, and connecting with the global community. We provide students housing, dining, health care resources, and create innovative programs that educate and inspire. We enhance the University of Arkansas experience and help students succeed, one student at a time.

The Office of the Vice Chancellor for Student Affairs provides leadership for the division and serves as a liaison to other administrative offices, faculty, and student governing groups. The office is a central source of information concerning university policies and procedures affecting student life and co-curricular programs and services.

The Office of the Dean of Students under the Vice Chancellor for Student Affairs emphasizes student advocacy while broadening the development of services and programs that address a range of student and campus needs. Departments in the Division of Student Affairs are dedicated to developing exceptional programs and services that enhance the University of Arkansas experience and enrich the quality of student life on campus. Staff members are available and willing to assist with any issue or question that a student, staff, or faculty member may have regarding student and campus life at the University of Arkansas. The office is available for the clarification of university policies and procedures, confidential consultation, personal and family crisis assistance for students, and referral to all campus and community services. The office also seeks to assist students and faculty members in cases of emergency or extenuating circumstances. Student Affairs staff members are firmly committed to addressing the challenges and individual needs of the University of Arkansas family.

## Arkansas Union

The Arkansas Union is the community center of campus; serving students, faculty, staff, alumni, and guests. Through its facilities, programs, and services, the Arkansas Union is the place to build relationships, enrich academics, and experience campus life to the fullest. But more importantly, the Arkansas Union plays a pivotal role in putting University of Arkansas students first. It is home to essential student needs, such as food service, computer technology, student accounts, banking, and the Campus Card Office. The Arkansas Union provides social and educational programming space, as well as lounge and study areas. Additionally, recreational opportunities are available in the Arkansas Union, through the satellite fitness center, cinema, and Student Technology Center. Located inside the Arkansas Union are:

## Retail Outlets

- ATMs (various banks)
- Hill Coffee Company
- Ozark Catering Company
- Club Red Convenience Store
- Where the Wild Greens AR
- Passport Office
- PMC - Drop-Off Copy Center
- Razorback Shop
- U.S. Post Office
- Union Hair Care


## Union Food Court

- Chick-fil-A
- Rustic Italian
- True Burger
- Paper Lantern


## Facilities

- Anne Kittrell Art Gallery
- Computer Lab and Help Desk
- Verizon Ballroom
- International Connections Lounge
- Student Technology Center
- Meeting rooms
- Conference rooms
- Union Living Room
- Union Information Center
- Union Theatre
- University Recreation Fitness Center
- UP Theater


## Student Services

- Academic Initiatives and Integrity
- Arkansas Union Administration \& Event Services
- Associated Student Government
- Campus Card Office
- Career Development Center
- Center for Community Engagement
- Center for Educational Access
- Multicultural Center
- New Student and Family Programs
- Student Activities
- Treasurer's Office and Student Accounts
- University Productions


## Campus Life Center for Community Engagement

The purpose of the Center for Community Engagement is to promote civic engagement and leadership by connecting University of Arkansas students, faculty, and staff with nonprofit organizations in the Northwest Arkansas area and beyond.

In order to serve this purpose, the center maintains uark.givepulse.com (http://volunteer.uark.edu/), which enables the University of Arkansas community to search for agencies and volunteer opportunities. It allows users to log volunteer hours, or "impacts," and earn opportunities for community recognition, such as the Presidential Volunteer Service Award and Chancellor's Community Service Award. Northwest Arkansas agencies and University of Arkansas registered student organizations also utilize the site to post service opportunities and recruit volunteers. Over 350 organizations and subgroups are registered on the site, such as Habitat for Humanity, Uark Cardinal Nights, and Potter's House Thrift.

## Volunteer Action Center

The Center for Community Engagement also houses the Volunteer Action Center, a student-led volunteer coordination board with 45 members who
are dedicated to active service in the community. Each year the Volunteer Action Center provides meaningful service opportunities through events and ongoing projects that engage the university and Northwest Arkansas communities. The Volunteer Action Center sponsors programs and events including the Jane B. Gearhart Full Circle Food Pantry, Make a Difference Day, Dream B.I.G. (Believing in Girls) Mentoring Program, VAC Literacy Program, and Razorback Food Recovery. The Jane B. Gearhart Full Circle Campus Food Pantry is a nationally recognized program; the pantry serves students, staff and their families. Requests and more information can be found at fullcircle.uark.edu (http://service.uark.edu/foodprograms/ jane-b-gearhart-full-circle-food-pantry/).

Get involved in the following ways:

- Drop by the Center for Community Engagement, Arkansas Union, Room A643, and chat with the office's great staff and students.
- Look for service opportunities on uark.givepulse.com (http:// volunteer.uark.edu/) and log your hours. Just ten hours makes you a VAC member.
- Participate in events hosted by Volunteer Action Center and the Center for Community Engagement throughout the year.
- Become a Volunteer Action Center board member or weekly program volunteer. Applications are accepted each semester.


## Greek Life

The Charles and Cappy Whiteside Greek Life Leadership Center facilitates the educational process and provides resources related to programs that strengthen the growth and development of students affiliated with fraternities and sororities on campus. The overall mission is to strengthen the academic, cultural, moral, and social development of students in Greek organizations; provide training in strengths-based leadership and other personal and social skills; promote involvement in extracurricular activities and community service projects; and promote Greek Life as a productive and viable lifestyle on campus. The Greek Life Leadership Center coordinates programs such as Recruitment, Greek Getaway, Greek Life Facilitators, and Greek Summit in collaboration with the Interfraternity Council, the National Pan-Hellenic Council, the Panhellenic Council, and the United Greek Council.

The Interfraternity Council (IFC), National Pan-Hellenic Council (NPHC), Panhellenic Council (PC) and United Greek Council (UGC) govern 16 national sororities and 19 fraternities. The officers and representatives of each council work with the staff of the Greek Life Leadership Center to provide positive programs and strengths-based leadership opportunities to the members of the Greek organizations. The Charles and Cappy Whiteside Greek Life Leadership Center is in Walton Hall 101; phone 479-575-5001 or fax 479-575-3531; Web: uagreeks.uark.edu.

## New Student \& Family Programs

The Office of New Student \& Family Programs connects students and their families to the University of Arkansas campus and community by providing diverse, innovative programs and resources that support a successful collegiate experience. The department supports and collaborates on the following major initiatives:

- Extended Orientation Programs: R.O.C.K. Camp, R.O.C.K. Camp Adventure, Hog W.I.L.D. (Welcome, Involvement, Leadership and Diversity) Welcome Weeks, and Help-A-Hog
- Parent \& Family Programs: Family Weekend, Spring Family Reunion, Regional Razorback Family Networks, and the Parent \& Family Association
- Leadership \& Late Night Programs: UARK Cardinal Nights, Emerging Leaders, Student Leader of the Month, and Diversity Leadership Institute
- Transition Initiatives: New Student Welcome, Alpha Lambda Delta First Year Honor Society, A-Week, and First-Yer Leadership Summit

By providing transitional support for incoming students, their parents, and family members, our programs effectively promote the students' academic growth and support the mission of the university.

New Student \& Family Programs is located in the Arkansas Union, Room A688; phone 479-575-5002; Web: nsfp.uark.edu (http://nsfp.uark.edu/).

## Office of Student Activities

With a students-first philosophy, the Office of Student Activities provides an environment for involvement, empowerment, and collaboration through student organizations, programmatic experiences, and shared governance. The office maximizes the UA experience by advocating for all students, promoting intercultural understanding, and developing citizens who are prepared to positively impact their communities.

The Office of Student Activities, located in the Arkansas Union A665, is the central location for student organizations and activities for the university. The office can be reached at 479-575-5255 or visit the office's website at osa.uark.edu (http://osa.uark.edu/). The Office of Student Activities is responsible for the oversight and administration of the following areas:

## Student Organizations

All student organizations must register annually with the Office of Student Activities. The Office of Student Activities provides student organizations with assistance and services to help them succeed. The office also assists student organizations in event planning, provides information on facility reservations and fundraising, trademark forms, mailboxes, and locker space, and offers educational workshops for students and advisers. A limited number of offices are also awarded annually in the Arkansas Union to organizations. In partnership with SOOIE, the Student Organization Outreach and Involvement Experience, fall and spring involvement fairs are offered to help registered student organizations connect with interested students.

Types of registered student organizations (RSOs):

- Governing - An organization whose primary purpose is to serve as a governing body for a large or specific constituency of students.
- Honorary/Service - An organization that requires a minimum grade point average as a prerequisite to membership and/or is affiliated with a national service or honorary organization.
- International/Cultural - An organization whose primary purpose is to provide a forum in which participants create awareness for a specific culture through educational, social, and recreational activities.
- Professional - An organization whose primary purpose is to provide a forum for participants to discuss and develop professional careers and/or is affiliated with a national or regional association.
- Religious - An organization whose primary purpose is to provide information and activities associated with one or more religions.
- Special Interest - An organization whose primary purpose is to provide an organized format for the practice and/or pursuit of a special or common interest.
- Greek organizations are also RSOs, but register through the Greek Life Office. These are organizations with Greek letters that are
members of the National Interfraternity Council, the Panhellenic Council, National Pan-Hellenic Council, or the United Greek Council.


## Student Government

As a result of a student-led process that saw the passage of both legislation and a student referendum, student governance at the University of Arkansas is now organized under the Associated Students Supreme Constitution into two, co-equal governing bodies: the Associated Student Government and the Graduate and Professional Student Congress. Both bodies are a part of the practice of shared governance at the university.

The Associated Student Government and is an undergraduate studentled organization that enables its members to have an active voice in the decisions and policy that directly affect undergraduate students at the university. Students involved in Associated Student Government have the opportunity to positively impact the quality of student life, work with and allocate student fees, provide a voice for student concerns as well as oversee programs and policies for undergraduate students. Through the executive, legislative, and judicial branches of student government students have the opportunity to work for and among their peers to make a difference on all levels of the university. Involvement levels and time commitment vary upon duties. Visit the ASG website at asg.uark.edu (http://asg.uark.edu/) or the ASG office (Arkansas Union A669) to find out more.

As its name indicates, the Graduate and Professional Student Congress serves students who have earned a baccalaureate degree and are completing coursework for graduate certificates or degrees as well as professional practice doctoral programs. The congress works to advocate for the collective welfare of its constituents, manage and distribute student fee monies, represent the common interests of its constituents, and to speak with one voice the opinions of its members. Through its executive and legislative branches, the congress seeks to improve the lives, careers, and research of all graduate-professional students at the university. Involvement levels and time commitments vary upon duties. Visit the Graduate and Professional Student Congress website at gpsc.uark.edu (https://gpsc.uark.edu/) or the its office (Arkansas Union A647) to find out more.

## University Programs

University Programs is a volunteer student organization responsible for planning and coordinating more than 100 events annually for the campus community. University Programs provides students with cultural and educational experiences, entertainment, and fun. Eight committees, all made up of students, select, schedule and produce events such as concerts, movies, lectures, fine arts performances, gallery exhibitions, and daytime programs. Being a part of University Programs gives the student committee members leadership training and real opportunities to gain practical planning experience. Supported by a student activity fee, University Programs events are free to students.

For further information, visit the University Programs website at up.uark.edu (http://up.uark.edu/).

## University Career Development Center

The University Career Development Center (CDC) educates and empowers students to fulfill their career goals. All $U$ of $A$ students are welcome to take advantage of the center's valuable resources:

Career Advising: Career Counselors in the CDC are available to assist students who may need help selecting a college major, seeking career information, researching or exploring careers, preparing for their job search, or considering graduate school.

Career and Strength-Awareness Assessments: The STRONG Interest Assessment, FOCUS 2 and TypeFocus are career assessments that can help students make career decisions based on their interests and values. StrengthsQuest is an assessment which helps individuals discover their talents and strengths. After discovering their talents, the Career Center assists students in learning how to use their talents to achieve academic, career, and personal success.

Career Fairs: In partnership with academic areas on campus, the CDC hosts a number of career fairs each year to provide opportunities for students to connect with employers and to learn more about companies and organizations. These connections could lead to valuable internships or full-time employment.

Job Search Preparation: The CDC offers resume critiques, interview skills training, mock interviews, networking opportunities, career presentations and several professional development events throughout the academic year to prepare students for internships, co-ops or full-time jobs.

Cooperative Education Opportunities: Cooperative Education is a program that enables students to gain professional work experience in paid, degree-related positions. Co-op students earn credit, a competitive wage and valuable "real world" work experience.

Handshake: Handshake is the ultimate job and internship search tool for current UA students and recent graduates. Apply for 4000+ jobs or internships, view career fairs and events, schedule career advising appointments, and research companies all through Handshake.

Online Resources: Through the CDC's website, students have access to a multitude of resources including Optimal Resume which contains hundreds of resume templates, cover letter examples, and interview questions for students to practice and enhance their interviewing skills. Students can also view 1000+CandidCareer short videos featuring various careers and advice from professionals in the field or view our "What Can I Do With This Major?" pages featuring common careers and helpful job search sites for each UA major. These are just a few of the many resources which can be found at career.uark.edu.

## Career Track Razorbacks (formerly Professional Development

 Institute): This nationally recognized program creates opportunities for UA students to develop professional career-building skills. Participation in this program can help students gain the valuable skills which give them the competitive advantage in their job or graduate school search.For more information, check out career.uark.edu (http://career.uark.edu/).
The University Career Development Center is conveniently located in Arkansas Union Room 607, or call 479-575-2805.

## Pat Walker Health Center

Pat Walker Health Center supports students along their academic journey by providing access to professional and quality medical care, mental health care, and substance use and support services.

As a department of the Division of Student Affairs, the health center strives to enrich academic and personal development by creating an
inclusive environment that promotes positive behavior and healthy lifestyle changes.

Students are strongly encouraged to maintain health insurance coverage. A university-sponsored student health insurance policy is available to all students, student spouses and dependent children. Enrollment and cost information can be found at health.uark.edu (https://health.uark.edu/ billing-insurance/insurance.php).

Pat Walker Heath Center works to provide affordable and convenient services for the campus community. While the health center has a variety of programs and some services that are covered by the student health and wellness fee, there are charges associated with medical and psychiatry services. The services that have charges associated may be covered by your health insurance policy, however, you are not required to have insurance to use medical and mental health services. For more information about health center billing and charges, go to the Billing and Insurance (https://health.uark.edu/billing-insurance/) page.

## Medical Care

Pat Walker Health Center offers high-quality and affordable medical care through its signature clinics and programs. All medical services are performed by board-certified physicians and advanced practice registered nurses. Appointments can be scheduled online via the Patient Portal at myhealth.uark.edu, or by calling 479-575-4451.

- Primary Care Clinic offers illness and injury diagnosis and treatment, integrated behavioral health services, laboratory services, minor surgery, nurse triage, nutrition consultations, orthopedic consultations, routine wellness physical exams, screening for infectious diseases, and X-rays.
- Allergy, Immunization and Travel Clinic offers allergy shots, immunizations, international travel consultations and tuberculosis screenings.
- GYN (Women's) Clinic provides comprehensive gynecological services and personalized health care for the university community using best practices.


## Mental Health

Counseling and Psychological Services (CAPS) helps students navigate the pressures of college life and beyond with various evidence-based mental health services and programs. CAPS is staffed with licensed psychologists, counselors and social workers who work to help address common mental health issues and concerns that impact student success, such as anxiety, depression and stress.

CAPS offers services such as individual counseling, group counseling, psychiatry, emergency services, and case management. Although psychiatry services have charges associated that can be billed to insurance, most CAPS services and resources are covered by the student health and wellness fee. To learn more about CAPS services and programs, go to the Mental Health (https://health.uark.edu/mentalhealth/) page.

## 24-hour emergency mental health services are available for all students.

To access CAPS services or 24-hour emergency services, call 479-575-5276.

## Substance Education, Assessment and Recovery

Pat Walker Health Center's Substance Education, Assessment and Recovery (SEAR) program provides direct individual and group interventions to university students with alcohol, cannabis, and other substance related concerns. SEAR offers a variety of research-based prevention, early intervention, and recovery support services and programs.

SEAR frequently partners with campus groups to promote a learning environment that supports healthy behavior choices, as well as raise awareness about the risks associated with alcohol abuse and illicit drug use.

To learn more about SEAR's services and programs, go to the Substance Use \& Support (https://health.uark.edu/sear/) page.

## Accreditation

Pat Walker Health Center is accredited by Accreditation Association for Ambulatory Health Care.

CAPS is accredited by the International Association of Counseling Services.

The health center is located at 525 N. Garland Ave. If you have questions about specific services, call 479-575-4451 or go to health.uark.edu (http:// health.uark.edu/).

## Housing and Dining University Housing

University Housing is committed to providing a safe, comfortable, convenient and reasonably priced living and learning environment that promotes student success.

## Success on Campus

National research shows that academic success in the first year and beyond is directly linked to residing in an on-campus residence environment. The University of Arkansas recognizes the benefits that students receive from living on campus their first year.

## Freshman Residency Requirement

All single students who are admitted to the university with a freshman classification and under 21 years of age are required to live on campus in a residence hall, or in their parent or legal guardian's permanent home.

Students who are admitted to the University of Arkansas as transfer students from another post-secondary institution, and who have completed at least 24 credit hours at that institution are not required to live on campus.

Requests for a newly admitted freshmen to live somewhere other than with parents or a legal guardian in their permanent home will not be approved under most circumstances.

Students planning to live with their parents or legal guardian in their permanent home should complete the Living with Parent Notification form prior to attending an orientation session.

Students requesting an exemption from the University of Arkansas Freshmen Residency Requirement (https://housing.uark.edu/live-here/for-incoming-students.php) should send all required paperwork to University Housing at least three weeks prior to attending an orientation session.

This ensures the student receives approval or denial prior to attending orientation

Failure to do so could cause long delays in the orientation process. Students who need a Living with Parent Notification Form or who wish to apply for an exemption to the university's requirement for single freshmen to live on campus may refer to the information on the Housing website (https://housing.uark.edu/live-here/for-incoming-students.php), call University Housing at 479-575-3951 or email housing@uark.edu.

## Residence Hall Leadership

Residence halls are managed by a full-time coordinator for residence education, or CRE, who has completed a master's degree program in higher education, counseling or a related degree. This individual is selected for his or her academic credentials and interest in helping others as well as his or her ability to work well with college students.

In addition, every area or floor is staffed by a resident assistant, or RA, who is an upper-class student with the knowledge to answer students' questions and help students find their own answers.

Counselors-in-residence (doctoral graduate assistants) provide shortterm counseling for students (https://housing.uark.edu/services/mentalhealth.php) living in the residence halls in response to personal, social, academic, and developmental needs.

## Living Learning Communities

University Housing offers several innovative Living Learning Communities (https://housing.uark.edu/programs/living-learning-communities/), or LLCs, for students. These communities enhance student's academic success.

In an LLC, students get to live with peers who have similar interests, majors, or career plans. Living Learning Communities do not cost extra. LCC members have the opportunity to participate in fun experiences that connect learning in and out of the classroom.

Some of the initiatives include faculty-led events, major specific academic learning teams, more general thematic learning communities and other programs that assist students in their academic endeavors.

## Living Facility Options

Living options include traditional halls, suites and apartments with designations of single-gender or co-ed. Rooms are available for visually or hearing-impaired students as well as those who are physically challenged (https://housing.uark.edu/live-here/housing-contracts.php\#disabilityaccommodation).

Residence hall entry/exit doors are secured and/or monitored 24 hours a day. Some entries are unlocked to accommodate offices housed in our facilities and classes that are held in our classrooms. Most, but not all, of these areas have interior doors that secure the living floors.

Residents are provided access via an electronic access system. Students should be careful not to allow non-residents to follow them into their residence hall. Residents are provided access via a fob issued when they check-in. Students are responsible for escorting all visitors and guests at all times.

## Campus Dining

Each of the three separate dining facilities (https://housing.uark.edu/ live-here/dining-rates.php) on campus is managed by Campus Dining Services and provides a natural setting for socializing with friends and
enjoying a wide variety of high quality, nutritious meals. All students living in a residence hall, except those residing in summer school housing, are required to have a meal plan. There are several meal plans available to meet the needs of both on-campus and off-campus students.

Learn more about Campus Dining Services online at campus dining services (http://dineoncampus.com/razorbacks/).

## Inclusion and Leadership Center for Multicultural and Diversity Education

The Center for Multicultural and Diversity Education provides academic, cultural and social programs intended to promote inclusiveness, foster achievement and assist in the development and advancement of a diverse student body.

The center is located on the fourth floor of the Arkansas Union in Room 404, and can be contacted at 479-575-8405 or by visiting multicultural.uark.edu (http://multicultural.uark.edu).

## Student Support Services

The TRIO Student Support Services program is designed to provide a powerful combination of programs and services to students who are firstgeneration, and/or modest-income, and/or individuals with disabilities. The services provided by TRIO place an emphasis on individual assessment, counseling, advising, and skill building. Some of these services include: academic/financial/personal counseling, financial scholarships, social etiquette instruction, career and graduate school preparation, academic/ cultural enrichment, assistance with tutoring, and mentorship. The overarching goal of the University of Arkansas Student Support Services program is to empower students, assist them in achieving academic excellence, and seeing them through to graduation.

Student Support Services is a department in the Division of Student Affairs. The office is located on the Garden Level of Gregson Hall. For more details, call Student Support Services at 479-575-3546 or visit the Student Support Services website (https://success.uark.edu/about-us/ trio/).

## Talent Search

Talent Search is an early intervention/educational opportunity program. Serving students in grades 6-12, the program promotes skills and disseminates information necessary for successfully entering college and completing a baccalaureate degree. Emphasizing personal/career development, financial literacy, technological/academic skills, and ACT readiness through a developmental curriculum of college preparatory workshops, students are prepared for the rigors of higher education. Campus visits, academic monitoring/advising, and guidance in the completion of college and financial aid applications are key components for participants and their families. Summer enrichment and campusbased events are also hosted as funding permits.

Talent Search is a federal TRIO program funded by the U.S. Department of Education. The University of Arkansas has three Talent Search grant projects which serve distinct target areas in Benton, Carroll, Crawford, Sebastian and Washington counties in Arkansas, and McDonald County, Missouri. At least two-thirds of students served by the programs must be low-income and in the first generation of their family to attend college. They exhibit academic potential and attend one of the 37 target schools served. For additional information and a full listing of target schools, visit the Talent Search website (http://talentsearch.uark.edu/).

The Talent Search Programs office is located at the university's Uptown Campus East, 1083 E. Sain Street, UPTE 128, Fayetteville, Arkansas.
Call 479-575-3553 for more information.

## Upward Bound

## Upward Bound and Upward Bound Math and Science

Upward Bound (http://ub.uark.edu/) and Upward Bound Math and Science are early intervention programs that help low-income and potential first-generation college students prepare for higher education. These programs bring high school students in grades $9-12$ to the University of Arkansas campus on weekends and during the summer to receive instruction in mathematics, laboratory sciences, composition, literature, and foreign languages. The programs also provide academic and social support through tutoring, counseling, mentoring, cultural enrichment, financial literacy, field trips, college planning, and financial aid assistance. For students just completing their senior year of high school, Upward Bound provides a summer residential bridge program that enables participants to earn up to six hours of college credit. Funding is provided through grants from the U.S. Department of Education.

## Veterans Upward Bound

Veterans Upward Bound (http://vub.uark.edu/) is designed to identify and serve the unique needs of veterans who are low-income and potential first-generation college students, who have the academic potential and desire to enter and succeed in a program of higher education. Eligible veterans must have completed a minimum of 180 days of active duty in the military and hold any discharge other than dishonorable, or discharged because of a service connected disability, a member or a reserve component of the U.S. Armed Forces called to active duty for a period of more than 30 days, or a member of a reserve component of the U.S. Armed Forces who served on active duty in support of a contingency operation on or after September 11, 2001. Services include Accuplacer testing, tutoring, guidance counseling, assistance in filing financial aid and VA benefit forms, academic/career advisement, test preparation for entrance exams, and courses in English, Spanish, math, science, and computer technology. Courses are offered days and evenings each semester. Funding is provided through a grant from the U.S. Department of Education. Call 479-575-2442 for more information.

The Upward Bound and Veterans Upward Bound offices are located at the university's Uptown Campus West, 1001 E. Sain St., Fayetteville.

## Student Life

## Reasonable Accommodations for Students with Disabilities

The Center for Educational Access, 209 Arkansas Union, is the central campus resource for students who require reasonable accommodations in order to access the programs, services and activities offered through the University of Arkansas. The center's staff work in partnership with the individual student to communicate and facilitate any accommodation needs to faculty and staff. Accommodation determination is based in part on medical or psychological documentation provided to the Center for Educational Access by the student. Students must meet with one of the center's staff for an access plan meeting to discuss their needs and provide such documentation before any accommodations can be granted.

To register for services or for more information, contact the Center for Educational Access, University of Arkansas, 209 ARKU, Fayetteville, AR 72701, phone 479-575-3104 ; e-mail: ada@uark.edu; Web: Center for

Educational Access (http://cea.uark.edu/) (online request for services available).

## Off-Campus Student Services

## Off-Campus Student Services (OCSS)

Off-Campus Student Services (formerly Off Campus Connections) provides friendly and helpful resources, services and programs for off-campus undergraduates. Off-campus students are defined as undergraduates not living in a residence hall, fraternity, or sorority house. For information, visit the Off-Campus Student Services website (http:// occ.uark.edu/), make an appointment with a staff member in Arkansas Union Room 632, email iliveoff@uark.edu, or call 479-575-7351.

OCSS emphasizes two major priorities:

- Freshman Commuter Programs
- Off-Campus Living Education and Services

The University of Arkansas has more than 16,000 undergraduates living off-campus. Some off-campus students live near the university while others commute from hours away. Some students take advantage of online classes or majors and seldom visit campus. It is important that students living off-campus feel as welcome at the university as students living on-campus. Ongoing communication with off-campus students is important, so they know how to be an active part of the campus community as their schedule and other commitments allow. Additional challenges are faced by off-campus students and they need support from those who understand the differences they face.

Freshman Commuters are first-time, full-time, degree-seeking students who live at home with a parent or guardian during their first year of college. Off-Campus Student Services reaches out to more than 500 freshman commuters each summer and fall to share campus and academic resources, to provide opportunities to meet other cohort members, and to share mentorship and connection opportunities.

Finding a place to live is a basic need for many students after their freshman year. To help meet the needs of those students looking for housing near campus, OCSS provides the official, searchable off-campus housing website: offcampushousing.uark.edu (https:// offcampushousing.uark.edu/). The website is free for student use, and properties on the site have an interest in student tenants. Off-Campus Living Fairs and educational resources are also offered on the site to prepare those who are planning to live on their own for the first time in our local community. Students can search for a roommate or someone to sublease when they plan to study abroad.

Off-Campus Meal Plans have proven important to student success. Meal plans of various prices have been designed to meet off-campus students' needs for eating while on campus for class, work, or other activities. Meal plans are available for purchase through a link provided on the OffCampus Student Services website (http://occ.uark.edu/). Around 4,000 meal plans are purchased each year are by off-campus students. Having a meal plan encourages students to eat regular meals so they can better focus on academics. Meal plans are charged to a student's account, so costs may be covered with scholarships, financial aid awards, or paid out with tuition payments.

A friendly and comfortable Commuter Lounge - with a refrigerator, microwave, television, study tables and office spaces - is located on the Sixth Floor West of the Arkansas Union. Timely tips and information about jobs, deadlines, campus, and community life are shared through
a weekly electronic newsletter published and emailed to off-campus undergraduates throughout the fall and spring semesters.

Off-Campus Student Services' desire is for each student living off-campus to feel an important part of the University of Arkansas, earn at least one degree, and have their name forever inscribed on the historic Senior Walk.

## Office of Student Standards and Conduct

It is the vision of the Office of Student Standards and Conduct to foster a campus community that values citizenship, personal and civic responsibility, peer accountability, and care/concern for the university and surrounding communities.

The mission of the Office of Student Standards and Conduct (OSSC) is to create a safe and inclusive community by upholding the Code of Student Life, which promotes responsibility, accountability, and student learning through;

- Educational opportunities and outreach.
- The adjudication of Code of Student Life violations.
- Providing a consistent, fair, equitable, educational, student conduct process.
- The development of ethics and adherence to personal values.
- Education on the norms and values of the University of Arkansas.

Students who are interested in involvement with the All-University Conduct Board should contact the Director of OSSC at judicial@uark.edu. The All-University Conduct Board comprises faculty, staff, and students and is responsible for the adjudication of cases of alleged student misconduct as outlined in the Code of Student Life. This board is an advanced leadership opportunity for students who would like to gain valuable experience working with faculty and staff on an impartial peer review board.

For more information regarding the Code of Student Life, please see the Student Handbook at handbook.uark.edu (http://handbook.uark.edu/). The Office of Student Standards and Conduct is located in Pomfret B 110, phone 479-575-5170; Web: ethics.uark.edu (http://ethics.uark.edu/).

## Veteran and Military-Affiliated Student Center

The University of Arkansas Veteran and Military-Affiliated Student Center contributes to the academic and professional success of current and prospective student veterans and their dependents by providing innovative resources and support; assisting with military educational benefits; and by serving as a central "Rally Point" for a seamless collaboration among various departments within the University of Arkansas, the U.S. Department of Veterans Affairs, and the diverse network of community partners supporting veterans.

Veterans and dependents of service members may be eligible to receive monthly educational assistance from the Veterans Administration while enrolled at the University of Arkansas. For more information, including eligibility for veterans educational benefits and scholarship opportunities, contact the Veteran and Military-Affiliated Student Center at vric@uark.edu or 479-575-8742. Students may also visit the center at the Garland Center Shops, suites 115 and 116 or online at veteranscenter.uark.edu (http://veteranscenter.uark.edu/).

## Student Media

The Office of Student Media administers and advises the official student media outlets of the university. These outlets are:

- The Arkansas Traveler, the student newspaper
- The Razorback, the University of Arkansas yearbook
- The Hill, the student magazine
- UATV, the student television station
- KXUA, the student radio station
- Main Hill Media, the student advertising agency

All provide a forum for student expression, entertainment, news and information of interest to the campus community. Other than a small professional support staff, these groups are entirely staffed by student employees and volunteers, including editors and station managers. For more information, visit the Student Media page (https:// studentmedia.uark.edu/) or contact Student Media at 479-575-3406.

## Division of Economic Development

## David Edward Snow

Executive Director
desnow@uark.edu
Division of Economic Development Website (https://economicdevelopment.uark.edu/)
The Division of Economic Development works to expand economic opportunity and prosperity in Arkansas through talent development, innovative research and technologies, community service, and place-making strategies. As the state's flagship university and a land-grant institution, the University of Arkansas is committed to engaging, collaborating and providing outreach to the residents, businesses, and governmental and civic entities of the state to make sustained advances in economic capacity and quality of place.

Affiliated units of the division include:

- Office of Entrepreneurship and Innovation
- Office of Industry Engagement
- Technology Ventures
- World Trade Center
- Arkansas Research and Technology Park
- Corporate and Foundation Relations
- Arkansas Small Business and Technology Center


## Division of Research and Innovation

John R. English
Vice Chancellor for Research and Innovation
479-575-5901
jre@uark.edu
Division of Research and Innovation Website (https://research.uark.edu/)
Research programs are the means by which the university contributes to the generation of knowledge as well as to the preservation and dissemination of it. With nationally recognized programs in many areas and funding from government, industry, and other private sources, the research effort of the university is strong and diversified and provides special learning opportunities for students as discoveries are made.

In addition to the extensive work performed by faculty through individual and team efforts in academic departments, special programs of research are conducted by the university divisions described below.

Graduate students are likely to be involved in research conducted by these research units, but the university encourages undergraduates as well to pursue research in their areas of academic interest. Students who wish to engage in research of any kind should seek the guidance of their advisers and professors to identify research teams and projects. In addition to the extensive work performed by faculty through individual and team efforts in academic departments, special programs of research are conducted by faculty members and staff in many associated university research centers. The university invites students to learn more about these centers and the research opportunities they offer by visiting the websites or by contacting the individuals listed below.

Units connected to the Division of Research and Innovation include:

- Office of Development for Research
- Office of Innovation and Industry Partnerships
- Office of Research Compliance
- Office of Scholarly Communications
- Office of Sponsored Research
- University of Arkansas Press


## Undergraduate Catalog

This catalog of studies is a comprehensive reference for your years of study - a list of degrees and courses offered at the University of Arkansas. In addition, it gives you valuable information such as suggested and required degree plans and information about costs, scholarships and financial assistance, and campus resources. Read it with pleasure and with care.

Take every opportunity to consult your academic adviser to ensure that you are taking advantage of courses and university resources that will help you reach your educational and career goals and graduate on time. If you are not sure where to find your academic adviser, contact the dean's office of your college; the phone numbers are listed under Contact Information (p. 6). If you are exploring majors and undecided yet, contact the advising office in the Fulbright College of Arts and Sciences at 479-575-3307.

Remember, the University of Arkansas is committed to your success. The faculty and staff are here to support you as you work to achieve your goals. Ask for help and advice whenever you need it.

The University of Arkansas is committed to the policy of providing educational opportunities to all qualified students regardless of their economic or social status and will not discriminate on the basis of race, color, sex, creed, sexual orientation, disability, veteran's status, age, marital or parental status, or national origin.

## Undergraduate Programs of Study

The academic units of the University of Arkansas include the following colleges, schools and military departments:

- The Dale Bumpers College of Agricultural, Food and Life Sciences (p. 124), which includes the School of Human Environmental Sciences (p. 202)
- The Fay Jones School of Architecture and Design (p. 238)
- The Fulbright College of Arts and Sciences (p. 273), which includes the School of Art (p. 300), the School of Journalism and Strategic Media (p. 466), and the School of Social Work (p. 567)
- The Sam M. Walton College of Business (p. 612)
- The College of Education and Health Professions (p. 698), which includes the Eleanor Mann School of Nursing (p. 750)
- The College of Engineering (p. 826)
- Graduate School (http://catalog.uark.edu/graduatecatalog/), which includes the Graduate School of Business (http://catalog.uark.edu/ graduatecatalog/business/)
- School of Law (http://catalog.uark.edu/lawcatalog/)
- Honors College (p. 92)
- Global Campus (http://globalcampus.uark.edu/)
- Departments of Army ROTC (p. 887) and Air Force ROTC (p. 887)

The Global Campus serves as a portal for online, distance and professional education programs and courses provided by the University of Arkansas. Experienced staff members collaborate with the university's academic colleges and schools and other academic units to develop and facilitate quality, cutting-edge courses and programs.

The School of Law and the Graduate School offer professional and graduate degrees. See the Graduate Catalog and the Law School Catalog for more information.

## Accreditations

The University of Arkansas, Fayetteville, is accredited by the Higher Learning Commission.

Some colleges and programs are also accredited by other agencies, associations, or professional organizations, including those listed below.

## Dale Bumpers College of Agricultural, Food and Life Sciences

The Bachelor of Science in Human Environmental Sciences (B.S.H.E.S.) degree program in human nutrition and dietetics is accredited by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics. The Jean Tyson Child Development Study Center is accredited by the National Association for the Education of Young Children (NAEYC).
The Bachelor of Science in Agricultural, Food and Life Sciences (B.S.A.) in food science is accredited by the Institute of Food Technologists. Teacher education programs in agriculture and birth through kindergarten are coordinated with educational programs in the College of Education and Health Professions and are accredited by the Council for the Accreditation of Educator Preparation (CAEP).

## Fay Jones School of Architecture and Design

The Bachelor of Architecture (B.Arch.) program is accredited by the National Architectural Accrediting Board (NAAB), and the Bachelor of Landscape Architecture (B.L.A.) program is accredited by the Landscape Architecture Accreditation Board of the American Society of Landscape Architects (LAAB). The Bachelor of Interior Design (B.I.D.) degree is accredited by the Council for Interior Design Accreditation (CIDA) and is also coordinated with design programs in Fulbright College of Arts and Sciences and accredited by the National Association of Schools of Art and Design.

## Fulbright College of Arts and Sciences

The Bachelor of Arts in Studio Art, the Bachelor of Arts (B.A.) in Art History, the Bachelor of Fine Arts (B.F.A.) in Studio Art, the Bachelor of Fine Arts (B.F.A.) in Graphic Design, the Bachelor of Fine Arts (B.F.A.) in Art Education, the Master of Art (M.A.) in Art Education, and the Master of Fine Arts (M.F.A.) in Art are accredited by the National Association of Schools of Art and Design. The Accrediting Council on Education in Journalism and Mass Communications has accredited the Bachelor of Arts (B.A.) degree program in journalism and the Bachelor of Arts (B.A.) degree in Advertising \& Public Relations. The Bachelor of Arts (B.A.), Bachelor of Music (B.M.), and Master of Music (M.M.) degree programs, along with the graduate certificates in Music Education for Special Needs Students and Advanced Performance in the Department of Music are accredited by the National Association of Schools of Music. The Doctor of Philosophy (Ph.D.) degree program in clinical psychology is accredited by the American Psychological Association. The Bachelor of Social Work (B.S.W.) and the Master of Social Work (M.S.W.) degree programs are accredited by the Council of Social Work Education. The Bachelor of Arts (B.A.) in Theatre and the Master of Fine Arts (M.F.A.) degree programs are accredited by the National Association of Schools of Theatre.

## Sam M. Walton College of Business

The Sam M. Walton College of Business offers degree programs for undergraduate students and for graduate students at both the master's and doctoral levels and has been a member of and accredited by AACSB International, the Association to Advance Collegiate Schools of Business, since 1931. The accounting program was separately accredited in 1986 at both the bachelor's and master's levels. The master's in business administration program was approved in 1963. Accreditation by AACSB and membership in that organization signifies the college's commitment to AACSB goals of promoting and achieving the highest standards of business education.

## College of Education and Health Professions

The teacher education programs in the College of Education and Health Professions are accredited by theCouncil for the Accreditation of Educator Preparation (CAEP). The Master of Science degree program in communication sciences and disorders is accredited by the American Speech-Language-Hearing Association (ASHA). The Bachelor of Science in Nursing (B.S.N.) degree program is accredited by the Commission on Collegiate Nursing Education (CCNE) and is approved by the Arkansas State Board of Nursing. The Master of Science in Nursing (M.S.N.) and the Doctor of Nursing Practice (D.N.P.), are also accredited by the Commission on Collegiate Nursing Education (CCNE), along with the graduate certificate in Nursing Education. The Bachelor of Science (B.S.) degree program in public health is accredited by the Council on Education for Public Health. The Master of Science degree in counseling and the doctor of philosophy in counselor education and supervision are accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP). The Master of Athletic Training (M.AT) is accredited by the Commission on Accreditation of Athletic Training Education (CAATE). The Doctor of Occupational Therapy (O.T.D.) has reached the candidacy status of accreditation with the Accreditation Council for Occupational Therapy Education (ACOTE).

## College of Engineering

The College of Engineering offers the following programs accredited by the Engineering Accreditation Commission of ABET (visit http:// www.abet.org for more information): Bachelor of Science in Biological Engineering (B.S.B.E.), Bachelor of Science in Biomedical Engineering (B.S.B.M.E.), Bachelor of Science in Chemical Engineering (B.S.Ch.E.), Bachelor of Science in Civil Engineering (B.S.C.E.), Bachelor of Science in Computer Engineering (B.S.Cmp.E.), Bachelor of Science in Electrical Engineering (B.S.E.E.), Bachelor of Science in Industrial Engineering (B.S.I.E.), and the Bachelor of Science in Mechanical Engineering (B.S.M.E.). The College of Engineering also offers a Bachelor of Science in Computer Science (B.S.C.S.) that is accredited by the Computing Accreditation Commission of ABET (visit http://www.abet.org for more information).

## School of Law

The degree programs in the School of Law on the Fayetteville campus are accredited by both the American Bar Association Section of Legal Education and Admissions to the Bar..

## Undergraduate Certificate Programs

Brewing Science (p. 187)
Child Advocacy Studies Training (p. 567)
Cybersecurity and Data Management (p. 663)
Diversity, Equity and Inclusion Management (p. 674)

Equine Management (p. 166)
Geospatial Technologies (p. 428)
Poultry Science (p. 200)
STEM Education (p. 822)
Following is a list of major programs of undergraduate study - grouped by college and school - offered at the University of Arkansas, followed by a list of minors and certificates offered by each college and school.

## Majors

## Dale Bumpers College of Agricultural, Food and Life Sciences

Agricultural Business (p. 131)
Agricultural Education, Communication and Technology (p. 144)
Animal Science (p. 158)
Crop Science (http://catalog.uark.edu/
undergraduatecatalog/collegesandschools/
dalebumperscollegeofagriculturalfoodandlifesciences/
cropmanagementcpmg/)
Environmental, Soil, and Water Science (http://
catalog.uark.edu/undergraduatecatalog/collegesandschools/
dalebumperscollegeofagriculturalfoodandlifesciences/
environmentalsoilandwaterscienceesws/)
Food Science (p. 180)
Horticulture, Landscape and Turf Sciences (p. 189)
Poultry Science (p. 195)

## School of Human Environmental Sciences

Apparel Merchandising and Product Development (p. 212)
Birth Through Kindergarten (p. 218)
Food, Nutrition and Health (p. 221)
Hospitality Management (p. 225)
Human Development and Family Sciences (p. 227)
Human Nutrition and Dietetics (p. 234)

## Fay Jones School of Architecture and Design

Architecture (p. 250)
Architectural Studies (p. 243)
Interior Architecture and Design (p. 258)
Landscape Architecture (p. 263)

## Fulbright College of Arts and Sciences

Advertising and Public Relations (p. 281)
Anthropology (p. 294)
Arabic (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/ worldlanguagesliteraturesandcultureswllc/\#bainarabictext)
Art (Studio Art) (p. 300)
Art History (p. 300)
Biology (p. 330)
Chemistry (p. 342)
Classical Studies (p. 355)
Communication (p. 357)
Criminology (p. 364)
Data Science (p. 95)
Earth Science (p. 393)
Economics (p. 399) (Bachelor of Arts)
English (p. 405)
French (p. 590)
Geography (p. 418)
Geology (p. 424)

German (p. 590)
Graphic Design (p. 300)
History (p. 436)
Interdisciplinary Studies (p. 455)
International and Global Studies (p. 457)
Italian (p. 590)
Journalism (http://catalog.uark.edu/
undergraduatecatalog/collegesandschools/
jwilliamfulbrightcollegeofartsandsciences/journalism-strategic-media/
\#combinationjournalismpoliticalsciencedegreetext)
Mathematics (p. 468)
Music (p. 485)
Philosophy (p. 525)
Physics (p. 529)
Political Science (p. 551)
Psychology (p. 561)
Social Work (p. 567)
Sociology (p. 575)
Spanish (p. 590)
Theatre (p. 581)

## Combined Majors

Combined majors specify a certain number of credit hours from each field of study to full degree requirements.

Asian Studies (p. 329)
Journalism/Political Science (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/journalism-strategic-media/ \#combinationjournalismpoliticalsciencedegreetext)

## Second (or dependent) Majors

A second (or dependent) major may be earned in a degree program when a student already is pursuing a first major that is authorized to be given independently.

African and African American Studies (p. 288)
Latin American and Latino Studies (p. 466)
Middle East Studies (p. 483)

## Sam M. Walton College of Business

Accounting (p. 689)
Business, General (p. 670)
Business, International (p. 620)
Data Science (p. 95)
Economics (p. 634)
Finance (p. 641)
Information Systems (p. 658)
Innovation and Entrepreneurship (p. 685)
Management (p. 670)
Marketing (p. 676)
Retail (p. 676)
Supply Chain Management (p. 667)

## College of Education and Health Professions

Career and Technical Education (p. 704)
Childhood Education (p. 711)
Communication Sciences and Disorders (p. 727)
Drama Education (p. 741)
Educational Studies (p. 745)
Elementary Education (p. 765)

English Education (p. 771)
Exercise Science (p. 777)
French Education (p. 780)
German Education (p. 786)
Human Resource Development (p. 792)
Nursing (p. 750)
Public Health (p. 795)
Recreation and Sport Management (p. 799)
Social Studies Education (p. 806)
Spanish Education (p. 812)
Special Education (p. 818)
Teaching K-12 Physical Education and Health (p. 822)

## College of Engineering

Biological Engineering (p. 834)
Biomedical Engineering (p. 839)
Chemical Engineering (p. 881)
Civil Engineering (p. 844)
Computer Engineering (p. 849)
Computer Science (p. 849)
Data Science (p. 95)
Electrical Engineering (p. 860)
Industrial Engineering (p. 867)
Mechanical Engineering (p. 874)

## Undeclared Major

Degree-seeking students who are undecided about their choice of a major field of study should enroll in the college or school that best reflects their current academic interest. Advisors in each academic unit can provide guidance to students who are undecided about their choice of a major field of study. Each college has its own rules concerning the point at which a student must declare a major.

Dale Bumpers College of Agriculture and Food Life Sciences (AFLS) - Undergraduate students are expected to officially declare a major prior to earning 30 college credit hours. Advisors in each academic unit can provide guidance regarding majors and career opportunities to students with undeclared status and transfer students who have not declared a major. An administrative advising hold, to be released after meeting with an academic advisor, will be placed on undeclared students' records each term until a major has been declared to encourage thoughtful consideration and selection of majors.

Faye Jones School of Architecture and Design (ARCH) Undergraduate students must elect one of the three academic departments upon acceptance into the School. Undeclared status is not an option.

Fulbright College of Arts and Sciences (ARSC) - Undergraduate students are expected to officially declare a major prior to earning 30 college credit hours. The Fulbright College Advising Center will provide enhanced advising services specific to exploratory students regarding major and career decisions. An administrative advising hold, to be released after meeting with an academic advisor, will be placed on undeclared students' records each term until a major has been declared to encourage thoughtful consideration and selection of majors.

College of Education and Health Professions (COEHP) -
Undergraduate students are admitted into pre-majors in selected fields, including Communication Disorders (PCDIS), Nursing (PNURS), Elementary Education (PELED), and Human Resource

Development (PHRWD). Students must apply to the majors associated with their pre-major in certain semesters, and should work with their advisors to determine the most appropriate time to make this application. Students are admitted directly to programs in Recreation and Sport Management, Educational Studies, Kinesiology, and Public Health. Students may also be admitted to the College as an undeclared student and should work with an academic advisor to declare a major or pre-major prior to earning 30 credit hours.

College of Engineering (ENGR) - All undergraduate engineering students are classified as pre-engineering students until they have successfully completed the two semester freshman engineering sequence and achieved a C or better in MATH 2554, Calculus 1.

Walton College of Business (WCOB) - Students pursuing a degree in Walton College are classified as pre-business until all core-business requirements are fulfilled.

## Minors

Each college and school of the University of Arkansas can determine whether to offer minors within their respective departments and whether to allow a student to pursue a minor in another college or school. Most, but not all, minors are offered in fields in which a major is also offered. Students should check with academic advisers in their college or school to determine the eligibility and requirements of a minor. They are listed below.

## Interdisciplinary

Nanotechnology (p. 122) (administered by the Provost's Office)
Sustainability (p. 272) (administered by the Fay Jones School of
Architecture and Design)
Urban and Regional Planning (p. 123) (administered by the departments of Landscape Architecture and Political Science)

## Dale Bumpers College of Agricultural, Food and Life Sciences

Agricultural Business (p. 131)
Agricultural Communications (p. 144)
Agricultural Education (p. 144)
Agricultural Leadership (p. 154)
Agricultural Systems Technology Management (p. 144)
Animal Science (p. 158)
Child Services (http://catalog.uark.edu/
undergraduatecatalog/collegesandschools/
dalebumperscollegeofagriculturalfoodandlifesciences/childservices/)
Crop Biotechnology (http://catalog.uark.edu/
undergraduatecatalog/collegesandschools/
dalebumperscollegeofagriculturalfoodandlifesciences/
cropmanagementcpmg/)
Crop Science (http://catalog.uark.edu/
undergraduatecatalog/collegesandschools/
dalebumperscollegeofagriculturalfoodandlifesciences/
cropmanagementcpmg/)
Entomology (p. 178)
Equine Science (p. 158)
Event Management (p. 225)
Food Science (p. 180)
Horticulture (p. 189)
Hospitality Management (p. 225)
Human Development and Family Sciences (p. 227)
Human Nutrition (p. 221)

International Economic Development (p. 142)
Landscape Horticulture (p. 189)
Natural Resources Management (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/ environmentalsoilandwaterscienceesws/ \#naturalresourcesmanagementtext)
Pest Management (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/ pestmanagementpmgt/)
Plant Pathology (p. 178)
Poultry Science (p. 195)
Soil Science (http://catalog.uark.edu/
undergraduatecatalog/collegesandschools/
dalebumperscollegeofagriculturalfoodandlifesciences/ environmentalsoilandwaterscienceesws/\#soilsciencetext) Turf Management (p. 189)
Minors offered by any other UA college or school

## Fay Jones School of Architecture and Design

History of Architecture and Design (p. 250) Design With Plants (p. 267) (for Architecture majors) Interior Architecture and Design (p. 261) (available only to students in the School of Architecture and Design) Planting Design (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/fayjonesschoolofarchitecture/ landscapearchitecturalstudies/) (for Horticulture majors) Sustainability (p. 272) (for all university majors) Sustainable Landscape Design and Management (p. 268) (for students in the Fay Jones School) Urban and Regional Planning (p. 267)
Minors offered by any other UA college or school

## Fulbright College of Arts and Sciences

African and African American Studies (p. 288)
Anthropology (p. 294)
Arabic (p. 590)
Art History (p. 300)
Asian Studies (p. 329)
Biology (p. 330)
Chemistry (p. 342)
Child Advocacy Studies Training (p. 567)
Chinese (p. 590) with Business Orientation
Classical Studies (p. 355)
Communication (p. 357)
Criminal Justice (p. 364)
East Asian History and Politics (p. 330)
Economics (p. 399), Fulbright College
English (p. 405)
French (p. 590) (also with Business Orientation)
Gender Studies (p. 417)
Geography (p. 418)
Geology (p. 424)
German (p. 590)
Global Studies (p. 463)
History (p. 436)
Indigenous Studies (p. 455)
Italian (p. 600)
Japanese (p. 590) with Business Orientation
Jewish Studies (p. 465)

Journalism (http://catalog.uark.edu/
undergraduatecatalog/collegesandschools/
jwilliamfulbrightcollegeofartsandsciences/journalism-strategic-media/
\#combinationjournalismpoliticalsciencedegreetext)
Latin American and Latino Studies (p. 466)
Legal Studies (p. 551)
Mathematics (p. 468)
Medical Humanities (p. 481)
Medieval and Renaissance Studies (p. 482)
Middle East Studies (p. 483)
Music (p. 485)
Philosophy (p. 525)
Physics (p. 529)
Political Science (p. 551)
Psychology (p. 561)
Religious Studies (p. 566)
Rhetoric and Writing Studies (p. 567) for students not majoring in English
Russian Studies (p. 600)
Social Work (p. 567)
Sociology (p. 575)
Southern Studies (p. 579)
Spanish (p. 590) (also with Business Orientation)
Statistics (p. 468)
Substance Abuse Disorders (p. 572)
Theatre (p. 581)

## Sam M. Walton College of Business

Accounting (p. 689)
Banking/Financial Management/Investment (p. 641) (available only to students in the Sam M. Walton College of Business) Behavioral Economics (p. 634)
Blockchain Enterprise Systems (p. 634)
Business Analytics (p. 658)
Business Economics (p. 634)
Business minors (p. 695) for non-business students
Data and Cybersecurity Management (p. 663) (available only to students in the Sam M. Walton College of Business)
Data and Cybersecurity Management (p. 695) for non-business students
Enterprise Resource Planning (p. 693)
Finance (p. 641)
Financial Economics (p. 693) (available only to students in the
Sam M. Walton College of Business)
Information Systems (p. 658)
Innovation and Entrepreneurship (p. 687) (available only to students in the Sam M. Walton College of Business)
Innovation and Entrepreneurship (p. 695) (for non-business majors)
Insurance/Real Estate (p. 641) (available only to students in the
Sam M. Walton College of Business)
International Business (p. 620)
Leadership (p. 695) for non-business students
Management (p. 670)
Marketing (p. 676)
Nonprofit Studies (p. 693)
Retail (p. 676)
Supply Chain Management (p. 667)
Minors offered by the J. William Fulbright College of Arts and Sciences

## College of Education and Health Professions

Educational Studies (p. 748)
Human Resource and Workforce Development (p. 794)
Outdoor Leadership (p. 803)
STEM Education (p. 822)
Minors offered by any other UA college or school

## College of Engineering

Computer Science (p. 857)
Data Analytics (p. 860)
Minors offered by any other UA college or school

## Certificate Programs

## Dale Bumpers College of Agricultural, Food

 and Life SciencesBrewing Science (p. 187)
Equine Management (p. 166)
Poultry Science (https://uark-preview.courseleaf.com/ undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/ poultryscienceposc/)

## Fulbright College of Arts and Sciences

Child Advocacy Studies Training (p. 567)
Geospatial Technologies (p. 428)

## Sam M. Walton College of Business

Cybersecurity and Data Management (p. 663)
Diversity, Equity and Inclusion Management (p. 674)

## College of Education and Health Professions

STEM Education (p. 822)
Bachelor of Arts/Juris Doctor (http://catalog.uark.edu/lawcatalog/ jdadmissionandcourses/) (3/3 Program)
Bachelor of Arts/Master of Arts (http://catalog.uark.edu/graduatecatalog/ programsofstudy/journalismwalterjlemkedepartmentofjour/) in Journalism (five-year program)
Bachelor of Science/Juris Doctor (http://catalog.uark.edu/lawcatalog/ jdadmissionandcourses/) (3/3 Program)
Bachelor of Science/Medical Doctor (p. 276)
Bachelor of Science/Doctor of DS (p. 276)
Bachelor of Science in Education/Master of Arts in Teaching
Juris Doctor/Master of Arts (http://catalog.uark.edu/lawcatalog/
jdadmissionandcourses/) in Political Science
Juris Doctor/Master of Business Administration (http://catalog.uark.edu/ lawcatalog/jdadmissionandcourses/)
Juris Doctor/Master of Public Administration (http://catalog.uark.edu/ lawcatalog/jdadmissionandcourses/)
Juris Doctor/Master of Public Service (in conjunction with the Clinton School of Public Service)
Juris Doctor/Master of Social Work (http://catalog.uark.edu/lawcatalog/ jdadmissionandcourses/)
Master of Laws/Master of Science (http://catalog.uark.edu/lawcatalog/
Ilminagriculturalandfoodlaw/) in Agricultural Economics

- Honors Studies
- Reserve Officers' Training Corps
- Cooperative Education
- Study Abroad
- Graduate, Law, Pre-Law and other Pre-Professional Programs


## Honors Studies

Interested students should write to the Director of Honors Program in the appropriate college.

The honors program in the Dale Bumpers College of Agricultural, Food and Life Sciences provides students with opportunities for intellectual enrichment beyond the traditional undergraduate experience. This is accomplished through honors courses, completion of an undergraduate capstone honors project or thesis, and other significant activities including interactions with students in honors programs in other colleges. The results of the student's original research or creative project may be published in Discovery, the undergraduate research journal of the Bumpers College, or Inquiry, the university-wide journal of undergraduate research and creative activity. In support of these efforts, participants in the Honors Program are eligible to receive an honors stipend in support of their research projects. The transcript and diploma of each honors graduate will designate the student as an honors graduate of the college. At the college commencement ceremony, each honors graduate will wear special regalia and have the title of their honors thesis and their mentors' names listed in the graduation program. Students must maintain a cumulative grade-point average of 3.50 and subscribe to the Statement of Ethical Standards to remain in the program. For additional information, see the Bumpers College (p. 124) section of this catalog

The Fay Jones School of Architecture and Design provides opportunities for students of superior academic and creative ability to enhance and enrich their professional and liberal education by participating in the School's honors programs. For additional information, please see the Fay Jones School of Architecture and Design (p.238) section of this catalog.

To create an intellectual environment that will challenge the best of students, the Fulbright College of Arts and Sciences provides a comprehensive program of honor studies. From the first year to the senior year, an honors student is provided the opportunity to study with other superior students in small distinctive classes taught by highly motivated and skilled faculty members. There are also opportunities for independent study so that students learn to work on their own and to develop their abilities and interests in ways that are not normally possible in regular college course work. Students participating in a program of honors studies also receive special academic counseling to satisfy their future career objectives. Students are offered every opportunity to achieve a high level of intellectual maturity and accomplishment. For additional information, see the Fulbright College (p. 273) section of this catalog.

The honors program in the Sam M. Walton College of Business is offered to high-achieving students interested in obtaining an outstanding business education at the University of Arkansas. Students who participate in the program will take honors classes in the University Core and pre-business curriculum as well as honors colloquia in the Walton College offered exclusively to honors students. The subject matter of these colloquia varies from year to year and focuses on current business issues. Honors students complete a thesis in the senior year. Students in the honors program are entitled to register on the first day of registration week, have exclusive access to an honors computer lab and study area, and will be given priority consideration in such programs as the Arkansas Cooperative Education Program. For further information, see the Walton College (p. 612) section of this catalog.

The honors program in the College of Education and Health Professions enables undergraduate students who have demonstrated potential
for outstanding scholarship achievement an opportunity to broaden and deepen their liberal and professional education. Honors students participate in honors seminars, leadership skills development and a required undergraduate thesis/project. Students are provided opportunities to enhance their learning experience through critical thinking, leadership skills development and independent study. For additional information, see the College of Education and Health Professions (p. 698) section of this catalog.

The College of Engineering has established an honors program to challenge superior students with a more in-depth academic program and research experience and to provide a structure for working more closely with faculty members and other students in a team environment. An honors program is highly recommended for individuals planning academic or research-related careers that require considerable critical and original independent thinking. Students must formally apply for admission to the Engineering Honors Program. Once accepted into the program, honors students take a minimum of 12 hours of honors courses (a minimum of 6 of these 12 hours must be in engineering), participate in undergraduate research and write an undergraduate thesis, and must fulfill any additional departmental requirements. To graduate with honors, a student must hold a cumulative GPA of 3.50 or better for all course work, computed at graduation. For more information, see the College of Engineering (p. 826) chapter of this catalog.

## Campuswide Academic Honor Societies

For other academic honor societies, see the various school and college sections of this catalog.

Golden Key is an academic honor society open to selected juniors and seniors who have a minimum grade-point average of 3.50 .

Order of Omega honor society is exclusive to members of the Greek community on the university campus. Selection of members is based upon leadership in the inter-Greek activities, academic honors, and contributions to the University community. A 2.50 GPA is necessary for membership consideration.

Phi Eta Sigma is an academic honor society for freshman students. Membership is selected in the spring each year, and the only requirement is a minimum GPA of 3.50 or better for the first semester of the freshman year.

Phi Kappa Phi is a national honor society whose primary objective is the recognition and encouragement of superior scholarship in all academic disciplines. Junior and senior undergraduate students who have a minimum GPA of 3.85 are eligible for membership. Also eligible are graduate students, registered for one year, who have a minimum GPA of 3.85 .

Tau Alpha Upsilon is an honor society that honors outstanding students who live in the University of Arkansas Residence Hall system.

Who's Who, a general honor society, honors students who have excelled in scholarship, leadership and campus activities throughout their college careers. Membership requirements are a minimum cumulative GPA of 2.00 , completion of 85 credit hours, and at least two full semesters attendance at the University of Arkansas, Fayetteville, prior to application.

## Campuswide Leadership Honor Societies

Blue Key is a service-oriented honor fraternity that recognizes
outstanding scholarship, leadership and involvement in campus activities.

Applicants must be classified as juniors and meet a minimum GPA of 2.75 for membership consideration.

Cardinal Key is a junior service-oriented honor society whose membership selection is based on scholarship, leadership, and community and campus activities. A 3.00 GPA requirement must be met in order to be considered for membership at the end of the sophomore year.

Cardinal XXX is a service-oriented honor society whose membership consists of a select group of sophomores. Membership selection is based on scholarship, leadership, and community and campus service. A 3.00 GPA is required for consideration, and selection is made at the end of the freshman year.

Gamma Beta Phi is a service-oriented honor society established to recognize and encourage excellence in education. Membership in the organization is open to students who are in the top 20 percent of their class.

Mortar Board is a senior honor society that considers outstanding scholarship, leadership, and service to the campus and community when selecting members. Applicants must have a 3.00 GPA in order to be eligible for consideration.

## Reserve Officers' Training Corps

A true job training program, ROTC is offered at the University of Arkansas through both the U.S. Air Force and the U.S. Army. Each department provides a unique, career-oriented set of courses relevant to future leadership positions within its particular branch. In addition to studying Aerospace Education or Military Science, students interact with one another in a practical setting as they examine and apply the dynamics of leadership, management, ethics, communication, and teamwork. Participants are given the background and comprehensive building blocks to become commissioned officers in the U.S. military, if qualified. Physical activities and summer orientation programs are enhanced with continually updated curricula. Classes are taught by military personnel, ensuring realistic perspectives on the military professions.

In the finest traditions of the University of Arkansas and the ROTC programs, students are challenged to grow, develop and assume responsibilities throughout their academic years. Underlying that teaching is a foundation of service, integrity and excellence - expected and demanded of all officer candidates. Scholarships and details of the two programs are found in the ROTC chapter of this catalog. Army ROTC is located in the Army ROTC building, 479-575-4251 or toll free 1-866-891-5538, armyrotc.uark.edu (http://armyrotc.uark.edu/). Air Force ROTC is located in 319 Memorial Hall, 479-575-3651, afrotc.uark.edu (http://afrotc.uark.edu/).

## Cooperative Education Program

Cooperative Education is a unique program offered by the Office of Career Services that allows students to alternate between going to school and working in their chosen vocation. In addition, the program allows employers the opportunity to train and evaluate future employees before offering them positions.

Employment assignments are diversified to provide students with a variety of experiences related to their major field and with work of increasing difficulty and responsibility. Although the primary objective is to supplement theoretical knowledge with practical experience, students
earn full-time pay while on work assignments. This benefit produces welcome income while the students are still pursuing a degree.

Positions are available to students in many disciplines, primarily engineering, architecture, landscape architecture, business, agriculture, natural science and mathematics. Co-op students must be in good academic standing, must be at least 18 years of age, must be making normal progress toward a degree, and must meet the specific requirements of their college. (For example: the College of Engineering and Dale Bumpers College of Agricultural, Food and Life Sciences require completion of the freshman year; Fulbright College of Arts and Sciences requires 45 credit hours and a 2.5 grade-point average; the Walton College of Business requires completion of pre-business program requirements; and the Fay Jones School of Architecture requires completion of the junior year.) In addition, employers may establish their own academic criteria for selecting students.

For further information, contact the Career Development Center, 607 Arkansas Union, 479-575-2805.

## Study Abroad

The university encourages the expansion of students' educational experiences through study abroad. Student exchange programs have been established with Kansai University and Shimane University (Japan), Hankuk University (Korea), Al-Akhawayn University (Morocco), University of Graz (Austria), University of Essex (England), University of Maine (France), and Carlos III University of Madrid (Spain). Other UA study abroad programs include summer/semester/year-long programs in Austria, England, Scotland, Ireland, France, Germany, Italy, Mexico, and Spain. A limited number of scholarships and travel grants are available each year for these programs.

For more information about study, work, and travel abroad, contact the Office of Study Abroad, 722 W. Maple, 479-575-7582. Students in the Dale Bumpers College of Agricultural, Food and Life Sciences may contact Dr. Andrew Proctor, Director of International Agricultural Programs, Bumpers College Dean's Office, E-108 AFLS Building, 479-575-2252, aproctor@uark.edu. Students in the Walton College of Business may contact the Undergraduate Programs Office at 479-575-4622. Students in the College of Engineering may contact the Assistant Dean for International Programs at 479-575-7236.

## Graduate and Professional Study

The University of Arkansas is the major center for comprehensive graduate-level instruction in the state, offering students the opportunity to continue their studies or to specialize in a particular field through the Graduate School. The university offers a wide range of graduate degrees, including the master's, the Educational Specialist, the Doctor of Education, and the Doctor of Philosophy. Non-degree graduate certificates are also offered. Information about graduate programs may be found in the Graduate School Catalog or at grad.uark.edu (http:// grad.uark.edu/).

The School of Law on the Fayetteville campus offers a juris doctor degree program for qualified students with a bachelor's degree, and it offers the nation's only master's program in agricultural law for students with a law degree. Further information concerning professional study may be obtained by contacting the School of Law dean's office for a copy of the current catalog: University of Arkansas School of Law, Leflar Law Center, 107 Waterman Hall, Fayetteville, AR 72701, 479-575-3102 or at law.uark.edu (http://law.uark.edu/).

## Pre-Law

The University of Arkansas School of Law does not prescribe a specific pre-law curriculum and does not require any single "pre-law major." Prospective students are encouraged to select baccalaureate majors best suited to individual interests and abilities, and writing courses are often very valuable.

A baccalaureate degree is required for admission to the University of Arkansas School of Law, except for those students in the Dale Bumpers College of Agricultural, Food and Life Sciences or the Fulbright College of Arts and Sciences who are admitted to the special six-year program. All applicants for admission are required to take the Law School Admission Test.

## Other Pre-Professional Programs

Fulbright College offers pre-professional programs and advisers in law, medicine, dentistry, optometry, chiropractic, physical therapy, pharmacy, physician assistant, and occupational therapy. The Dale Bumpers College of Agricultural, Food and Life Sciences coordinates the preveterinary medicine program.

## The Academic Common Market

The Academic Common Market is an interstate agreement among Southern states for sharing uncommon academic programs. Participating states are able to make arrangements for their residents who qualify for admission to enroll as in-state students for fee purposes.

The Common Market concept recognizes that it is impractical for every state to attempt development of programs in every field of knowledge. Each Southern state has programs which are not offered in some of the other states and which can accommodate additional students. Through the sharing of such programs, the market assists in eliminating unnecessary duplication and in increasing access to programs which meet the educational needs of the citizens of the South.

To enroll as an Academic Common Market student, you must:

1. Be accepted for admission into a program to which your state has obtained access for its residents through the Academic Common Market. Applications for admission should be made directly to the institution offering the program.
2. Obtain certification of residency from the Common Market coordinator for certification information.

The opportunities presently available at the University of Arkansas, Fayetteville, at in-state rates to residents of Southern states through the Academic Common Market are listed in the column to the right.

## Academic Common Market Programs at the University of Arkansas

| Program | Bachelor's | Master's | Ph.D | Ed.D. |
| :---: | :---: | :---: | :---: | :---: |
| Anthropology |  | WV |  |  |
| Architecture | KY |  |  |  |
| Athletic Training |  | KY |  |  |
| Athletic Training |  | LA |  |  |
| Kinesiology |  | LA | OK |  |
| Kinesiology |  | GA |  |  |
| Kinesiology |  | OK |  |  |


| Landscape DE |  |
| :--- | :--- |
| Architecture |  |
| Microelectronics- | OK |
| Photonics |  |
| Microelectronic | OK |
| Photonics | AL |
| Philosophy | MS |
| Philosophy | OK |

## Professional Licensure Disclosure Policy

In compliance with federal regulation 34 CFR 668.43 (a) (5) (v) and 34 CFR 668.43 (c), the University will disclose to a student whether the student's declared degree or certificate program leads to the ability to obtain a professional license in the state of the student's self-reported location. Disclosure will occur prior to the student making a financial commitment to the institution. To facilitate this timeline, notification will be made following the student's initial enrollment in courses in a term to which the student has been admitted or readmitted to the university.

Once enrolled in a program, if the institution makes a later determination that the program does not meet educational requirements for licensure or certification in the state where the student is located, the University of Arkansas will provide notice directly to the student within 14 calendar days of making that determination.

General disclosures on professional licensure status in each state will be maintained on the University of Arkansas website.

For the purpose of this policy, the following definitions apply:
Location means the state in which the student reports they will be physically located while completing the student's program of study, also known as the reported "local" or "campus" address. Location will be designated in the first term of enrollment in coursework and will be updated upon receipt and processing of any formal notification by the student to the university of a change in location.

Financial commitment to the institution means the payment of or agreement to pay registration related tuition, fees, and charges.

## Enrollment Services

## Mission

Enrollment Services seeks to enroll a diverse group of capable students, who will engage and excel at the University of Arkansas, and to assist these students in achieving their academic and career goals.

The mission of the Enrollment Services Division of the University of Arkansas is to enroll and graduate students who will engage fully in academic and service programs, develop intellectually and personally, and contribute to the campus, the state, and the global community. Encouraging academic engagement from a diverse group of communities will create a dynamic educational environment that will promote a broad learning experience for the entire campus community. To carry out this mission, the Enrollment Services Division is comprised of nine professional and service-oriented offices: Admissions, Center for Learning and Student Success, Financial Aid, Graduation and Retention, Nationally Competitive Awards, Orientation, Registrar, Scholarships, and UAConnect. Through collaborative efforts, Enrollment Services strives to:

- Promote the University of Arkansas and the pursuit of higher education;
- Foster initiatives that support diversity as a key goal of the University of Arkansas community;
- Attract, admit, and prepare new and returning students for enrollment on campus while working with academic affairs to ensure planned and sustainable growth in accordance with institutional priorities;
- Accurately and efficiently reduce financial obstacles through federal, state, institutional scholarship and aid programs;
- Commit to preparing traditional and non-traditional students, including returning adult learners, for academic achievement and success in life;
- Assist future, current, and former students as they navigate administrative requirements to achieve their academic goals;
- Ensure accuracy for registration and academic records;
- Commit to retaining students who enroll at the University of Arkansas and assisting them through academic transitions on their path to graduation;
- Prepare students to be nationally competitive;
- Craft and maintain policy that facilitates effective administration to support Division goals, including coherence of policy across all divisions;
- Develop innovations in the use of technology and information systems aimed at supporting a research engine for best practices in enrollment services and data-based decision making;
- Increase state and global knowledge by achieving a net increase in Arkansas residents holding bachelor's, master's, and doctoral degrees;
- Support the university's pursuit to become a nationally recognized research institution that puts students first.


## Office of Enrollment Services

232 Silas Hunt Hall
479-575-3771

## Vice Provost for Enrollment and Dean of Admissions

Suzanne McCray
232 Silas Hunt Hall
479-575-3771

## Admissions

232 Silas Hunt Hall
479-575-5346
admissions.uark.edu (http://admissions.uark.edu) uofa@uark.edu

## Academic Scholarships

114 Silas Hunt Hall
479-575-4464
scholarships.uark.edu (http://scholarships.uark.edu)
scholars@uark.edu
Center for Learning and Student Success
040B Gregson Hall
479-575-2885
class.uark.edu (http://class.uark.edu)

## Financial Aid

114 Silas Hunt Hall
479-575-3806
finaid.uark.edu (http://finaid.uark.edu)
finaid@uark.edu

## Graduation and Retention

232 Silas Hunt Hall
479-575-5343
class.uark.edu (http://class.uark.edu)

## Nationally Competitive Awards

232 Silas Hunt Hall
479-575-3771
awards.uark.edu (http://awards.uark.edu)
awards@uark.edu

## New Student Orientation

232 Silas Hunt Hall
479-575-4200
orientation.uark.edu (http://orientation.uark.edu) nso@uark.edu

## Registrar

Main Office: 141 Uptown East
Campus Office: 146 Silas Hunt Hall
479-575-5451
registrar.uark.edu (http://registrar.uark.edu)
registra@uark.edu (regrweb@uark.edu)

## UAConnect

220 Uptown East
479-575-2468
uaconnect.uark.edu (http://uaconnect.uark.edu)
uachelp@uark.edu

## Orientation

All new undergraduate students are expected to participate in an orientation experience. The orientation program is designed to introduce every aspect of the university community to our students, enabling them to establish a bond with the institution and those here to support them. A significant aspect of this experience will be to provide students with information about the learning opportunities, resources, policies, support systems, and student activities at the University. New freshmen must attend orientation before enrolling in classes. For more information on New Student Orientation, go to orientation.uark.edu (http:// orientation.uark.edu/).

## Academic Bankruptcy

Students returning to the University of Arkansas after an absence of five or more years may be eligible to declare academic bankruptcy if they meet the following criteria:

1. Must have been enrolled previously at the University of Arkansas, Fayetteville, as an undergraduate student and be returning as an undergraduate student.
2. Must not have been enrolled at the university during the previous five years.
3. Students who have attended another institution since their last attendance at the university must meet requirements for transfer
students (2.00 GPA on all coursework attempted more than five years after last enrollment at the University of Arkansas, Fayetteville) to be eligible for readmission.
4. Must submit an application for readmission and official transcripts of all college work attempted since last attendance at the University of Arkansas by the application deadlines and submit a Declaration of Academic Bankruptcy form (http://registrar.uark.edu/1621.php) to the Office of the Registrar. The following are the conditions of academic bankruptcy:
a. Students will forfeit all credit hours previously awarded by the University of Arkansas, Fayetteville. This includes course work completed at the university (regardless of grades earned), courses accepted in transfer, credit by examination, and any selfpaced (correspondence) course work awarded.
b. A new calculation of GPA and credit hours will begin when the student returns to the University of Arkansas.
c. The transcript will reflect the student's complete record (including all previous college work) with an added notation of "Academic Bankruptcy Declared."
d. Courses taken at another institution within five years of the last University of Arkansas enrollment will not be accepted for transfer. Coursework completed more than five years after last attending the University of Arkansas may be accepted in transfer, subject to university transfer credit policies. For purposes of this policy, University of Arkansas self-paced (correspondence) coursework will be treated in the same manner as transfer work.
e. For the university to provide appropriate advising and (as required by Arkansas Act 1052) appropriate assessment, a student may be required to submit ACT, SAT, or ACT COMPASS test scores prior to registration for classes if, as a result of academic bankruptcy, that student is returning to the university as a freshman with fewer than 24 transfer hours.

## Admission

## Undergraduate Admission

Any person who intends to register for a course at the University of Arkansas must first be admitted to the university. Students returning to the university after an absence of a fall or spring semester must also complete an application.

The University of Arkansas offers a variety of services to students with physical or learning disabilities through the Center for Educational Access. Students with any type of physical or learning disability are strongly encouraged to contact the CEA in Room 209 of the Arkansas Union or call 479-575-3104 (TDD/Voice) to learn more about specific services and the overall accessibility of the university.

The university reserves the right to modify admission requirements. Application forms and the most current information about admission requirements are available from the Office of Admissions. Please send all application materials and supporting documents to the following address:

## Office of Admissions

232 Silas H. Hunt Hall
1 University of Arkansas
Fayetteville, AR 72701
479-575-5346 or 1-800-377-8632
admissions.arkansas.edu (http://admissions.uark.edu) uofa@uark.edu

## When to Apply

Students interested in applying to the University of Arkansas for the fall semester are encouraged to apply by the November 1 priority deadline. By applying early, students take advantage of scholarship, housing, and orientation privileges; however, regular fall applications will be accepted until August 1 prior to the start of term. Applicants for freshman scholarships are encouraged to apply for admissions by November 1 and complete the separate scholarship application by the priority scholarship deadline, November 15. Applicants for entering transfer scholarships should submit completed applications to the Office of Admissions and the Office of Academic Scholarships no later than April 1, for the fall semester, and October 1, for the spring semester.

## Deadlines for Admission Consideration

Applications and required transcripts must be received in the Office of Admissions by the following deadlines to be accepted for the respective enrollment periods:

- Fall - August 1
- Spring - December 20

Students who are unable to submit their applications by the deadline may be denied admission and considered for admission for the following term.

International students should refer to "International Students" in this section for application deadlines, procedures, and requirements.

## Graduate School

Applications for admission to the University of Arkansas Graduate School and an official copy of transcripts of the applicant's academic record at each college and university attended since high school graduation, and official test score on the Graduate Record Examination (GRE) or other national standard test, must be submitted to the graduate school admissions office and approved in advance of registration. The transcripts will become a part of the student's permanent file at the University. Applications may be obtained by writing to the Graduate and International Admissions Office, 213 Gearhart Hall, 1 University of Arkansas, Fayetteville, AR 72701; by calling 479-575-6246; by emailing gradinfo@uark.edu; or by applying at apply.uark.edu (http:// apply.uark.edu).

Additional information and procedures for making application to the Graduate School are included in the Graduate School Catalog (http:// catalog.uark.edu/graduatecatalog/admissions/).

## Admission to Graduate Standing

To be admitted to graduate standing, a student must have 1) earned a baccalaureate degree from a regionally accredited U.S. institution or from an institution with substantially equivalent requirements for a baccalaureate degree and must have a GPA of 3.0 or better on the last 60.0 credit hours of attempted coursework prior to receiving the baccalaureate degree and 2) present satisfactory scores on the Graduate Record Examination (GRE) or other national standard test.

Admission to graduate standing does not admit a student to a specific program of study leading to a graduate degree. Therefore, in addition to satisfying the general requirements of the Graduate School, the applicant must also comply with the specific requirements and have the approval of the department in which graduate study is desired.

For more details, go to the Graduate School Catalog (http:// catalog.uark.edu/graduatecatalog/admissions/).

## How to Apply

1. Submit a completed application for undergraduate admission and the non-refundable application fee to the Office of
Admissions. You may apply for admission online at apply.uark.edu (http://apply.uark.edu).
2. Request that all required transcripts be sent to the Office of Admissions. Only official transcripts will be accepted. Transcripts are not considered official unless submitted in a sealed, stamped envelope, or sent via electronic data interchange from the previous institution. Questionable or unreadable transcripts may be refused. High school transcripts are required of all entering freshmen and transfer students with fewer than 24 transferable semester hours. A preliminary admission will be provided to high school seniors on the basis of sixth- or seventh-semester transcripts.
College transcripts must be provided from each college or university attended. Transcripts must be sent directly to the Office of Admissions from each institution attended, in an official sealed school envelope, or sent via electronic data interchange.
3. All new freshmen and transfer students with fewer than 24 transferable credit hours must submit ACT or SAT scores. Non-traditional students applying three or more years after high school graduation have the option of submitting the ACT COMPASS or The College Board Accuplacer to satisfy testing requirements. The University of Arkansas will not accept test scores taken more than five years prior to enrollment. Test scores should be sent directly to the university by the testing agency. The university's institutional codes are: ACT-0144; SAT-6866.
4. All students born after January 1, 1957, must submit immunization health records to the Pat Walker Health Center after admission. Immunization proof is required prior to first registration. See the Health Center's immunization page (http:// health.uark.edu/immunizations/).
5. English Proficiency: Applicants whose native language is not English must submit a Test of English as a Foreign Language (TOEFL) score of at least 550 (paper based), 79 (internet based), or a minimum score of 6.5 on the IELTS (writing) taken within the preceding two years. Students who have completed grades 10-12 at a U.S. accredited high school and have a satisfactory ACT English subscore may request a review for waiver of this requirement. Students transferring from an accredited U.S. institution (or institution in a country where English is the native language) with at least 24 transferable credit hours and successful completion of English Composition I and II with a grade of "C" or above will not be required to submit the TOEFL or IELTS for admission consideration. For more information about the TOEFL, you may write to TOEFL Services, ETS, PO Box 899, Princeton, New Jersey 08541, or visit ets.org/toefl (http://www.ets.org/toefl/).
6. The university shall admit only those applicants whose enrollment will not be detrimental to the quality of life and the educational programs of the university. The Admissions and Appellate Board has final authority to interpret university admission or transfer policy and to grant a variance. An applicant who has withheld pertinent information regarding educational background or who has falsified information or credentials may be denied admission to the university or, if enrolled, may be immediately withdrawn.

## International Students

All degree-seeking international undergraduate students must present officially certified academic credentials, evidence of adequate financial support, and, for those applicants whose first language is not English, evidence of meeting the university's English Language Proficiency requirement. This requirement may be satisfied by:

1. Presenting a valid minimum score of of 550 on the Institutional Test of English as a Foreign Language (TOEFL), a 79 on the Internet based Test of English as a Foreign Language (TOEFL), a minimum score of 6.5 on the International English Language Testing System Academic (IELTS), a 58 on the Pearson Test of English (PTEAcademic), a 3.9 on the International Test of English ProficiencyAcademic (iTEP), or a 176 on the Cambridge Assessment English C1 Advanced (C1 Advanced), an ACT English subscore of 19, or an SAT Evidence Based Reading and Writing subscore of 500 at the time of application.
2. Demonstrating completion of grades 10-12 at a U.S. accredited high school.
3. Presenting with at least 24 transferable credit hours from an accredited U.S. institution (or institution in a country where English is the native language) and completion of English Composition I and II with a grade of "C" or above.
4. Receiving a wavier on a case by case basis from the Director of International Admissions by providing evidence of alternate English language competency including but not limited to Duolingo (DET) exam scores, prior successful coursework at a high school, college, or university in an English speaking country, or successful participation in West African Senior Examination Certificate (WASSCE) programs, International General Certificate of Secondary Education (IGSCE) programs, or International Baccalaureate (IB).

Degree-seeking applicants who meet the academic and financial requirements but who do not meet the English proficiency requirement of the University of Arkansas may be offered conditional admission to their intended degree programs and admission as a non-degree undergraduate student to complete an Intensive English course sequence at the University of Arkansas. Students may fulfill the English proficiency requirement and be granted full admission to the University of Arkansas upon successful completion of ELAC 0603 University Connections Intensive English Level VI with a grade average of "B" or better.

An entering degree-seeking freshman who has completed secondary school at either U.S. or foreign institutions must have a) the equivalent of a final cumulative GPA of at least 3.0 (or its equivalent) and b) competency equivalent to that developed by taking four years of English and three years each of mathematics, natural sciences, and social studies, and an additional three units of electives chosen from English, speech, foreign languages, mathematics, natural sciences, or social studies in U.S. high schools.

A student transferring with fewer than 24 semester hours of postsecondary coursework at either U.S. or foreign institutions must a) have a cumulative GPA of at least a 2.00 (or its equivalent) on all postsecondary coursework attempted, and b) meet the requirements specified for entering freshmen. A student transferring from either a U.S. or foreign post-secondary institution with at least 24 semester hours must have the equivalent of a cumulative GPA of at least 2.00 on all post-secondary course work attempted.

Non-degree seeking applicants, regardless of citizenship, whose first language is not English must present evidence of meeting the English Language Proficiency Requirement by one of these three methods:

1. Presenting a valid minimum score of 527 on the Institutional Test of English as a Foreign Language (TOEFL), a 71 on the Internet based Test of English as a Foreign Language (TOEFL), a minimum score of 6.0 on the International English Language Testing System Academic (IELTS), an ACT English subscore of 19, or an SAT Evidence Based Reading and Writing subscore of 500 or an equivalent test as approved by the Office of International Admissions at the time of application.
2. Be currently enrolled in "good standing" as a degree-seeking student at another college or university in a country where the native language is English or have had enrollment in such a college or university within the last 12 calendar months from the time of application and their status at the end of the previous enrollment was "good standing."
3. Be approved by the Director of the Office of International Admissions for a waiver of the English Language Requirement based on the applicant's academic or professional background.

A non-refundable international application fee is required for all international applicants. All applications and supporting documents must be submitted by May 31 for the fall semester; October 31 for the spring semester; and March 1 for the summer sessions.

Any international student returning to the university after an absence of a full semester (fall or spring) or more must submit an application for readmission. For these students, the application deadlines are August 15 for the fall term and January 1 for the spring term. It should be noted that a student previously enrolled at the University of Arkansas who takes a full term of courses elsewhere and then seeks readmission to the university returns as a transfer student and must meet university admission requirements for international transfer students, submit a photocopy of the l-20 issued by the transferring institution, and submit a new financial statement. An application fee is not required for returning students.

For specific admission requirements and application materials pertaining to students on F-1, J-1, or any non-immigrant visas, applicants should write directly to:

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International Admission Office
340 N. Campus Drive
213 Gearhart Hall
1 University of Arkansas
Fayetteville, Arkansas }7270
1-479-575-6246
iao@uark.edu
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Please see the section Placement and Proficiency Tests (http:// catalog.uark.edu/undergraduatecatalog/enrollmentservices/ placementandproficiencytests/) for university policy regarding English language use by non-native speakers.

## New Freshmen

Applications are reviewed on an individual basis with consideration given to the applicant's overall grade-point average (GPA) and standardized test scores. New freshmen and those transfer students with fewer than 24 transferable credit hours should have completed or be in the process of completing the following college preparatory curriculum in high school:

## 16 Units Total

- English - 4 units
- Mathematics - $\mathbf{4}$ units (Units must be equivalent to or higher level than Algebra I)
- Social Studies - 3 units
- Natural Sciences - 3 units
- 1 unit general sciences and 2 units lab sciences (Choose two courses from biology, chemistry, and physics laboratory. Two years of principles of technology will meet one unit of natural sciences [physics]. Two years of applied biology/chemistry will meet one unit of natural sciences [biology].)
- Others - 2 units
- Oral Communication - $1 / 2$ unit
- Physical Education - $1 / 2$ unit
- Health and Safety $-1 / 2$ unit
- Fine Art - $1 / 2$ unit

Arkansas residents who have taken these course requirements and who have an overall high school GPA of 3.00 or better and an ACT score of 20 or an equivalent 930 SAT or 1020 Redesigned SAT score or better meet the minimum admission requirements. Out-of-state applicants must meet minimum admission requirements and may be required to meet higher standards, depending on demand. Students not meeting minimum admission requirements are still encouraged to apply and will be reviewed for possible admission by the Admissions and Appellate Board.

## Accelerated Admission

Superior high school students who have completed a rigorous college preparatory curriculum may seek admission to the freshman class at the end of their junior year of high school. Applicants for accelerated admission must complete certain required subjects during three years of high school study, submit letters of recommendation, and submit an ACT or SAT score equivalent to at least the 90th percentile of the university's previous entering class. Additional information and application materials may be obtained at the Office of Admissions, by calling 1-800-377-8632, or visiting admissions.uark.edu (http://admissions.uark.edu).

## Non-Degree Seeking Students

Applicants who are not interested in working toward a degree while taking classes may, under certain conditions, be approved to do so upon submitting an application for admission. Degree-seeking students attending part-time or as an "undeclared major" should not confuse their status with this special, non-degree seeking category. Students who are admitted provisionally and placed in a non-degree seeking status until they earn a minimum 2.0 GPA on 12 credit hours should also not confuse their status with this special category. The Office of Admissions reserves the right to determine the proper category of admission and to determine what credentials may be required.

Classification as a special student permits enrollment in credit classes (or as an auditor) on a space-available basis; however, special students are not eligible for financial aid, and the university incurs no particular obligation to provide academic advisement.

Admission as a special, non-degree seeking student is not intended to serve as a means of access to regular, degree-seeking status nor is it intended for a person who has earned unsatisfactory grades in previous high school or college course work. Students who have been denied regular undergraduate admission are not eligible for this status. All special students are subject to the same regulations concerning scholastic
probation, suspension, and dismissal as other undergraduate students. Students who have previously been assessed developmental course requirements or high school course deficiencies will retain that status as a special non-degree student.

Non-degree seeking students must meet course prerequisites and should be prepared to verify to the department by official documentation that university course prerequisites have been met, if appropriate. Students planning to enroll in any upper-division education courses should verify admission to the Teacher Education Program prior to registration. A non-degree seeking student may not enroll for more than nine hours of courses in a term without approval of the student's academic dean. No more than 24 semester hours earned while in a non-degree seeking status will apply to a degree at the university.

Unless otherwise specified, students with non-degree seeking status who wish to be admitted into a degree program at the University of Arkansas must apply for admission as such prior to the beginning of the term for which the change of status is requested. All requirements for admission to regular status must then be met, except for students in the provisional non-degree-seeking status.

## When to Apply

Non-degree seeking students must meet the same application deadlines as other students. See the Deadlines for Admission Consideration (p. 36) on the previous page for deadlines.

## How to Apply

The following students may be considered for non-degree seeking status:

1. Visiting students who attend other colleges or universities and wish to enroll at the university to earn credits that they plan to transfer back to their home institution. It is the student's responsibility to verify with his or her college that courses taken here will be acceptable as transfer credit.
Application procedure: Submit a completed application, a nonrefundable application fee, and a letter of good standing verifying eligibility to return to the home institution.
2. Students who want to take courses of special interest for personal or professional development but who are not interested in working toward a degree. Applicants in this category are normally expected to have been out of high school for five or more years.
Application procedure: Submit a completed application and nonrefundable application fee. Students who have been out of high school less than five years should submit a transcript and test scores verifying that admission requirements have been met.
The application fee is not required for residents of Arkansas who are 60 years and older and wish to participate in the senior tuition waiver program (https://admissions.uark.edu/apply/seniorcitizens.php). (http://admissions.uark.edu/apply/seniorcitizens.php)
3. Students who already have a college degree and who want to take credited classes but not earn credit toward another degree at this time. Credits earned under this classification will not count toward a graduate degree.
Application procedure: Submit a completed application and nonrefundable application fee. Students who wish to enroll for successive terms should submit a transcript showing their degree.
4. Dually enrolled high school students. Dually enrolled high school students must have at least a 20 ACT score and a 3.00 high school GPA to enroll. Dually enrolled high school students are ineligible to enroll in remedial courses.

Application procedure: Submit a completed application, a nonrefundable application fee, ACT or SAT scores, and a high school transcript. Admissions applications should be submitted at least one month in advance of the term.

Dually enrolled high school seniors who plan to enroll in the fall as regular freshmen must submit a separate application for regular admission for the fall.

## Placement and Proficiency Tests

ACT, SAT, and College Board Accuplacer scores are used to determine placement in university courses. Students whose scores indicate the need for additional preparation may be placed in courses designed to prepare them for college-level work. (See Arkansas Requirements for Developmental Course Placement (p. 49).) Credit earned in such courses does not count toward degrees in all colleges. (See Courses That Do Not Count Toward Degrees (p. 49).)

## Course Placement Freshman Composition Placement

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) and ENGL 0001 Writing Lab

- Below 19 on the English section of the ACT and high school GPA less than 3.20
- Below 490 on the Evidence-Based Reading and Writing section of the SAT and high school GPA less than 3.20
- Below 255 on the Accuplacer Next-Generation Writing section and high school GPA less than 3.20

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)

- ACT English scores of 19-27, or
- SAT Evidence-Based Reading and Writing scores of 490-620, or
- Accuplacer Next-Generation Writing section score of 255 or higher, or
- High school GPA of 3.20 or higher

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) or ENGL 1013H Honors Composition I

- ACT English scores of 28-29, or
- SAT Evidence-Based Reading and Writing scores of 630-680

Students with ACT English scores of 30 or greater or SAT EvidenceBased Reading and Writing scores of 690 or greater may enroll in ENGL 1013H and ENGL 1023H or elect exemption. Some degree programs require credit in composition, and students should confer with their advisors before exempting.

## Math Placement Test

All students have the opportunity to take the online mathematics placement assessment. To take the assessment, or for more information regarding it and its requirements, visit the University of Arkansas Mathematical Sciences website (http://math.uark.edu/).

## Arkansas State Requirements for Developmental Course Placement

Arkansas law specifies that all first-time entering freshmen enrolled in a bachelor's degree program will be placed in either college-level credit courses in English and mathematics or remedial courses in English
composition, reading, and mathematics on the basis of their scores on specified tests.

Students will be required to register for these courses during their first term at the university and, if necessary, in subsequent terms until passing grades have been earned in all required courses. Students who need further information or clarification are encouraged to discuss their course placement with their academic advisor or dean. Students may place out of these prescribed remedial courses with appropriate scores on the relevant subject placement tests offered through the appropriate university department.

## Reading

Students who score

- below 19 on the Reading section of the ACT
- below 470 on the Evidence-Based Reading and Writing section of the SAT
- Below 252 on the Accuplacer Next-Generation Reading section
must enroll in PLSC 2003, HIST 2003, or HIST 2013 (AP or IB credit or concurrent/transfer credit for one of these courses will also satisfy the remediation requirement). Students are exempt from reading remediation if they have a 3.0 or higher final high school GPA (based on the Arkansas standard of weighted credit for AP, IB, and concurrent enrollment only). All students, however, will be required to complete coursework as indicated by their degree plan.


## English

Students may place out of ENGL 0001 by:

- earning a high school GPA of 3.20 or higher
- earning a score of 255 or higher on the Accuplacer Next-Generation Writing test
- or by demonstrating college-level writing skills on a required essay administered during the first week of class (students in ENGL 1013 who exhibit writing challenges in their first essay may be asked to enroll concurrently in ENGL 0001)


## Math

Students who score

- below 19 on the mathematics section of the ACT
- below 510 on the Math section of the SAT, below 255 on the Qualitative Reasoning, Algebra, and Statistics (QAS) of the Accuplacer Next-Generation, below 235 on the Advanced Algebra and Functions (AAF) of the Accuplacer Next-Generation, or below 30 on the ALEKS
- and report a high school GPA below 3.70
- Students with the above scores must enroll in MATH 1203 and MATH 0002L or MATH 1313 and MATH 0131L. All new first-year freshman students are encouraged to take the ALEKS online mathematics placement assessment. To take the assessment, or for more information regarding it and its requirements, visit the University of Arkansas Mathematical Sciences website (http://math.uark.edu/).

Students who earn a 46 or higher on the Math Placement Test (https:// fulbright.uark.edu/departments/math/undergraduate/placement/aleksppl.php) offered through ALEKS may enroll in MATH 1203.

## Courses That Do Not Count Toward a Degree

The following courses do not count toward degree credit in any college or school: ENGL 0001, MATH 0001L, MATH 0002L and MATH 0131L.

The following courses do not count toward any degree in the College of Engineering: MATH 1203, MATH 1213, MATH 1284C, and ENGL 2003.

## Speech Communication Exemption Examination

Students who have had speech in high school and/or experience in public speaking may elect to take this test for exemption from or credit in COMM 1313. Both the written and oral (a five-minute impromptu speech) examinations must be passed to receive exemption or credit.

## World Language Placement Examinations

Students with previous world language experience in French, German, or Spanish are encouraged to take language placement examinations offered during summer orientation. Those test scores will be used by academic advisors to determine an appropriate world language placement level. Students who omit one or more course in the basic language sequence will receive credit for omitted courses when they have validated their high placement by passing with a " $C$ " or better the course into which they were placed. Conversation courses $(3033,4033)$ and selfpaced (correspondence) courses may not be used to validate such prior knowledge.

## General Chemistry Placement Examinations

These tests will be offered throughout the year. Students who performed at above average levels in high school chemistry may find it to their advantage to enroll directly in the second semester of general chemistry. This examination is designed to provide guidance in making this course selection. Students who place into the second semester of general chemistry and earn a grade of "C" or better in the course will also receive credit for the first semester of the course.

## English Language Use by Non-Native Speakers

Non-native speakers of English admitted to undergraduate study at the University of Arkansas are required to present an acceptable writing score on one of the following tests: Internet based TOEFL (iBT), IELTS PTE Academic, or ELPT. Depending on exam scores, a student may be required to take one or more English Language and Culture (ELAC) course prior to the beginning of classes in their first term of study. Non-native speakers in the following categories are exempt from this requirement:

1. Undergraduate students who transfer at least 24 hours of credit from U.S. institutions, including courses that meet the freshman composition requirement;
2. Undergraduate students who have completed grades 10 through 12 in and graduated from a U.S. high school and have obtained an ACT English section score of 19 or above or a SAT verbal score of 500 or above;
3. Undergraduate students with a TOEFL iBT writing score of 28 or IELTS writing score of 6.5 or PTE Academic writing score of 77 or ELPT writing score of 81 .

Diagnostic and placement testing is designed to test students' ability to use English effectively in an academic setting, and its purpose is to promote the success of non-native speakers in completing their chosen course of study at the University of Arkansas. Test results provide the basis for placement into English Language and Culture (ELAC) support courses or course sequences. Courses are offered by the Graduate School and International Education for those students whose language skills are diagnosed as insufficient for college-level work at the level to which they have been admitted (undergraduate or graduate study). Credit in ELAC courses may count toward University of Arkansas degrees. Nonnative speakers assessed as having language competence sufficient for their level of study will not be required to enroll in ELAC courses.

Undergraduate and graduate students assessed ELAC courses are required to complete these courses during their first semester of enrollment at the university.

## Readmission

Any former student who wishes to return to the University of Arkansas after missing a fall or spring semester should complete an application for admission. Students enrolled in University of Arkansas self-paced (correspondence) courses during their absence must be readmitted. A non-refundable application fee is required for former students.

## When to Apply

An early readmission will enable a student to register during priority registration. The student should submit an application and all appropriate credentials at least one month prior to the time of registration. Registration dates and procedures are found on the Schedule of Classes (http:// registrar.uark.edu/465.php).

## Deadlines for Admission Consideration

Applications and required transcripts must be received in the Office of Admissions by the following deadlines to be accepted for the respective enrollment periods:

- Fall - August 1
- Spring - December 20

Students who are unable to submit their applications by the deadline may be denied admission and considered for admission for the following term.

## Requirements

1. Students must be academically eligible to return to the university and are readmitted with the same academic status as held during their last attendance. Course work taken at another institution will not affect a student's probationary status or university GPA. Students may change degree programs on re-admission to the University of Arkansas regardless of academic status, except for students entering the College of Engineering. A student who is not in good standing may not enter the College of Engineering. Students who have not satisfied their initial provisions of admission (but are still eligible to return) will be required to satisfy those conditions upon their return.
2. Students who have attended another institution while away from the University of Arkansas will be considered returning transfer students and must have either a 2.00 GPA on all college work attempted and/ or a 2.00 GPA on all course work attempted since last attending the University of Arkansas. Official transcripts of all course work attempted since last attendance at the university must be submitted. (See Admission of Transfer Students.)
3. Students who previously attended or currently attend the university as special, non-degree seeking students and wish to return as degreeseeking candidates must apply for admission as freshmen or transfer students, furnishing all appropriate admission credentials, including any required test scores. All requirements for admission to regular status must be met. (See appropriate section of this catalog for requirements.)
4. Former students who are submitting petitions to either the Academic Standards Committee or the Admission and Appellate Board to request readmission must have on file all required documents by the application deadlines. (See the Academic Standards Committee Calendar (https://registrar.uark.edu/academic-dates/administrativecalendar/) for deadlines for "Petitions to Be Submitted.")

## School of Law

A baccalaureate degree is required for admission to the University of Arkansas School of Law, except for those students in the Fulbright College of Arts and Sciences or in the Dale Bumpers College of Agricultural, Food and Life Sciences who are admitted to the special six-year program. All applicants for admission are required to take the LSAT. (See the Fulbright College Pre-Law Program (p. 276) or the Dale Bumpers College of Agricultural, Food and Life Sciences (p. 131).)

For complete details concerning admission to the University of Arkansas School of Law, see the Admission page (p. 36) or write to Office of Admissions, Leflar Law Center, University of Arkansas, Fayetteville, AR 72701; or by calling 479-575-3102. Applications can be submitted online at apply.uark.edu/ (http://apply.uark.edu/).

## Transfer Students

## Transfer Admission Requirements

Applicants who have attended other colleges or universities after high school graduation are considered transfer students. Applicants must submit official transcripts of all previous college courses attempted, whether or not credit was earned and regardless of whether the applicant wishes to transfer any credit to the University of Arkansas. Transcripts from each institution attended should be sent directly to the Office of the Registrar. All transfer students must meet the following requirements:

1. Have a cumulative GPA of at least 2.00 on all course work attempted;
2. Be eligible to return to the last institution attended. Grade-point average is calculated on all coursework attempted.

Students who have completed fewer than 24 transferable semester hours must, in addition to the above requirements, meet all requirements for freshman admission (see Admission of Entering Freshmen (p. 38)). Test scores and transcripts are also evaluated to determine whether State of Arkansas requirements for developmental course placement have been met. (See Registration (p. 49).) For policies regarding transfer of credit from other institutions, see Academic Regulations (p. 89).

## Financial Aid and Scholarships

## Financial Aid

The University of Arkansas annually awards nearly $\$ 180$ million of financial aid and scholarships to students. Financial aid is divided into categories of grants, work, loans, and scholarships. Unless otherwise specified, a student needs to complete only two forms to apply for federal aid: the Free Application for Federal Student Aid (FAFSA), which analyzes the ability of the student's family to pay for college, and the university's application for admission. These forms collect information used by the

Office of Financial Aid in determining awards. In some cases, copies of the parents' and/or student's tax return transcripts and verification documents are needed.

The Financial Aid Office (http://finaid.uark.edu/) is part of Enrollment Services and is housed in Silas Hunt Hall, Room 114

## Scholarships

The University of Arkansas Academic Scholarship Office awards scholarships totaling more than $\$ 12$ million for students each year. This total does not include funds that support external scholarships held by U of A students such as Governor's Scholarships, Arkansas Academic Challenge Scholarships, or non-resident tuition waivers. Scholarships funded by the university fall into three broad categories distinguished fellowships, academic scholarships, and special interest/ skills scholarships. Interested students should consult the Academic Scholarships Office (http://scholarships.uark.edu/) website for the most up-to-date information.

The Academic Scholarship Office (http://scholarships.uark.edu/) is part of Enrollment Services and is housed in Silas Hunt Hall, Room 114.

## College and Departmental Scholarships

The following college and departmental scholarships are available to both entering and currently enrolled students at the University of Arkansas. Complete addresses and phone numbers of the colleges, schools, or departments listed below may be found in the respective college or school sections of this catalog.

## Fay Jones School of Architecture and Design

The Fay Jones School of Architecture and Design offers a limited number of scholarships at various amounts to entering freshman in any of the degree programs offered by the School. Several scholarships are renewable annually to the recipient who maintains all the requirements of the scholarship.

Many upper level scholarships are available to continuing students. Applications are available in the fall, and recipients are selected in the spring for the following academic year. Find out more information about the Fay Jones School's scholarship applications (http://fayjones.uark.edu/ admissions/).

## Fulbright College of Arts and Sciences

The Fulbright College of Arts and Sciences offers many outstanding scholarship opportunities. For comprehensive information about these awards, call 479-575-5219 or visit the Fulbright College's scholarships page (http://fulbright.uark.edu/deans-office/offices-and-services/ scholarships-and-fellowships/).

Three college-wide scholarships merit special attention: Through the Sturgis Fellowship Program, Fulbright College offers premier scholarships worth $\$ 70,000$ over four years to exceptionally talented students with the intellectual potential to become future leaders in society. In addition, all honors students are eligible to apply for research and study abroad funding through the Sturgis Grants Program. For information or an application, contact the Director of Honors Studies at 479-575-2509.

The King Fahd Center for Middle East and Islamic Studies offers substantial four-year and two-year renewable scholarships to superior
students majoring in Middle East Studies. The program also offers competitive funding for language study in Morocco, Tunisia, and Egypt. Funding for summer study abroad and research projects is considered on a case-by-case basis. Scholarship applications and information about the program can be obtained by contacting mest@uark.edu or calling 479-575-4157.

In honor of the Fulbright commitment to international education, the college offers the J.W. and Elizabeth W. Fulbright Endowed Scholarship, which supports a year of study abroad. To qualify, students must display an interest in one of the following fields: literature, history (including theatre, art, and music history), jurisprudence, philosophy, archaeology, comparative languages, and those aspects of the social sciences that employ philosophical or historical approaches. For more information about these opportunities, call 479-575-5219 or visit the Fulbright College's scholarships page (http://fulbright.uark.edu/deans-office/offices-and-services/scholarships-and-fellowships/).

## Dale Bumpers College of Agricultural, Food and Life Sciences

Scholarships for students seeking rewarding careers involving food, family, or the environment are made possible by generous gifts from many firms and individuals. The criteria for these scholarships include academics, financial need, interests, organizational involvement, and leadership. Bumpers College scholarships include the Division of Agriculture Land Grant Scholars Endowment Program which offers renewable scholarships to high achieving students; The Dale Bumpers Distinguished Scholars Program which provides an annual scholarship to an outstanding transfer student, an outstanding Ph.D. graduate student, and an outstanding M.S. graduate student; and International Study Abroad scholarships for students expanding their experiences around the world.

Information and application procedures for the more than 200 Bumpers College and departmental scholarships are available at the Bumpers College scholarship page (https://bumperscollege.uark.edu/futurestudents/scholarships.php) or by contacting the Associate Director of Scholarship at 479-575-2252, or via email to dbcafls@uark.edu.

## Sam M. Walton College of Business

The Boyer Fellowship is offered to Walton College students who have achieved at an outstanding level both in and out of the classroom. High grades and standardized test scores are required along with a strong academic curriculum and exceptional academic performance. Applicants for the Boyer Fellowship also must demonstrate financial need, be an Arkansas resident, and graduate from an Arkansas high school

Other scholarships are available through the departments of accounting, information systems, economics, finance, management, marketing, and supply chain management, as well as through the Walton College's general scholarship program. Scholarships are primarily awarded on the basis of academic achievement and/or financial need.

For further information on Walton College scholarships, contact the Undergraduate Programs Office at 479-575-4622.

## College of Education and Health Professions

Thanks to the generosity of our donors, the College of Education and Health Professions offers several scholarship opportunities. These gifts allow us to support the university's mission of recruiting
and retaining high-achieving students who enrich and diversify the academic environment. Scholarships are available for both graduate and undergraduate students. Please visit the College's scholarship webpage (https://coehp.uark.edu/students/scholarships.php) for more information.

## College of Engineering

The College of Engineering awards numerous scholarships and fellowships beginning with the sophomore year to continuing students, transfer students, and graduate students. Most scholarships are based primarily on academic performance. However, some scholarships are also awarded on the basis of financial need and diversity. Scholarships are available from both the college and its individual departments.

College scholarships are available to any engineering student while departmental scholarships are intended for students enrolled in a particular discipline of engineering. Students must be admitted to the University of Arkansas and accepted into the College of Engineering to qualify and receive either a college or departmental scholarship. The college has a one-step application process that allows students to be considered for all college level scholarships and departmental scholarships.

For more information concerning scholarship and diversity opportunities, please see the college's scholarship website (https://coehp.uark.edu/ students/scholarships.php).

## Music and Band

The Department of Music offers scholarships (both music scholarships and band scholarships) for talented students who sing or play instruments. All scholarships are based on musical ability, academic achievement, and potential contribution to music department ensembles. Scholarships are renewable for up to five years (ten semesters), as long as the student meets the conditions specified on the scholarship letter or contract.

Music and band scholarships are available to music majors and to students majoring in other areas who participate in certain ensembles. All scholarships require an audition. To set up an audition, contact the music department at 479-575-4701 or the band office at 479-575-4100.

## Financial Aid

The University of Arkansas annually awards nearly $\$ 180$ million of financial aid and scholarships to students. Financial aid is divided into categories of grants, work, loans, and scholarships. Students need to complete the Free Application for Federal Student Aid (FAFSA), which analyzes the ability of the student's family to pay for college, as well as the various scholarship applications offered through the Academic Scholarship Office, the university's colleges and departments, and the Arkansas Alumni Association. These forms collect information used by the Office of Financial Aid and the university's scholarship committees in determining awards. In some cases, copies of the parents' and/or student's tax return transcripts and other verification documents are needed.

## Determining Financial Need

To determine financial need, a student must complete the FAFSA. Students release their information to the University of Arkansas by completing the college release section with the University of Arkansas Title IV Code of 001108.

There is a priority date of March 1 for the submission of the FAFSA for the approaching school year for new students. Federally funded financial aid will be awarded on the basis of need as reflected by the FAFSA.

The Student Aid Report from the FAFSA (consisting of several pages) will be sent directly to the student by the Central Processing Service. A student needs to be enrolled or accepted for enrollment before a financial aid award may be generated. To continue receiving financial aid, the student needs to make satisfactory progress toward a degree, as defined by the University of Arkansas, and complete the FAFSA each year. (See Satisfactory Academic Progress below.)

## Application Procedure

1. Apply for admission to the university, if not currently enrolled or admitted.
2. Complete the Free Application for Federal Student Aid (FAFSA) and submit it to the federal processor by mail or online. You may submit the FAFSA at the Federal Student Aid website (http:// www.fafsa.ed.gov/).

To receive priority consideration for financial aid, all forms and applications need to be submitted by March 1. Students are encouraged to apply even if they miss this priority date. Funds will be available after the priority date.

A student has a couple of choices concerning processing his or her FAFSA. These include mailing the form to the Federal Student Aid Programs or submitting it electronically on the Federal Student Aid website (http://www.FAFSA.ed.gov/). The processing time for electronic applications is three days, and processing time for mailed applications is four to six weeks.

## Satisfactory Academic Progress

Federal regulation requires that a student must be making satisfactory academic progress regardless of whether he or she has previously received Title IV aid. All students enrolled at the University of Arkansas who receive financial aid through the Title IV Assistance Programs must meet satisfactory academic progress requirements as defined below to be eligible for further aid. Satisfactory academic progress is deemed to have been made by any undergraduate student who meets both the quantitative and qualitative requirements indicated below.

## Quantitative Requirements

There are two quantitative requirements that the student must meet in order to remain eligible to apply for federal financial assistance. First, the student must pass, at a minimum, $67 \%$ of the credits attempted while attending the university. For the purpose of the $67 \%$ rule, grades of 'W' and 'l' are not considered passing grades and the completion percentage is truncated after the first decimal place and rounded to the nearest whole number. In addition, the student will remain eligible to apply for aid as long as the number of credits required for the student's published degree plan.

A transfer student may have earned credits at another school that will count toward his or her degree at the University of Arkansas. Class credits transferred to the University of Arkansas and classes taken for remediation at the University of Arkansas are used in both the 67\% and $150 \%$ calculation.

The determination of each student's meeting the quantitative requirements for satisfactory academic progress will be made annually following the conclusion of the spring semester. If a student fails to pass at least $67 \%$ of the credits attempted or has attempted more the $150 \%$
of the number of credits required for graduation, then the student must appeal for reinstatement of financial aid eligibility.

## Qualitative Requirements

A student is deemed to have met the qualitative requirements for satisfactory academic progress for financial aid purposes provided the student's cumulative GPA is 2.0 or greater. By default, students who do not have any university credit will pass the qualitative requirement. The determination of each student's meeting the qualitative requirement for satisfactory academic progress will be made annually following the conclusion of the spring semester.

## Additional Information About SAP Calculations

Dual majors and degrees are calculated at $150 \%$ of the total unit requirements of the primary plan. Changing of major will mean future SAP calculations will use the new primary plan or degree but all previous completed and attempted hours will still be used in SAP calculations. All transfer hours will be added into calculations as completed and attempted. Once an undergraduate degree is earned, students are only eligible for direct loans whether the degree is indicated by graduation or not. For second degrees, the calculation will monitor progress from the date of the previous degree (excluding technical certificates and associate degrees).

## Graduate and Law Students

Satisfactory academic progress for graduate and law students is determined as described above with one exception. In order to meet the quantitative requirement that students pass at least $67 \%$ of credits attempted, graduate and law students must pass each course with a grade of $C$ or better while attending the university at the graduate level.

## Satisfactory Academic Policy Appeals

When a student loses federal aid eligibility because they failed to make satisfactory progress, they may appeal that result because of their injury or illness, the death of a relative, or other special circumstances. Their appeal must explain why they failed to make satisfactory progress and what has changed in their situation that will allow them to make satisfactory progress at the next evaluation. The only way to regain aid eligibility without a successful SAP appeal is by meeting the SAP criteria above.

Students who fail to meet the above requirements will be notified that their financial aid has been denied. Each student denied aid will automatically be given an option to appeal to the Student Aid Committee. The Committee will review each appeal on an individual basis to determine whether there are circumstances beyond the student's control that prevented him or her from maintaining satisfactory progress. The decision of the Committee is final in appeal matters.

## Scholarships

The Academic Scholarship Office is a part of Enrollment Services and is housed in Silas Hunt Hall, Room 114.

The Academic Scholarship Office awards over 4,000 scholarships totaling more than $\$ 12$ million for students each year. This total does not include funds that support external scholarships held by UA students such as Governor's Scholarships, Arkansas Academic Challenge Scholarships, or non-resident tuition waivers. Scholarships funded by the university fall into three broad categories: prestigious fellowships, academic scholarships, and special interest/skills scholarships. Interested students should consult
the Academic Scholarships Office (http://scholarships.uark.edu/) website for the most up-to-date information.

## Scholarships for New Students

## Endowed Fellowships

The University of Arkansas offers approximately 90 endowed fellowships per year. The fellowships are given in one of four different programs: Honors College Fellowships, established in 2002; Bodenhamer Fellowships, established in 1998; Sturgis Fellowships, established in 1985; and Boyer Fellowships, established in 2000. The endowed fellowships are among the most competitive in the nation and are awarded to the top 1-2 percent of students. U of A Fellowships are awarded competitively. Students who wish to apply should visit the Honors College website (http:// honorscollege.uark.edu/).

|  | Annual Award | Eligibility Criteria | Application Procedure | Renewal Criteria |
| :--- | :--- | :--- | :--- | :--- |

## Academic Scholarships

A number of academic scholarships also are awarded to entering freshmen. Selection criteria may include national test scores (ACT or SAT), gradepoint average, National Merit recognition, quality and quantity of courses taken, application materials, and other pertinent factors. For online information, go to scholarships.uark.edu (http://scholarships.uark.edu/). Transfer student scholarships are awarded to students transferring from two-year colleges in Arkansas in conjunction with the Arkansas Association of Two Year Colleges' (AATYC) Academic All-Star program. Nominations are submitted to the AATYC and recognized at their annual conference. Additional transfer student scholarships are also available. See scholarships.uark.edu (http:// scholarships.uark.edu/).

| Name | Annual Award | Eligibility Criteria | Application Procedure | Renewal Criteria |
| :---: | :---: | :---: | :---: | :---: |
| Chancellor's Merit Scholarship | Up to $\$ 10,000$, plus the amount of either a Corporate or a UofA National Merit Scholarship, per year toward the direct cost of education, includes partial out-of-state tuition differential | National Merit finalists. Exceptional academic performance. Competitively awarded. | Apply for admission. <br> Complete Entering Freshman <br> Scholarship Application (http://scholarships.uark.edu) <br> Priority Deadline: November 15 | Cumulative 2.75 GPA and 30 hours earned by the end of the second semester of each award year. 4 years or 8 semesters total (5 years for the Bachelor of Architecture and Bachelor of Landscape Architecture). |
| Chancellor's Scholarship | Up to $\$ 8,000$ per year toward direct cost of education, including tuition, fees and double-occupancy room and board in UA residence hall or Greek housing. | Applications are competitive and typically come from the top 5 percent of the applicant pool. National Merit Semifinalists and Semifinalists are also considered. Competitively awarded. | Apply for admission. <br> Complete Entering Freshman <br> Scholarship Application <br> (http://scholarships.uark.edu) <br> Priority Deadline: November 15 | Criteria same as for <br> Chancellor's Merit <br> Scholarship (see above). |
| Chancellor's Community Scholarship | \$5,000 per year | Top applicants in the applicant pool who also have a demonstrable commitment to community service. | Apply for admission. <br> Complete Entering Freshman <br> Scholarship Application (http://scholarships.uark.edu) <br> Priority Deadline: November 15 | Criteria same as for Chancellor's Merit Scholarship (see above). |
| Honors College Academy Scholarship | \$4,000 per year | Top applicants from the applicant pool with a minimum 27 ACT and 3.50 GPA. Competitively awarded. | Apply for admission. <br> Complete Entering Freshman <br> Scholarship Application (http://scholarships.uark.edu) <br> Priority Deadline: November 15 | Criteria same as for <br> Chancellor's Merit <br> Scholarship (see above). |
| New Arkansan Non-Resident Tuition Scholarship Award | Partial out-of-state tuition differential. Variable amount based on hours enrolled. See http://nrta.uark.edu for more information. | See https:// <br> scholarships.uark.edu/ <br> nrta (https:// <br> scholarships.uark.edu/nrta/)/ <br> for most up-to-date eligibility requirements. | Apply for admission. No scholarship application is required. | Renewable with completion of 24 hours per academic year and 2.75 minimum GPA. Up to 4 years (5 years for students in the Architecture program). |
| Freshman Success Scholarship | \$2,000 non-renewable | Students who have demonstrated outstanding academic achievement. Competitively awarded. | Apply for admission. <br> Complete Entering Freshman <br> Scholarship Application (http://scholarships.uark.edu) <br> Priority Deadline: November 15 | Non-renewable |
| Freshman Academic Scholarship | \$1,000 non-renewable | Students who have demonstrated outstanding academic achievement. Competitively awarded. | Apply for admission. <br> Complete Entering Freshman <br> Scholarship Application (http://scholarships.uark.edu) <br> Priority Deadline: November 15 | Non-renewable |
| University of Arkansas Leadership Award | \$2,000 per year | Students who have demonstrated outstanding academic achievement and leadership potential. Competitively awarded. | Apply for admission. <br> Complete Entering Freshman <br> Scholarship Application <br> (http://scholarships.uark.edu) <br> Priority Deadline: November 15 | Criteria same as for Chancellor's Merit Scholarship (see above). |


| Silas Hunt Distinguished Scholarship | Variable awards of \$5,000 or \$8,000 | Students who have demonstrated outstanding academic leadership qualities and potential and are from under-represented communities, which include but are not limited to: underrepresented ethnic and minority groups; students with interest in fields of study that do not attract members of their ethnicity or gender; under-represented counties in Arkansas; or firstgeneration college students. Competitively awarded. | Apply for admission. Complete Entering Freshman Scholarship Application (http://scholarships.uark.edu) Priority Deadline: November 15 | Criteria same as for Chancellor's Merit Scholarship (see above). |
| :---: | :---: | :---: | :---: | :---: |
| Razorback Bridge Scholarship | \$3,500 per year | Students who have demonstrated outstanding academic leadership qualities and potential and are from under-represented communities, which include but are not limited to: underrepresented ethnic and minority groups; students with interest in fields of study that do not attract members of their ethnicity or gender; under-represented counties in Arkansas; or firstgeneration college students. Competitively awarded. | Apply for admission. Complete Entering Freshman Scholarship Application (http://scholarships.uark.edu) Priority Deadline: November 15 | Criteria same as for Chancellor's Merit Scholarship (see above). |
| University Enrichment Scholarship | \$2,000 non-renewable | Students who have demonstrated outstanding academic leadership qualities and potential and are from under-represented communities, which include but are not limited to: underrepresented ethnic and minority groups; students with interest in fields of study that do not attract members of their ethnicity or gender; under-represented counties in Arkansas; or firstgeneration college students. Competitively awarded. | Apply for admission. Complete Entering Freshman Scholarship Application (http://scholarships.uark.edu) Priority Deadline: November 15 | Non-renewable |
| Jewel Minnis Scholarship | \$2,000 non-renewable | Students who have demonstrated outstanding academic achievement. Competitively awarded. | Apply for admission. Complete Entering Freshman Scholarship Application (http://scholarships.uark.edu) Priority Deadline: November 15 | Non-renewable |
| Arkansas Academic All Star Transfer Scholarship | AATYC Academic All Star receives annual award that pays tuition and tuition related fees up to $\$ 5,000$ per semester. | Awarded to students named the "Academic All-Star" by their Arkansas two-year college. | Students nominated as AATYC Academic All Star by their two-year college. Scholarship application is not required. | Maintain 2.75 cumulative $U$ of A GPA after each semester. Renewable up to five semesters. |


| Chancellor's Transfer Scholarship | \$3,000 per year | Arkansas residents with strong academic performance at Arkansas two-year colleges. Competitively awarded. | Deadline: April 1 for fall semester and October 15 for spring semester | Cumulative 2.75 GPA and 24 hours per year of eligibility. Renewable for one year. |
| :---: | :---: | :---: | :---: | :---: |
| Phi Theta Kappa Transfer Scholarship | \$2,500 per year | Awarded to top applicants from two-year colleges who are members of Phi Theta Kappa. Competitively awarded. | Deadline: April 1 for fall semester and October 15 for spring semester. Provide Phi Theta Kappa membership documentation. | Cumulative 2.75 GPA and 24 hours per year of eligibility. Renewable for one year. |
| Transfer Scholarship | \$2,000 per year. Renewable for one year. | Strong academic performance at another 2year or 4-year college or university. Competitively awarded. | Deadline: April 1 for fall semester and October 15 for spring semester | Cumulative 2.75 GPA and 24 hours per year of eligibility. Renewable for one year. |

## UA Scholarships - General Information

The following regulations govern the general university freshman scholarships described below:

1. November 15 is the priority scholarship deadline for entering freshmen. Applicants must apply to the university by November 1 to be considered for these scholarships.
2. An "entering freshman" is defined as a student who has not enrolled in another post-secondary institution in a fall or spring semester following graduation from high school.
3. Eligibility for renewal of the Chancellor's Scholarship and general university scholarships is determined at the end of the second semester each award year. Students may "catch up" in summer terms by taking classes at their own expense on the Fayetteville campus.
4. These scholarships are generally awarded per academic year to cover the fall and spring terms, up to an eight-semester maximum for most students, or a ten-semester maximum for students in the Bachelor of Architecture and Bachelor of Landscape Architecture programs, each of which is a five-year program. Renewal criteria are evaluated every two semesters.

## Special Scholarships and Conditions ACT 1185

Arkansas income taxpayers who earn a minimum of $\$ 5,500$ in wages and, with their dependents, reside in a bordering state in a county or parish contiguous to an Arkansas county in which a public institution of higher education is located may enroll at the University of Arkansas and receive the non-resident tuition award under the provisions of ACT 1185 of 1995 , Section 34 . The availability of funds may vary each year, and the students must provide certain documentation. Please contact the Academic Scholarship Office at 479-575-4464 for more information.

## Arkansas Alumni Association Scholarships

Thanks to the generosity of our donors, the Arkansas Alumni Association awards over one million dollars annually through a pool of scholarships. Each alumni scholarship has specific criteria based on the donors' wishes; including, but not limited to, academic achievement, service to the school and community, leadership ability, first-generation college-going and specific major and career choices. Some take into consideration financial need and unique personal backgrounds. All current and prospective students are encouraged to apply each year. Most Association-level scholarships are designated for incoming freshmen and are meritbased. Additional Alumni Association, Alumni Chapters and Alumni Societies scholarships are also available. For more information, visit the Arkansas Alumni Association's website (https://www.arkansasalumni.org/ scholarships/).

## Air Force and Army ROTC

The Air Force and Army Reserve Officers' Training Corps programs offer a number of scholarship opportunities for entering freshmen and oncampus students. See the Reserve Officers' Training Corps section of this catalog for detailed information.

## Military Benefits

The University of Arkansas is approved by the Arkansas Department of Higher Education and the U.S. Department of Veterans Affairs to participate in military educational benefit programs for veterans, current military members, reservists, national guard, and dependents of veterans who are working toward a degree. For more information regarding programs and eligibility please contact the university's Veterans Resources and Information Center (VRIC) at 479-575-8742 or http:// veteranscenter.uark.edu. (http://veteranscenter.uark.edu)

## Military Student Scholarships

The University of Arkansas provides three different scholarships to current and former military service members and the dependents of service members. The military service member scholarship provides 35 one-year scholarships in the amount of $\$ 4,000$ to support current and former service members. The military dependents scholarship provides 10 one-year scholarships in the amount of $\$ 1,500$ to support dependents of service members. The military book scholarship provides 10 one-semester scholarships (each fall and spring semester) in the amount of $\$ 500$ to support service members and dependents with book expenses. Students should contact the Academic Scholarship Office at 479-575-4464 or http://scholarships.uark.edu for further information.

## Registration

Undergraduate students, including students not declaring a major, must enroll in one of six academic units: the Fulbright College of Arts and Sciences; the Dale Bumpers College of Agricultural, Food and Life Sciences, the Sam M. Walton College of Business, the College of Education and Health Professions, the College of Engineering, or the Fay Jones School of Architecture and Design. Information regarding registration periods and procedures is found on the Registrar's website (http://registrar.uark.edu/).

## Registration Periods

Students must register during one of the formal registration periods. Currently enrolled students are expected to register during the priority registration held each semester for the following semester. New freshmen are expected to register during orientation. New freshmen not already registered during orientation should register during the open registration period that immediately precedes the beginning of classes each semester. New transfer students should contact their academic college for advising and registration information. There is a late registration period of five days at the beginning of fall and spring semesters, a one-day late registration period at the beginning of intersessions and a one- or two-day late registration period at the beginning of the summer sessions, but students may find that many classes are filled.

## Student Addresses

It is the responsibility of all students to maintain and correct their addresses with the university and to report any change of address promptly either in writing to the Office of the Registrar or on the Student Information System (http://isis.uark.edu/). Failure to do so may result in undelivered official correspondence and announcements. Emergency contact information is also required.

Important academic announcements are frequently sent to the students through university-assigned email accounts. Students must check this account frequently to avoid missing critical notices.

## Identification Cards

Identification cards are made at orientation and at the ID Card Office during the year. Several privileges on campus require an ID card, and it can be used as a debit card for purchases at various locations throughout the campus. Part-time students are also eligible for a card.

## Academic Advising

Academic advising is an active, ongoing exchange between the advisers and students, grounded in teaching and learning. Advising is based on students gaining accurate and appropriate information and direction to help make their educational experience relevant, coherent, and meaningful. It is a process that assists students in connecting with the University of Arkansas, making thoughtful decisions related to their academic experiences, and maximizing their educational and career opportunities. Quality academic advising is essential to achieving the university's vision. (Academic Advising Council Mission Statement, 2010)

While procedures may vary among schools and colleges, all successful academic advising should include the following:

- A mutual respect between adviser and student with the student possessing final responsibility for successful completion of a degree.
- Respect for students' ethnic and racial heritage, age, gender, culture, national origin, sexual orientation, and religion, as well as their physical, learning, and psychological abilities.
- A developmental and educational process that occurs over time.
- Consideration of individual students' interests, abilities, and needs.
- A collaborative effort to connect students to campus resources and services.
- Reasonable availability and accessibility to advisers.
- Interpretation of University of Arkansas, college, and departmental rules and courses.
- A student's understanding of the purpose and nature of the university core courses.
- Recommendation of appropriate courses.
- A student's understanding of and progress toward academic requirements.
- General information regarding career options and opportunities, with appropriate referrals as necessary.
- An understanding of and adherence to laws and regulations that relate to academic advising.
- Adherence to the highest principles of ethical behavior.

The University of Arkansas is committed to developing each student to his or her fullest potential. To this end, programs in each college have been established to improve the academic achievement and persistence of students on academic warning and of other students in need of academic assistance. Such assistance is provided through a variety of instructional and informational services.

## Courses That Do Not Count toward a Degree

The following courses do not count toward degree credit in any college or school: ENGL 0001 Writing Lab, MATH 0001L College Algebra Laboratory I, MATH 0002L College Algebra Laboratory II and MATH 0131L Quantitative Reasoning Laboratory.

The following courses do not count toward any degree in the College of Engineering: MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103), MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203), MATH 1284C Precalculus Mathematics (ACTS Equivalency = MATH 1305), and ENGL 2003 Advanced Composition.

## Adding and Dropping Courses

A currently enrolled student who has registered during the advance registration period should make any necessary or desired schedule adjustments such as adding or dropping courses or changing course sections during the schedule-adjustment period of the same semester. Students may add courses during the first five class days of a fall or spring semester. Students who drop classes will have their fees adjusted according to Fayetteville Policies and Procedures 330.0 - Tuition and Fee Adjustment Policy for Dropping Classes (https://vcfa.uark.edu/policies/ fayetteville/avcf/3300.php). Drops and withdrawals are two different functions. In a drop process, the student remains enrolled. The result of the withdrawal process is that the student is no longer enrolled for the term. Fee adjustment deadlines for an official withdrawal are noted in Fayetteville Policies and Procedures 518.0 - Tuition and Fee Adjustment Policy for Official Withdrawal (https://vcfa.uark.edu/policies/fayetteville/ avct/5180.php).

A student may drop a full-semester course during the first 10 class days of a fall or spring semester without having the drop shown on the official academic record. After the first 10 class days, and before the drop deadline of the semester, a student may drop a course, but a mark of "W," indicating the drop, will be recorded. A student may not drop a
full-semester course after the Friday of the thirteenth week of classes in a fall or spring semester. Drop-add deadlines for partial semesters, intersessions, and summer sessions are listed on the semester calendars located on the Office of the Registrar's website (http://registrar.uark.edu/).

## Audit Registration

Students wishing to audit a class should contact the instructor teaching that class and request permission to audit. If the instructor approves the audit, the academic department will register the student in that class as an audit. Auditing of a class is allowed on a space-available basis, and a student must pay fees for that class. The instructor shall notify the student of the requirements for receiving the mark of "AU" for the course being audited. The instructor and the student's dean may drop a student from a course being audited if the student is not satisfying the requirements specified by the instructor. The student is to be notified if this action is taken. The only grade or mark that may be awarded is "AU."

## Enrollment Status and Course Load

The enrollment status of undergraduate students is based on the number of hours enrolled in a term. The university recognizes full-time status as carrying a minimum of 12 semester hours in a regular (fall and spring) and summer term. Students should be aware that the minimum number of hours is insufficient for completion of a four-year degree program in eight academic semesters (four years). Since most university degree programs require a minimum of 120 semester hours, or 30 hours per year, a student should earn 15 hours per semester to complete most degree programs in four years (eight semesters). The university offers degree-completion plans; see the Office of the Registrar's website (http:// registrar.uark.edu/425.php) or the Academic Regulations (p. 67) section of this catalog.

The chart below shows the enrollment status for each term, based on hours enrolled.

| Term | Hours | Enrollment Status |
| :--- | :--- | :--- |
| Fall, Spring, Summer | $1-5$ | Less than half-time |
|  | $6-8$ | Half-time |
|  | $9-11$ | Three-quarter time |
|  | 12 or more | Full-time |

## Number of Hours Allowed per Semester

The number of hours in which a student is allowed to register includes self-paced (correspondence) courses taken through Global Campus.

1. Undergraduate students who wish to enroll in more than 18 hours in a regular term must be approved by their academic dean's office. Enrollment in an intersession is limited to a maximum of one lecture or lab course, with the exception of co-requisite courses, for a maximum of four hours.
2. Undergraduate students who wish to enroll in more than 21 hours in a regular term must get a recommendation from their academic dean's office and be approved by the Academic Standards Committee. (http://registrar.uark.edu/student-records/academic-standards-committee-petition.php)
3. Undergraduate students who wish to take more than 7 hours in one five-week summer session or more than 14 hours total in the summer term must get a recommendation from their academic dean's office
and be approved by the Academic Standards Committee. (http:// registrar.uark.edu/student-records/academic-standards-committeepetition.php)
4. For students with severe injury or illness of a temporary or permanent nature, less than 12 hours may be certified on a semester-bysemester basis as full-time with the approval of the student's dean and the concurrence of a physician or licensed examiner.

## Pass Fail

## Registration for Grades of Pass-Fail for Undergraduates

Undergraduate students in some programs may register to take certain courses on a pass-fail basis. In such cases, a mark of "P" (passed) or a grade of "F" (failed) will be recorded. The grade will remain either "P" or "F" and may not be changed at a later date.

Students in the Fulbright College of Arts and Sciences, the Fay Jones School of Architecture, and the Dale Bumpers College of Agricultural, Food and Life Sciences are eligible to enroll for certain courses on a passfail basis under the following conditions:

1. Students should contact the instructor teaching that class and request permission to enroll for a pass-fail grade. Instructors may deny this request when it is not consistent with course goals or methods (e.g., if there is significant group work or other types of collaboration by students). If the instructor approves, students should then seek approval from their adviser. (Students in Agricultural, Food and Life Sciences must also have the approval of their academic dean.)
2. That the student has attained sophomore rank or higher.
3. That the student is not on academic probation and has achieved a cumulative grade-point average of at least 2.00.
4. That such enrollment is limited to one course per semester.
5. That the total enrollment on a pass-fail basis be limited to no more than 18 hours in any student's degree program.
6. That the courses involved are general electives and are not required as part of the student's program, including major, minor, concentration, etc., or State Minimum Core requirements. Courses being used to fulfill any specific program requirement or to complete a State Minimum Core requirement are excluded from the pass/fail grading option and must be taken as a regularly graded course.
7. Registration for pass-fail credit must be completed prior to the final date for changing registration by adding a course.

Instructors can submit only a "P" or "F" grade on the final grade roster for a student approved for the pass-fail option. In order to receive a "P" the student must earn a grade of "C-minus" or above in the course. The "P" mark will not be counted in grade point average but will increment hours earned; the "F" grade will be counted in the grade point average.

Students in the College of Education and Health Professions may enroll in courses on a pass-fail basis under the same conditions but only in courses offered by the Fulbright College of Arts and Sciences or the College of Education and Health Professions. Walton College of Business and College of Engineering students may not take courses on a pass-fail basis.

## Student Classification

Definitions of undergraduate student classification are as follows:

| Classification | Course Hours Passed |
| :--- | :--- |
| Freshman | Less than 30 hours |
| Sophomore | 30 or more hours but less than 60 |
| Junior | 60 or more hours but less than 90 |
| Senior | 90 or more hours |

## Withdrawal from the University

Withdrawing from the University of Arkansas means withdrawing from all classes that have not been completed up to that time. A student who leaves the university voluntarily before the end of the fall or spring semester must withdraw from all classes on the student registration system or notify the Office of the Registrar in writing. Withdrawal may occur anytime during the semester through the last day of classes. Withdrawal deadlines for summer sessions are listed on the semester calendars located on the Office of the Registrar's website (http:// registrar.uark.edu/). Students who do not withdraw officially from a class they fail to complete will receive an "F" in that class. Students with holds on their registration should contact the Office of the Registrar for assistance in processing their official withdrawal from the university.

A currently enrolled student who has registered during the advance registration period should make any necessary or desired schedule adjustments such as adding or dropping courses or changing course sections during the schedule-adjustment period of the same semester. Students who drop classes will have their fees adjusted according to Fayetteville Policies and Procedures 330.0 - Tuition and Fee Adjustment Policy for Dropping Classes (https://vcfa.uark.edu/policies/fayetteville/ avcf/3300.php). Drops and withdrawals are two different functions. In a drop process, the student remains enrolled. The result of the withdrawal process is that the student is no longer enrolled for the term. Fee adjustment deadlines for an official withdrawal are noted in Fayetteville Policies and Procedures 518.0 - Tuition and Fee Adjustment Policy for Official Withdrawal (https://vcfa.uark.edu/policies/fayetteville/ avcf/5180.php).

## Fee and Cost Estimates

Educational expenses will vary according to a student's course of study, personal needs, and place of residence. Student progress or general course of action in pursuit of higher education at the University of Arkansas is determined during the application and acceptance process. At the conclusion of the application and acceptance process, the progress or general course of action for each student will be assigned a category, called a career.

The career categories at the University of Arkansas - in order of magnitude by the cost of tuition per credit hour - are Agricultural \& Food Law, Law, Graduate, and Undergraduate. Students concurrently enrolled in multiple careers will be assigned one primary career for all tuition billing purposes, called a billing career, based on the order of magnitude listed above. The Office of the Registrar is responsible for assigning the appropriate billing career. Students pursing an Undergraduate career will also be classified by undergraduate program.

The undergraduate programs of the Walton College of Business, College of Engineering, College of Education and Health Professions' plan of Nursing, and the Fay Jones School of Architecture and Design's undergraduate program of Architecture have specific tuition rates, while all other undergraduate programs are the Undergraduate tuition rate. Similar to career, although a student may be concurrently enrolled in multiple undergraduate programs, the Office of the Registrar will assign
each student only one primary undergraduate program for tuition billing purposes based on the order of magnitude by the cost of tuition per credit hour. All fees, charges, and costs quoted in this catalog are subject to change without notice. A survey tool for tuition and fee estimation is available at the Treasurer's website (http://treasurer.uark.edu/Tuition.asp? pagestate=Estimate).

Financial obligations to the University of Arkansas must be satisfied by the established deadlines. E-check (electronic check) and credit/debit payments are made online on UAConnect (http://uaconnect.uark.edu). If you pay with a debit or credit card, there is a convenience fee charged of 1.8 percent.

Acceptance of payment for fees does not imply academic acceptance to the university.

## Estimated Expenses

Estimated Necessary Expenses for an Academic Year
Estimates of necessary expenses listed below are for the 2022-23 academic year for a typical undergraduate student taking 30 credit hours per academic year at the University of Arkansas.

| Name | Undergraduate <br> Resident | Undergraduate Non- <br> Resident |
| :--- | :--- | :--- |
| Tuition* $^{\text {R }}$ | $\$ 7,666.00$ | $\$ 26,690.00$ |
| University Fees** | $\$ 2,082.00$ | $\$ 2,082.00$ |
| Books | $\$ 1,154.00$ | $\$ 1,154.00$ |
| Personal Expenses | $\$ 3,176.00$ | $\$ 3,176.00$ |
| Transportation | $\$ 2,640.00$ | $\$ 2,640.00$ |
| Room |  |  |
| Board*** $^{* * *}$ | $\$ 8,366.00$ | $\$ 8,366.00$ |
| TOTAL*** $^{* * *}$ | $\$ 4,924.00$ | $\$ 4,924.00$ |
|  | $\$ 30,008.00$ | $\$ 49,032.00$ |

* The standard undergraduate in-state tuition rate is $\$ 255.51$ per credit hour. Students enrolled in College of Business courses are charged $\$ 339.83$ per credit hour in-state tuition. Students in the School of Architecture and Design are charged $\$ 304.407$ per credit hour in-state tuition. Students enrolled in College of Engineering courses are charged $\$ 309.17$ per credit hour in-state tuition. Nursing students are charged $\$ 329.22$ per credit hour instate tuition.
** University fees per year include the following student-initiated and student-approved fees:
- Student Activity fee calculated at $\$ 2.78 /$ credit hour $-\$ 87.60$
- Student Health fee, calculated at $\$ 7.47 /$ credit hour - $\$ 230.70$
- Media fee, calculated at $\$ 0.90 /$ credit hour - $\$ 27.00$
- Transit fee, calculated at $\$ 3.15 /$ credit hour - $\$ 108.60$
- Network Infrastructure and Data Systems fee at $\$ 12.10 /$ credit hour - \$363.00
- Facilities Fee, calculated at $\$ 23.35 /$ credit hour — $\$ 700.50$
- College of Arts and Sciences Fee at $\$ 14.41 /$ credit hour \$432.30
- Library Fee, calculated at $\$ 4.41 /$ credit hour - $\$ 132.30$
*** Weighted average expenses for living in a residence hall, double occupancy, with an unlimited meal plan. Actual room and board fees vary.
**** Budget amounts were adjusted for rounding to accommodate UAConnect budgetary rules.

When paying tuition, room and board, and associated fees, anticipated financial aid for a current semester may be deducted when it is listed as anticipated aid on the student's account. Students receiving financial aid are strongly encouraged to have sufficient personal funds available to purchase books and to meet necessary expenses for at least one month at the start of school as some aid funds may not be available for disbursement.

The latest information regarding costs and other aspects of university life may be obtained by calling or writing the Office of Admissions, 200 Hunt Hall, University of Arkansas, Fayetteville, AR 72701. In Arkansas call 1-800-377-8632; from outside of Arkansas call 479-575-5346.

## Fee Adjustments

A currently enrolled student who has registered during the advance registration period should make any necessary or desired schedule adjustments such as adding or dropping courses or changing course sections during the schedule-adjustment period of the same semester. Students who drop classes will have their fees adjusted according to Fayetteville Policies and Procedures 330.0 - Tuition and Fee Adjustment Policy for Dropping Classes (https://vcfa.uark.edu/policies/fayetteville/ avcf/3300.php). Drops and withdrawals are two different functions. In a drop process, the student remains enrolled. The result of the withdrawal process is that the student is no longer enrolled for the term. Fee adjustment deadlines for an official withdrawal are noted in Fayetteville Policies and Procedures 518.0 - Tuition and Fee Adjustment Policy for Official Withdrawal (https://vcfa.uark.edu/policies/fayetteville/ avcf/5180.php).

## Student Invoices

Students who pre-register for a semester will be invoiced approximately six weeks prior to the first day of classes. The Treasurer's Office will send out an email notification when the student invoices are available on UAConnect. Students should log into UAConnect (http:// uaconnect.uark.edu), navigate to the Treasurer's Office tile, and click the 'Student Invoice' link.

## Late Fees

Students are required to pay all charges by the posted payment deadline. Students who fail to pay all charges or who fail to execute an installment payment plan by the deadline may be assessed a late payment fee equal to the outstanding balance, not to exceed $\$ 75.00$.

Any student with an outstanding balance, to include registration-related fees and/or housing charges, by the last payment deadline will be assessed an additional late payment fee equal to the outstanding balance, not to exceed $\$ 75.00$.

The late fee will not be waived because an invoice was not received.

## Disbursement of Refunds

Disbursement of refunds due to overpayments by scholarships, loans, and/or grants will begin approximately five days prior to the start of classes.

The University of Arkansas has partnered with BankMobile to deliver financial aid and other school refunds to the University of Arkansas
students. For more information visit the BankMobile page (http:// bankmobiledisbursements.com/refundchoicessso/).

## Addresses

Students may create a check address, which will be used specifically for overpayment checks. This address may be created in addition to the local and permanent addresses. If a check address is not created, the default address will be the permanent address. The student may change their address in the Student Center section of UAConnect (https:// uaconnect.uark.edu/).

## Military Service

## Students Called into Active Military Service

When a student or student's spouse is activated for full-time military service and is required to cease attending the University of Arkansas without completing and receiving a grade in one or more courses, they shall receive compensation for the resulting monetary loss as provided by Fayetteville Policy 504.2. The student must cease attendance because 1) the student is activated or deployed by the military or 2) the student's spouse is activated or deployed by the military and the student or student's spouse has dependent children residing in the household.

To be eligible for the compensation, the student must provide, prior to activation or deployment for military service, an original or official copy of the military activation or deployment orders to the university's Veterans Resource and Information Center. A student whose spouse is a service member shall provide proof of registration with the Defense Enrollment Eligibility Reporting System (DEERS) of the Department of the Defense that establishes that dependent children reside in the household of the student and the service member.

Upon leaving the University of Arkansas because of active duty or deployment, the student may choose one of three compensatory options. The student may officially withdraw and receive full adjustment and refund of tuition and non-consumable fees for the term involved; the student can remain enrolled and arrange for a mark of "Incomplete" for each class and finish the courses 12 months after deactivation; or the student may receive free tuition and fees for one semester after deactivation. For more detailed information, read Fayetteville Policy 504.2 (http://vcfa.uark.edu/ policies/fayetteville/avcf/5042.php).

## Other General Fees

## Fee Information

See the following sections below

- General Fees
- Program and Service Fees
- College and Course Specific Fees
- Teaching Equipment and Laboratory Enhancement Fees
- Fee Adjustments
- Students Called Into Military Service
- Senior Citizen Tuition and Fees Waiver
- Other General Fees


## General Fees*

| Title | Description | Amount** |
| :---: | :---: | :---: |
| Facilities Fee | Provides support dedicated specifically to campus facilities needs, including major projects and deferred maintenance. | \$23.35 |
| Media Fee | The university's student publications, specifically the Arkansas Traveler newspaper and the Razorback yearbook, are partially funded by the media fee. Students reserving a copy are provided with a Razorback yearbook. | \$0.90 |
| Network Infrastructure And Data Systems Fee | Provides support for the development and operation of the campus network, including electronic equipment, servers with software, and cabling. The network systems serve computer labs, academic and administrative buildings, residence halls and off-campus access facilities. Data systems will enable Web-based access to the university's information systems for students, faculty, and staff. Also provides support for upgrades and replacement of the student information system. | \$12.10 |
| Student Activity Fee | Empowers the Associated Student Government (ASG) to make funding available to over 300 Registered Student Organizations and program activities on campus to develop lasting friendships and leadership abilities and provide all students with a unique opportunity to participate in cultural social, educational, and recreational events throughout the year. | \$2.92 |
| Student Health Fee | Covers wellness and health promotion educational programs and healthy student behavior programs to maintain health and safety. Covers individual consultations with a certified wellness coach, consultation with a registered dietician and consultation with an orthopedic specialist from the community. Student Health Fee also covers sexual assault counseling, prevention and advocacy services. The Student Health Fee als covers several mental health services, such as 24hour mental health emergency care, the cost for two intake assessments with a mental health clinician per semester, most group counseling sessions, case management/referral services, psychiatric nurse consultations, refill requests and outreach/advocacy. | \$7.69 |
| Transit Fee | Helps fund the Razorback Bus Transit System, which services the campus and neighboring community year round. | \$3.62 |

Library Fee
Provides additional support for library \$4.41 materials acquisition

* Assessed each academic semester for which the student is enrolled: fall, spring, and summer
** Per Credit Hour


## Program/Service Specific Fees

Some individual services at the university assess fees related to their respective service, such as the cost of administering national tests, late payments or choosing to park on campus.

## Program/Service

Specific Fees
The Arkansas Non-Resident Tuition Scholarship
Award Fee will be assessed for undergraduate nonresidents (including transfer students) and international students who enter after the summer of 2013 and who are receiving the Non-Resident Tuition Award. The fee will be $50,70,80$ or 90 percent of the difference between the in-state and out-of-state tuition per semester as long as students are receiving the award. Non-resident and international students receiving the award prior to the 2011-12 academic year are exempt as are non-resident students who are not receiving the award. To view eligibility requirements, please view the Academic Scholarship Office website at http://scholarships.uark.edu/nrta/index.php (http:// scholarships.uark.edu/nrta/)

| Autism Support Program Fee | $\$ 5,000.00 /$ <br> semester |
| :--- | :--- |
| English Language Placement Test (ELPT) | $\$ 25.00$ |
| CLEP Registration Fee | $\$ 35.00$ |
| Accuplacer Fee | $\$ 50.00$ |
| EMPOWER Program Fee | $\$ 5,000 /$ semester |
| Global Campus Fee | $\$ 30.00$ |
| Global Campus Extension Fee <br> - Premium Online Proctored Exam Fees |  |
| - "Take It Now" Fee | $\$ 30.00$ |
| - "Take It Soon" Fee | $\$ 8.75$ |
| - Online Proctoring Fee for Credit by Exam | $\$ 5.00$ |
| Graduation fees: | $\$ 25.00$ |
| - Baccalaureate Degree | $\$ 100.00$ |
| - Certificate | $\$ 25.00$ |
| - Graduation Application Late Fee | $\$ 25.00$ |
| Greek Life Assessment | $\$ 25.00$ |
| I.D. Card | $\$ 30.00$ |
| - Authentication Fee (exclusively online students) | $\$ 10.00$ |
| - First card (exclusively online students) | $\$ 00$ |


| - Each replacement card | $\$ 24.00$ |
| :--- | :--- |
| IELTS Registration Fee | $\$ 250.00$ |
| Installment Payment Plan | $\$ 40.00$ |
| International Students <br> - International student (non-immigrant) application <br> fee | $\$ 60.00$ |

- International student per semester service fee $\$ 109.00$ (non-immigrants)
- International Visiting Student Program Fee \$325.00
- Mandatory Health Insurance \$2,358/year
- Sponsored Student Management Fee \$375.00
- Visiting Student Custom Program Fee - Level $1 \quad \$ 100.00$
- Visiting Student Custom Program Fee - Level 2 \$600.00

Jean Tyson Child Development Study Center

- Application Fee one-time per child $\$ 200.00$
- Materials per semester \$150.00
- Infants/1-2 years old per month (full-time) \$1,020.00
- 2 to 3 years old, per month (full-time) $\$ 973.00$
- 3 to 5 years old, per month (full-time) $\$ 942.00$
- 3 to 5 years old, per month (part-time) \$577.00
- Summer Camp Participants, 1st to 4th-Grade \$275.00 Students, per week (full-time)

Late payment:

- On Sept. 30 or Feb. 28 if balance has not been $\$ 75.00$ paid
- Additional fee at Nov. 30, April 30, and July 31 for
fall, spring, and summer, respectively, if payment
has not been made has not been made

| Late Registration Fee - Prior to Census Day | $\$ 25.00$ |
| :--- | :---: |
| Late Registration Fee - After Census Day | $\$ 50.00$ |
| Late Test Registration Fee | $\$ 20.00$ |
| New student orientation fees: |  |
| - First Year Experience (New Admits Only) | $\$ 55.00$ |
| - Students (New Admits Only) | $\$ 95.00$ |
| - Parents | $\$ 50.00$ |

Online Student Orientation: Undergraduate Online $\$ 50.00$
Students (New Admits Only)
Online Facilities Fee (exclusively only students per \$2.00 credit hour)
Parking Permit (per vehicle)

| - Commuter |  | \$25.00 | International Study <br> Fee (Architecture and |  | \$5,254.00* |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| - Student |  | \$115.00 | Landscape Architecture Academic Plans) |  |  |
| - Resident Reserved |  | \$745.00 | Studio Materials Fee | FJAD 6906, FJAD 6916 | \$25/credit hour |
| - Parking Garage Reserved |  | \$1,020.00 | COLLEGE OF ARTS AND SCIENCES |  | \$5.24/semester |
| - Motorcycle |  | \$77.00 | Certificate in Business French | FREN 4333, FREN 4433 | \$100/semester |
| - Scooter |  | \$77.00 | Expendable ARTS and GDES Consumables and Equipment Fee | All ARTS, GDES, | \$83.74/credit hour |
| - Scooter Reserved |  | \$230.00 |  | ARHS and ARED Consumables, |  |
| Proctoring Fee |  | \$0.00 |  | Equipment and Studio Fee |  |
| Professional Liability Insurance (non-refundable) |  | \$7.45/course | Expendable MUAC, MUED and MUEN Supplies and Instrument Repair/ Maintenance | All MUAC, MUED and | \$5.24/credit hour |
| Professional Liability Insurance-Nurse Practitioners (non-refundable) |  | \$23.88/course |  | MUEN courses |  |
| Residence Hall nonrefundable application fee |  | \$40.00 |  |  |  |
| Residual ACT |  | \$90.00 |  |  |  |
| Residual ACT Plus Writing |  | \$0.00 | Expendable THTR | All THTR courses | \$20.00/credit hour |
| - Study Abroad Service Fee - Tier 1 |  | \$100.00/program | Supplies and Materials (all THTR courses) |  |  |
| - Study Abroad Service Fee - Tier 2 |  | \$200.00/program | Fifth-year Internship Fee (M.A.T.) | ARED 476V, <br> MUED 451V, | \$100.00/semester |
| - Study Abroad Service Fee - Tier 3 |  | \$300.00/program |  | MUED 452V |  |
| Teacher Education Application Fee |  | \$0.00/application | Lab coat fee for Biology and Chemistry | CHEM 1051L, CHEM 1101L, | \$28.00/course |
| Tests |  |  |  | CHEM 1121L, |  |
| Career Exploration and Strong Interest Inventory Assessment Test (UNIV 1401) |  | \$10.00/course |  | CHEM 1121M, CHEM 1201L, |  |
| - COEHP - Health Sciences Reasoning Test |  | \$25.00 |  | CHEM 1221L, CHEM 2261L, |  |
| - Miller Analogies Test (MAT) |  | \$85.00 |  | CHEM 2611L, CHEM 3451L |  |
| - Spoken Language Placement Test (SLPT) |  | \$80.00 |  | CHEM 3512L, |  |
|  |  |  |  | CHEM 3601L, |  |
| - TOEFL |  | \$70.00 |  | CHEM 3602M, CHEM 3611L, |  |
| Transcript Fee - Official Copy |  | \$10.00 |  | CHEM 3612M, |  |
| Undergraduate application for resident admission |  | \$40.00 |  | CHEM 3702L, |  |
| Undergraduate application fee for non-residents |  | \$55.00 |  | CHEM 3712L, |  |
| Withdrawal from the University fee |  | \$45.00 |  | CHEM 4153L, CHEM <br> 4153M, CHEM 4211L, |  |
| College/Course Specific Fees |  |  |  | CHEM 4723, <br> CHEM 4853 , |  |
| Some courses require fees that offset additional costs inherent in the course, such as lab fees, travel expenses or internship fees. |  |  |  | BIOL 1541L, BIOL 1541M, |  |
| College | Course Sp | cific Fees |  | BIOL 1584, BIOL 2011L |  |
| SCHOOL OF |  |  |  | BIOL 2011M, |  |
| ARCHITECTURE AND |  |  |  | BIOL 2211L, |  |
| Interior Design Fee | IDES 1035, IDES 1045, \$ IDES 2804, IDES 2814, IDES 3805, IDES 3815, IDES 4805, IDES 4815 | 00/credit hour |  | BIOL 2441L, <br> BIOL 2321L, and BIOL 2531L |  |
|  |  |  | One-on-one instruction and collaborative | All MUAP courses | \$50.00/credit hour |
| Interior Design Travel Fee |  | .00/academic plan | pianists for lessons, studio classes and performances |  |  |


| Program/Excursion Fee | GEOS 437V, <br> GEOS 537V | \$200.00 |
| :---: | :---: | :---: |
| COLLEGE OF BUSINESS |  |  |
| Computer Competency | ISYS 1120 | \$58.50/semester |
| COLLEGE OF EDUCATION AND HEALTH PROFESSIONS |  |  |
| Adult and Lifelong <br> Learning Seminar Fee | ADLL 6173 | \$23.00/credit hour |
| Athletic Training Clinical Rotation Fee | ATTR 5232, <br> ATTR 5242, <br> ATTR 5262, <br> ATTR 5272 | \$11.25/course |
| Athletic Training Drug Test Fee | ATTR 5313 | \$0.00/semester |
| B.S.E. Fourth-year Student Teaching Fee | CIED 4173, <br> CATE 406X, CIED 4286, PHED 407V, <br> SPED 4538, <br> SPED 4568 | \$250.00/semester |
| CDIS Applied Education Fee | CDIS 3233, CDIS 4183 | \$100.00/course |
| Clinical Fee Communication Disorders | CDIS 4003, CDIS 5183, CDIS 5283, CDIS 5383 | \$100/semester |
| Counseling Practicum Fee | CNED 5343, CNED 6711 | \$23.00/credit hour |
| Counseling Internship Fee | CNED 574V, <br> CNED 674V section 1 | \$23.00/credit hour |
| Creative Arts Guest Artist Fee | OCTH 5541 | \$50.00 |
| Curriculum Instruction <br> Education Internship Fee | CIED 1013, CIED 3013, CIED 3053, CIED 4131, CIED 4363, CIED 4423, CIED 3113, CIED 4113, CIED 3133, CIED 3123, \#CIED 4173, \#CIED 528V, CIED 4153, CIED 3033, \#CIED 3143, CIED \#\#3103, CATE 406X, CATE 5016, CIED 508V, CIED 3453, CIED 4183, CIED 4533, EDST 3913, EDST 3923, EDST 4933, SPED 4413, SPED 4453, SPED 4538, SPED 4568, SPED 4473, SPED 4483, SEED 3282, CIED 4286 | \$20.00/credit hour |


| Equipment and Supplies Fee-Outdoor Adventure Leadership | RESM 4023, RESM 5023 | \$75.00/credit hour |
| :---: | :---: | :---: |
| Equipment and Supplies Fee-Teaching and Leading Outdoor Recreation and Experiential Activities | PHED 3003 | \$5.00/course |
| Equipment and <br> Supplies Fee- <br> Recreation and Natural <br> Resources | RESM 1023 | \$0.00/course |
| Equipment, Instruction and Certification FeeBeginning Scuba Diving | PEAC 1831 | \$125.00/credit hour |
| Fifth-year Internship Fee (M.A.T.) | CIED 508V, CIED 528V, CATE 5016, SPED 532V | \$250.00/semester |
| First Responder Special Course Fee | PBHL 3633 | \$35.00/credit hour |
| Internship Fee-Health, Human Performance and Recreation | EXSC 4903, PBHL 4043, RESM 440V | \$5.00/semester |
| Internship Fee-Student Teaching Supervision | PHED 407V | \$5.00/semester |
| Internship for <br> Communication Disorders | CDIS 5663 | \$150.00/semester |
| Internship Program in Education Leadership and support for Leadership seminars | EDLE 574V, <br> EDLE 674V | \$20.00/semester |
| Internship Supervision <br> Liability and <br> Background Check |  |  |
| - Exercise Science (non-refundable) | EXSC 4903 | \$14/course |
| - Public Health (nonrefundable) | PBHL 4043 | \$14/course |
| - Recreation and Sports Management (nonrefundable) | RESM 440V | \$14/course |
| Literacy Clinic |  |  |
| - Methodology Fee | CIED 3113, <br> CIED 3453, CIED 4183, <br> CIED 5013, CIED 5073, <br> EDST 3333, CIED 4533 | \$15/course |
| - Beginning Assessment | CIED 4123, CIED 4133, \$20/course CIED 5173 |  |
| Nursing |  |  |
| - B.S.N. Test Fee Second semester Sophomore year |  | \$310.00/semester |


| - B.S.N. Test Fee First and second semester Junior year, First semester senior year |  | \$310.00/semester |
| :---: | :---: | :---: |
| - L.P.N.-B.S.N. Clinical Fee | NURS 3111, <br> NURS 3782, <br> NURS 4073, <br> NURS 4143, <br> NURS 4212, <br> NURS 4552 | \$145.00/credit hour |
| - L.P.N.-B.S.N. Test Fee - First four semesters |  | \$310.00/semester |
| - Nursing Clinical Fee | NURS 3321L, NURS 3424, NURS 3644, NURS 3752, NURS 4092, NURS 4164, NURS 4252, NURS 4452, NURS 4613, NURS 4722 | \$145.00/credit hour |
| Off-Campus Practicum: Clinical Site | CDIS 5663 | \$150.00/semester |
| Off-Campus Internship: Clinical Site | CDIS 5443 | \$150.00/semester |
| COLLEGE OF ENGINEERING |  |  |
| Course fee, computer aided design (CAD) competency | MEEG 2100 | \$50.00/semester |
| Data Science course fee |  | \$37.40/semester |
| Distance technology fee | Operations Managment | \$50.00/credit hour |

## Teaching Equipment and Laboratory

 Enhancement FeesThese fees provide and maintain state-of-the-art classroom equipment and instructional laboratory equipment. These fees vary, based upon the student's college of enrollment.

During the regular fall, spring and summer academic semesters, these fees are assessed on a per credit hour basis (see chart below).

| College or School | Per Credit Hour Fee |
| :--- | :--- |
| Bumpers College Agricultural, Food <br> and Life Sciences | $\$ 25.70$ |
| Fay Jones School of Architecture | $\$ 32.60$ |
| Fulbright College of Arts and <br> Sciences | $\$ 14.41$ |
| Walton College of Business | $\$ 23.50$ |


| College of Education and Health <br> Professions | $\$ 17.04$ |
| :--- | ---: |
| College of Engineering | $\$ 35.87$ |

## Other General Fees

Checks tendered to the university are deposited immediately. The university does not accept postdated checks. Checks returned for "insufficient funds" (NSF checks) are generally presented for payment only once. Each check returned by a bank for any reason will be assessed a returned check fee. The university may, at its discretion, verify available bank funds for any checks written for payment of indebtedness before accepting a check.

The University of Arkansas reserves the right to withhold transcripts or priority registration privileges, to refuse registration, and to withhold diplomas for students or former students who have not fulfilled their financial obligations to the university. These services may also be denied students or former students who fail to comply with the rules governing the audit of student organization accounts or to return property entrusted to them.

Requests for exceptions to university's fees, charges, and refund policies must be made in writing. Instructions for submitting requests for exceptions to the various fees, charges, and refund policies of the university may be obtained as follows:

- For residence life and dining services fees, charges, and refund policies contact University Housing Assistant Director for Business, housing@uark.edu or (479) 575-3951.
- For parking services fees, charges, and refund policies contact: Parking and Transit, Administrative Services Building, 155 Razorback Road, (479) 575-3507.
- For other fees, charges, and refunds, contact the Treasurer's Office, 214 Arkansas Union, Attention: Treasurer, (479) 575-5651.

Students receiving financial aid are strongly encouraged to have sufficient personal funds available to purchase books and to meet necessary expenses for at least one month at the start of school as some aid funds may not be available for disbursement.

Students are allowed to have automobiles at the university, although parking is quite limited. There is a parking permit and registration fee for each vehicle, varying in cost depending upon the parking option selected.

## Resident Status

## Student Residence Status for Tuition and Fee Purposes

Board Policy 520.8 (May 26, 2022, revised)

## Determination of Residence Status

## I. Purpose

The purpose of this policy is to establish guidelines to classify students for the purpose of assessing tuition and fees as either "instate" or "out-of-state." These guidelines seek to balance fairness and equity to the students enrolled at campuses within the University of Arkansas System and to the citizens of Arkansas, who support the educational services provided by the University.
II. Initial Classifications; Definitions and Criteria
a. Pursuant to this policy, a student shall be admitted to the University in an "in-state" or "out-of-state" status for tuition and fee purposes. Except as otherwise provided under this policy or
state law, to be classified as "in-state" for tuition and fee purposes at the time of admission, a student must have established a bona fide domicile in Arkansas and must have resided continuously in this state in that bona fide domiciliary status for at least six consecutive months prior to submission of the student's application for admission.
b. A bona fide domicile is a home of apparent true, fixed, and permanent nature, a place of actual residing for all purposes of living that may be distinguished from a temporary sojourn in this state as a student. The person claiming domicile in Arkansas must provide evidence of permanent connection with the State of Arkansas and demonstrate the expectation of remaining in this state beyond graduation. For purposes of implementing this policy, each campus shall provide standards that will be applied in making the determination of residence.
c. Except as otherwise provided under this policy, the domicile of an adult student (18 years of age or older, unmarried and a nondependent as described below) or emancipated minor student shall be based on the student's own domicile.
d. Except as otherwise provided under this policy, the domicile of an unemancipated minor student (less than 18 years of age) or an unmarried dependent who has not attained the age of 24 shall be the domicile of the student's parents or surviving parent, or such other person legally standing in the place of a parent to the student with whom the student in fact makes a home, and who has been making substantial contributions to the support of the student for at least six consecutive months prior to the term or semester for which the tuition and fees are paid.
e. A student who cannot satisfy the criteria for Arkansas domicile will be classified as an "out-of-state" student and will pay tuition and fees accordingly.
f. A student holding a temporary visa will be classified as a foreign student and an "out-of-state" student for purposes of tuition and fees. A student who has been granted permanent visa and has been domiciled in Arkansas for six consecutive months following receipt of the permanent visa shall be classified as an "in state" student for tuition purposes.
g. The six-month period required in paragraph II(A) of this policy shall be waived for persons, their spouses, and their unmarried children (who have not yet attained the age of 24) who move to Arkansas ${ }^{1}$ with attendance at the University only a by-product of the primary purpose of establishing domicile in this state.
h. An unmarried student who has not reached the age of 24 years and who has one parent residing in Arkansas (for at least six consecutive months immediately prior to the beginning of the term or semester in which the tuition and fees are to be paid) shall be considered an "in-state" student for tuition and fee purposes, even if that student resided outside the state with the other parent before coming to Arkansas to attend the University.
i. Marriage is recognized as emancipation for any minor student.
j. The spouse of a person continuously domiciled in Arkansas (for at least six consecutive months immediately prior to the beginning of the term or semester in which the tuition and fees are to be paid) upon request shall be classified as "in-state" for tuition and fee purposes.

## III. Reclassifications

a. The initial classification of a student will not prejudice a different classification for following terms or semesters. However, a student's prior domicile is assumed to continue until the student
clearly establishes a bona fide domicile in Arkansas (see 4Procedures below).
b. A student previously classified as "out-of-state" may be reclassified as "in-state" for tuition and fee purposes if the student has established a bona fide domicile in Arkansas and has resided continuously in this state in that bona fide domiciliary status for at least six consecutive months prior to seeking reclassification by the University.
i. In order for an adult student or an emancipated minor student to establish a bona fide domicile in Arkansas for tuition purposes, the student must have left the parental home, must have established in this state a home of a permanent character as manifested objectively by good faith acts, and must have the expectation of remaining in this state beyond graduation.
c. The single fact of presence in Arkansas for at least six months of attendance as a student enrolled in the University of Arkansas, or any other educational institution, neither constitutes nor necessarily precludes reclassification as one domiciled in Arkansas but will be a factor to be considered.

## IV. Procedures

a. Each student is responsible for registering under a proper classification for tuition and fee purposes. It is the duty of the student to bring any question about residency classification status to the attention of the campus classification review officer in a timely fashion in order that the question may be settled before registration.
b. A student seeking "in-state" status shall have the burden of establishing that the requirements and standards set out in this policy have been satisfied. Persuasive evidence to that effect must be presented in writing and verified under oath by the student. Mere claims of local domicile and duration of stay are of little weight. A student who knowingly gives erroneous information in an attempt to establish "in-state" status for tuition purposes may be subject to discipline, up to and including dismissal from the University.
c. All disputed classifications for student tuition and fee purposes, whether at initial enrollment or subsequent enrollments, and all disputed reclassifications will be decided initially on each campus by a classification review officer designated by each Chancellor.
d. The Chancellor of each campus will designate a campus classification appeal officer to receive petitions from decisions made by the campus classification review officer. Each campus classification appeal officer may, in his/her discretion, make investigations, receive evidence, and conduct informal hearings. After considering the case, the campus classification appeal officer will render a decision and notify the affected student of the decision in writing. Any decision of the campus classification appeal officer may be appealed to the Vice President for Academic Affairs of the University of Arkansas System, who shall recommend final disposition to the President of the University.
e. Written notice of the appeals procedure will be provided to each student raising a question about the student's status with the campus residency classification review officer.
f. Determination of domicile will be based on a review of all pertinent facts, evidence, and circumstances which collectively show, in an objective and clear manner, the actual domicile of the student.

1 For the purpose of this policy, dependents are the spouse and unmarried children who are legal dependents as defined by the IRS.

## Reclassification Deadlines

Students who have established a bona fide domicile in Arkansas following initial classification as a non-resident must request reclassification if they want their status recognized for fee purposes. Applications and appropriate documentation must be received by the Office of the Registrar no later than the fifth class day (second class day of a summer session) of the term for which in-state fee assessment is requested. Applications received after the deadline will be considered for the next term. All fees are to be paid by published due dates. Students who receive a favorable decision after payment will be provided a refund of out-of-state fees paid. Please direct questions about residence classification review procedures to the Office of the Registrar, 146 Silas H. Hunt Hall.

## Resident Status of Native Americans

(Board Policy 520.1, "Waiver of Non-Resident Tuition for Native Americans.")

Native American people in other states belonging to tribes that formerly lived in Arkansas before relocation, and whose names are on the rolls in tribal headquarters, shall be classified as in-state students of Arkansas for tuition and fee purposes, on all campuses of the University of Arkansas. Tribes so identified include the Caddo, Cherokee, Chickasaw, Choctaw, Creek, Delaware, Kickapoo, Osage, Peoria, Quapaw, Shawnee, and Tunica.

## Resident Status of Members of the Armed Forces and Their Dependents

(Board Policy 520.7, "Fees for Members of Armed Forces and Dependents.")

For the purpose of tuition and fees applicable for all programs of study, including distance learning programs, effective July 1, 2017, all campuses of the University of Arkansas System shall classify a student as in-state or resident, if the student meets any of the following criteria regardless of his or her residence:

1. A veteran who was honorably discharged or released from a period of not less than ninety (90) days of active duty in the United States Armed Forces within three (3) years before the date of enrollment in a program of study;
2. A dependent ${ }^{1}$ or spouse of a veteran under Paragraph 1.
3. A member of the armed forces.
4. A spouse of a member of the armed forces.
5. A Reserve Officers' Training Corps cadet who has an executed armed forces service contract.
6. A dependent of a member of the active duty armed forces, when the member of the armed forces:
a. is stationed in the State of Arkansas pursuant to permanent change of station (PCS) military orders;
b. is continuously domiciled in Arkansas for at least six consecutive months before entering active military service and who maintains Arkansas as the permanent home of record while on active military duty, or
c. demonstrates a change of bona fide domicile from another state to Arkansas at least 12 consecutive months prior to separation, discharge, or retirement from active military duty. This provision is
forfeited if the military person does not return to Arkansas within 36 months after separation, discharge, or retirement from active duty.
7. A veteran using educational assistance under either Chapter 30 (Montgomery G.I. Bill-Active Duty Program) or Chapter 33 (Post-9/11 G.I. Bill), of Title 38 of the United States Code, who lives in the State of Arkansas while attending a school located in the State of Arkansas (regardless of his/her formal state of residence) and enrolls in the school within three years of discharge or release from a period of active duty service of 90 days or more.
8. Anyone using transferred Post-9/11 G.I. Bill benefits (38 U.S.C. §3319) who lives in the State of Arkansas while attending a school located in the State of Arkansas (regardless of his/her formal state of residence) and enrolls in the school within three years of the transferor's discharge or release from a period of active duty service of 90 days or more.
9. Anyone described in paragraphs 7 and 8 while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same school. The person so described must have enrolled in the school prior to the expiration of the three year period following discharge or release as described in paragraphs 7 and 8 and must be using educational benefits under either chapter 30 or chapter 33, of title 38 of the United States Code.
10. Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. §§3311(b)(9)) who lives in the State of Arkansas while attending a school located in the State of Arkansas (regardless of his/her formal state of residence).
11. Anyone using transferred Post $9 / 11$ G.I. Bill benefits ( 38 U.S.C. § 3319) who lives in Arkansas while attending a school located in Arkansas (regardless of his/her formal state of residence) and the transferor is a member of the uniformed service who is serving on active duty..
12. A member of the armed forces or "covered individual" as identified in Section 702 of the Veterans Access, Choice and Accountability Act of 2014.

This system-wide policy and procedure has been amended as necessary for compliance with the requirements of 38 U.S.C. 3679 , as amended, and Ark. Code Ann. § 6-60-205.
${ }^{1}$ For the purpose of this policy, dependents are unmarried children who are legal dependents of the military person as defined by the IRS.

## Resident Status of Students from Texarkana, Texas, and Bowie County, Texas <br> (Board Policy 520.10)

In accordance with the reciprocity agreement described in H.C.R. 32, signed by the governor of Arkansas on February 12, 1965, Board Policy 520.10 states, "Residents of Texarkana, Texas, and Bowie County, Texas, will be classified as in-state students for university fee purposes at the University of Arkansas."

## Room and Board

Campus Housing
(Rates are subject to change)
Single freshmen under 21 years of age are required to live in University of Arkansas residence halls or with their parents, unless permission to live
off-campus has been obtained through University Housing. Permission to reside off-campus is granted on a semester basis and must be obtained prior to enrolling or prior to the semester in which off-campus residency is desired.

Specific questions concerning on-campus housing may be directed to University Housing at 479-575-3951, by email at housing@uark.edu or by visiting the University Housing website (http://housing.uark.edu/).

Summer rates for a room in a university residence hall during summer sessions are available through the Housing office. Charges start on the requested move-in day and run through the date of check-out.

## Dining

Specific questions concerning on-campus meal plans may be directed to University Housing 479-575-3951 or visit the Dining on Campus website (http://www.dineoncampus.com/razorbacks/).

## Fraternities and Sororities

Specific questions concerning sorority and fraternity living may be directed to the Office of Greek Affairs 479-575-5001.

## Off-Campus Housing

Students eligible to live off-campus may contact local real estate offices for rental information or check the Off-Campus Housing website (http:// offcampushousing.uark.edu/).

## Senior Citizens

## Waiver of Tuition and Fees for Senior Citizens

Arkansas residents who are 60 years of age or older and show proper proof of age may choose to have tuition and fees waived for on-campus courses under the senior citizen waiver of fees. Admission and enrollment under these conditions is open only on a "space available" basis in existing classes, and students choosing to use this waiver may not register until just prior to the beginning of the term.

## Tuition Fees

Students classified as "in-state" for fee payment purposes are assessed tuition. Students classified as "out-of-state" for fee payment purposes are assessed additional non-resident tuition.

Official policies of the University of Arkansas Board of Trustees provide the basis for classifying students as either "in-state" or "out-of-state" for purposes of paying student fees. Board policies relating to residency status for fee payment purposes are included at the end of this chapter of the catalog. Out-of-state students who question their residency classification are encouraged to contact the Registrar's Office, 146 Silas H. Hunt Hall, for more information about residency classification review procedures.

The Arkansan Non-Resident Tuition Scholarship Award Fee will be assessed for undergraduate non-residents (including transfer students) and international students who are receiving the Non-Resident Tuition Award. The fee will be $10,20,30$ or 50 percent of the difference between the in-state and out-of-state tuition per semester as long as students are receiving the award. To view eligibility requirements, please view the Academic Scholarship Office website (http://scholarships.uark.edu/nrta/).

## Academic Year

Undergraduate students are assessed tuition of $\$ 255.51$ per credit hour. Students with out-of-state residency status are assessed tuition of $\$ 899.68$ per credit hour.

Undergraduate students enrolled in developmental instruction courses are charged tuition of $\$ 134.55$ per credit hour in-state and $\$ 672.54$ per credit hour for out-of-state students.

Undergraduate students enrolled in the Walton College of Business courses are charged tuition of $\$ 339.83$ per credit hour in-state and \$1,258.00 per credit hour for out-of-state students.

Undergraduate students enrolled in the Fay Jones School of Architecture and Design are charged tuition of $\$ 304.07$ per credit hour in-state and $\$ 1,058.74$ per credit hour for out-of-state students.

Undergraduate nursing students are assessed tuition of \$329.22 per credit hour. Students with out-of-state residency status are assessed tuition of $\$ 1,141.85$ per credit hour.

Undergraduate students enrolled in College of Engineering courses are charged tuition of $\$ 309.17$ per credit hour in-state and $\$ 1,076.52$ per credit hour for out-of-state students.

Undergraduate students enrolled in Global Campus self-paced online correspondence courses are charged tuition of $\$ 135.00$ per credit hour.

## Academic Regulations Academic Integrity

As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the university's Academic Integrity Policy (http://honesty.uark.edu/policy/) at honesty.uark.edu (http://honesty.uark.edu/). Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.

## Attendance Policy for Students

Attendance and Engagement: Education at the university level requires students' active involvement in the learning process. Therefore, students have the responsibility to attend classes and to actively engage in all learning assignments or opportunities provided in their classes. Students should treat class attendance as mandatory. Instructors have the responsibility to provide a written policy on student attendance that is tied to course objectives and included in a course syllabus.

Excusable Absences: There may be times, however, when illness, family crises, or university sponsored activities require a student to be absent from class. In these situations, the student is responsible for making timely arrangements with the instructor to make up work missed. The make-up work should be completed in a timeframe that has been arranged with the instructor. Such arrangements should be made in writing and prior to the absence, when possible.

Examples of absences that should be considered excusable include those resulting from: 1) student illness, 2) serious illness or death of a member of the student's immediate family or other family crisis, 3) University sponsored activities for which the student's attendance is required
by virtue of scholarship or leadership/participation responsibilities, 4) religious observances (see Religious Observances policy tab), 5) jury duty or subpoena for a court appearance, and 6) military duty. The instructor has the right to require that the student provide appropriate documentation for any absence for which the student wishes to be excused.

## Religious Observances

When students seek to be excused from class for religious reasons, they are expected to provide their instructors with a schedule of religious holidays that they intend to observe, in writing, before the completion of the first week of classes. The Semester Calendar (http:// registrar.uark.edu/academic-dates/academic-semester-calendar/) on the Office of the Registrar's website will inform students of the university calendar of events, including class meeting and final examination dates, so that before they enroll they can take into account their calendar of religious observances. Scheduling should be done with recognition of religious observances where possible. However, faculty members are expected to allow students to make up work scheduled for dates during which they observe the holidays of their religion.

## Final Examination Policy

Each faculty member is required to give final examinations at times specified in the final examination schedule. (Comprehensive examinations are not the only ones which qualify as "final exams." Generally, exams should not be given during the last class period.) Whenever circumstances make necessary a deviation from the announced schedule, clearance for such deviation must be obtained from the appropriate dean and the Provost and Vice Chancellor for Academic Affairs.

During finals week, students are required to sit for no more than two final exams in a single calendar day period. Students with three or more finals in a single calendar day period have the right to an alternative exam date(s) for each exam exceeding two. They must submit a formal request for an alternative date in writing, along with an official copy of their class schedule for verification purposes, to the professors of those classes involved to see if one will voluntarily move the exam. If voluntary accommodation is not achieved, instructors of classes with lower enrollments for the final exam will have to accommodate individual students affected before classes with higher enrollments. This process is the same when there is a final exam scheduling conflict (two or more final exams scheduled on the same date and at the same time).

Requests must be submitted on or before the last day to drop a full semester class or classes with a mark of "W." Professors will provide the student with an alternative exam date and time no later than one week after the last day to drop a full semester class or classes with a mark of "W." All rescheduled final exams are to take place during the university designated final exam dates and times. If a student has an objection to the alternative exam date/time, she or he may appeal to the instructor's department chair.

It is the policy of the university to minimize student participation in extracurricular activities during the final examination period. No meetings, social activities, athletic events, or other extracurricular activities that require student participation will be scheduled on Reading Day or during the final examination period. Any exceptions to this policy must receive prior approval from the Provost and Vice Chancellor for Academic Affairs.

Academic Policy 1500.20 (https://provost.uark.edu/policies/150020.php)

## Grades And Marks

Final grades for courses are "A," "B," "C," "D," and "F" (except for courses taken in the Fay Jones School of Architecture).

| Grade/Mark | Given For | Grade Points |
| :--- | :--- | :--- |
| A | Outstanding <br> achievement | 4 |
| B | Good achievement | 3 |
| C | Average achievement | 2 |
| D | Poor but passing work | 1 |
| F | Failure, unsatisfactory <br> work | 0 |
| XF | Failure, academic <br> dishonesty | 0 |
| I | Incomplete course <br> requirements | N/A |
| AU | Audit, officially <br> registered | N/A |
| CR | Credit without grade <br> points | N/A |
| R | Registered, no credit | N/A |
| S | Satisfactory work in <br> courses w/o credit | N/A |
| W | Withdrawal | N/A |
| P | Passing with C- or <br> better | N/A |
| PD | Passing with a D | N/A |
| NC | No Credit | N/A |

No credit is earned for courses in which a grade of " $F$ " is recorded. A final grade of " $F$ " shall be assigned to a student who is failing on the basis of work completed and who has not completed all requirements. The instructor may change an "F" so assigned to a passing grade if warranted by satisfactory completion of all requirements. Students who fail to present an acceptable reason for not having completed all course requirements including the final examination will receive the grade they would have received had they failed such requirements. In the case of an "XF" grade given for reasons of academic dishonesty, upon graduation or completion of the period of suspension, the student may request that the " $X$ " be removed from the transcript by submitting a written request to the Provost/Vice Chancellor for Academic Affairs.

A mark of "l" may be assigned when a legitimate circumstance has prevented the student from completing all course requirements and the work completed at the time of assigning the "l" is of passing quality. It is the discretion of the instructor that determines what qualifies as a legitimate circumstance. It is recommended that the instructor, prior to the assignment of an "l" mark, document the legitimate circumstance and conditions for completing course requirements. An "l" so assigned may be changed to a grade provided all course requirements have been completed within 12 months after the end of the term in which the "l" was assigned. If the instructor does not report the grade within the 12-month period, the "l" shall be changed to an " $F$." When a mark of "l" is changed to a final grade, the grade points and academic standing are appropriately adjusted on the student's official academic records.

A mark of "AU" (Audit) is given to a student who officially registers in a course for audit purposes (see Registration for Audit (p.50)).

A mark of "CR" (Credit) is given for a course (for example, practice teaching, certain seminars, certain honors colloquia, and courses where credit is earned by examination) for which the university allows credit toward a degree, but for which no grade points are earned.

A mark of " R " (Registered) is given to a student who is registered in a course for no credit or grade points. This is typically used at the undergraduate level for Study Abroad or other situations where a placeholder mark is needed.

A mark of "S" (Satisfactory) is assigned in courses such as special problems and research when a final grade is inappropriate. The mark " S " is not assigned to courses or work for which credit is given (and thus no grade points are earned for such work). If credit is awarded upon the completion of such work, a grade or mark may be assigned at that time, and, if a grade is assigned, grade points will be earned

A mark of "W" (Withdrawal) will be given for courses from which students withdraw after the first 10 days of the semester and before the drop deadline of the semester.

A mark of " $P$ " (Passing) is given to a student who officially registers in a course for Pass/Fail credit according to university policy (see Pass Fail policy (http://catalog.uark.edu/undergraduatecatalog/ orientationandregistration/passfail/)). A "P" grade counts as credit hours but does not affect the grade-point average.

A mark of "PD" (Passing with a D) is given to a student only when allowed as an option by university policy during extenuating circumstances, such as the COVID-19 crisis in spring and summer 2020. A "PD" grade counts as credit hours but does not affect the grade-point average.

A mark of "NC" (No Credit) is given to a student in situations where registration in the course allows for this grade and only when allowed as an option by university policy during extenuating circumstances, such as the COVID-19 crisis in spring and summer 2020. An "NC" grade does not count as credit hours nor does it affect the grade-point average.
"I," "AU," "CR," "R," "S," and "W" marks will not be counted in the gradepoint average. Grades of plus and minus are assigned grade-point values in the Fay Jones School of Architecture and Design (p. 238). The gradepoint average is computed by dividing the total number of grade points by the total number of credit hours attempted in courses for which grades (rather than marks) are given. Students who utilized grade renewal or grade forgiveness in retaking courses (prior to fall Semester 1986 and after fall 1996) have only the last grade used in computing grade-point averages.

## Undergraduate Grade Exclusion Policy

Under the Grade Exclusion Policy, undergraduate students may improve their University of Arkansas (UA) undergraduate cumulative gradepoint average (GPA) by requesting that the university exclude up to 9 credit hours in courses taken at the UA in which a grade of "D" or "F" was received. The excluded courses will no longer be used to compute the UA GPA. Students must file a petition with the Office of the Registrar to use grade exclusion indicating which course(s) they choose to grade exclude. The petition must be completed and approved prior to graduation. Undergraduate students who return to the UA for an additional degree(s) may use grade exclusion only for courses taken after their most recent undergraduate UA degree was awarded. Other stipulations are:

1. Undergraduate students may select up to 9 hours of any combination of UA courses with posted grades of "D" or "F" to be excluded from their cumulative grade point average calculation.
2. Excluded courses cannot be used to satisfy degree requirements. Credit hours earned for a "D" grade in an excluded course will no longer count towards the student's degree.
3. Grade exclusions must be posted before the undergraduate degree has been conferred.
4. The course and grade that is being excluded will remain on the student's transcript with a notation indicating that the UA Grade Exclusion Policy has been applied.
5. Grade exclusion cannot be removed or applied to another course once it has been posted.
6. Grade exclusion for courses in which academic misconduct has been committed is allowable only in accordance with the university's academic integrity policy.
7. Grade exclusion may result in a recalculation of a student's academic standing, but it does not retroactively result in a refund of tuition or fees, nor does it change a student's semester academic honors for previous semesters.
8. Excluded courses and hours will continue to be counted in calculations of satisfactory progress for financial aid eligibility.
9. Students considering grade exclusion should be aware that many graduate schools, professional schools, employers or other institutions, in considering admission or employment, recalculate the GPA and include all courses attempted. This means that if the cumulative GPA has been raised because of grade exclusion, then the recalculated GPA will be lower
10. The Grade Exclusion Policy begins with the Fall 2020 semester, but may apply to courses taken before this term as long as the student has not earned an undergraduate degree from the UA or as long as the courses subject to exclusion were taken after the last UA undergraduate degree was awarded.
11. Grade forgiveness hours will be combined with grade exclusion hours when considering the credit hour limit under this policy. Therefore, any hours previously approved for grade forgiveness prior to fall 2020 will count toward the maximum 9 -hour credit limit for grade exclusion.
Thus, a student who has used 3 hours of grade forgiveness may use up to 6 hours of grade exclusion.
Grade Exclusion Form for Current Students (https://forms.uark.edu/ xfp/form/446/)

Grade Exclusion Form for Former Students (https://forms.uark.edu/ xfp/form/426/)

## Academic Bankruptcy

Students returning to the University of Arkansas after an absence of five or more years may be eligible to declare academic bankruptcy if they meet the following criteria:

1. Must have been enrolled previously at the University of Arkansas, Fayetteville, as an undergraduate student and be returning as an undergraduate student.
2. Must not have been enrolled at the university during the previous five years.
3. Students who have attended another institution since their last attendance at the university must meet requirements for transfer students (2.00 GPA on all coursework attempted more than five years
after last enrollment at the University of Arkansas, Fayetteville) to be eligible for readmission.
4. Must submit an application for readmission and official transcripts of all college work attempted since last attendance at the University of Arkansas by the application deadlines and submit a Declaration of Academic Bankruptcy form (http://registrar.uark.edu/1621.php) to the Office of the Registrar. The following are the conditions of academic bankruptcy:
a. Students will forfeit all credit hours previously awarded by the University of Arkansas, Fayetteville. This includes course work completed at the university (regardless of grades earned), courses accepted in transfer, credit by examination, and any selfpaced (correspondence) course work awarded.
b. A new calculation of GPA and credit hours will begin when the student returns to the University of Arkansas.
c. The transcript will reflect the student's complete record (including all previous college work) with an added notation of "Academic Bankruptcy Declared."
d. Courses taken at another institution within five years of the last University of Arkansas enrollment will not be accepted for transfer. Coursework completed more than five years after last attending the University of Arkansas may be accepted in transfer, subject to university transfer credit policies. For purposes of this policy, University of Arkansas self-paced (correspondence) coursework will be treated in the same manner as transfer work.
e. For the university to provide appropriate advising and (as required by Arkansas Act 1052) appropriate assessment, a student may be required to submit ACT, SAT, or ACT COMPASS test scores prior to registration for classes if, as a result of academic bankruptcy, that student is returning to the university as a freshman with fewer than 24 transfer hours.

## Academic Probation, Suspension and Dismissal

A student's academic status at the university is determined at the end of each regular term of enrollment (fall, spring, or summer) on the basis of the student's cumulative and/or term grade-point average (GPA) and number of hours attempted. The student's academic status governs his or her re-enrollment status and determines any conditions associated with re-enrollment or denial of enrollment for a subsequent term. Normally, students are notified of their status individually by the university shortly after the end of each term. However, this policy statement is the formal notification to all students of the conditions that determine academic status and the consequences for each term, regardless of individual notification.

Good Status: Upon initial admission and during a student's first term of enrollment, except for students conditionally admitted on academic probation, the student is in good status. A student remains in, or returns to, good academic status at the end of any regular term (spring, summer, fall) when the cumulative GPA is at or above the required minimum of 2.0 .

Academic Probation: When a student's cumulative grade-point average at the end of any fall, spring, or summer term is less than a 2.00 with more than three cumulative hours attempted, the student will be placed on academic probation.

First-Year Freshmen: First-year freshmen who have less than a 2.00 cumulative grade-point average at the end of their first semester of enrollment are considered at risk. During the first six weeks of their
second semester, these at risk students must, at a minimum, consult with an academic adviser to develop a plan to get off of probation before being eligible to register for their third semester courses.

Removal from Academic Probation: When a student's cumulative GPA at the end of any fall, spring, or summer term is a 2.00 or above, he or she will be removed from academic probation.

Continuing on Academic Probation: The semester grade point average a student on academic probation must earn to continue on academic probation and avoid academic suspension depends on the cumulative grade hours attempted as outlined in the academic probation chart below.

## Academic Probation Chart

| Cumulative | Placed on | Continued on | Removed From |
| :--- | :--- | :--- | :--- |
| Hours | Probation If | Probation If <br> Attempted <br> (excludes <br> grades of W) | Cumulative GPA Semester GPA <br> Is: | | Probation If |
| :--- |
| Cumulative GPA |

Academic Suspension: A student on academic probation who does not earn the minimum required term GPA will be academically suspended. No student may be academically suspended who has not spent the prior term of enrollment on academic probation. A student on academic suspension will be on academic leave from the university for one major semester (spring or fall) and all contiguous summer and intersessions from the close of the term which resulted in the academic suspension. Thus, a student academically suspended at the end of the spring semester would not be eligible to enroll until the next spring semester; a student academically suspended at the end of the summer semester would not be eligible to enroll until the following spring term; and a student academically suspended at the end of a fall semester would not be eligible to enroll until the next fall semester. The first enrollment when returning from academic suspension may not be in an intersession.

Students who sit out for one major semester after the term of the academic suspension may apply for readmission to the university. A student who does not earn credit from another institution may be readmitted on academic probation following academic suspension. A student who earns credit from another institution(s) during or subsequent to the academic suspension must apply to the university for admission as a transfer student and, if readmitted, will be on academic probation following academic suspension. A student readmitted on academic probation after academic suspension must make a semester gradepoint average of at least 2.00 for each semester, (fall, spring, or summer) until he or she is removed from probation. Failure to do so will result in academic dismissal.

Academic Dismissal: A student who returns to the university after an academic suspension is continued on academic probation following suspension and must make a semester grade-point average of at least 2.00 for each fall, spring, or summer term until he or she is removed from academic probation. Failure to do so will result in academic dismissal.

Returning after Academic Dismissal: Students who sit out for at least one full academic year and submit at least 12 hours of general education core classes or upper-level classes with at least a 3.0 gradepoint average in this coursework will be eligible for automatic readmission
from their first academic dismissal. This can be done by taking self-paced courses through the Global Campus (http://globalcampus.uark.edu/) ${ }^{1}$ at the University of Arkansas or by courses taken at another regionally accredited institution of higher education. Students meeting these requirements must complete a petition to the Academic Standards Committee (http://registrar.uark.edu/student-records/academic-standards-committee-petition.php) and submit official transcripts for all work attempted since being academically dismissed. The petition is to be submitted to the Office of the Registrar (http://registrar.uark.edu/) before applying (http://admissions.uark.edu/) for readmission.

Students who do not meet these conditions, and students who have been academically dismissed more than once, must petition to the Academic Standards Committee (http://registrar.uark.edu/student-records/academic-standards-committee-petition.php) to be considered for readmission. It is strongly recommended that students meet with an academic adviser to develop a plan for returning from academic dismissal. Students approved for readmission from academic dismissal must reapply (http:// admission.uark.edu/) for admission.

A student who reenters the university by favorable action of the Academic Standards Committee after an academic dismissal is continued on academic probation after academic dismissal and must make a semester grade-point average of at least 2.00 for each semester until the cumulative GPA reaches 2.00 and he or she is removed from academic probation. Failure to do so will result in academic dismissal.

Individual colleges or programs have the discretion to set academic admission and continuation standards for specific programs that are higher then university standards.
${ }^{1}$ Students who are not in good academic standing at the University of Arkansas may be enrolled in no more than six hours of self-paced Global Campus courses at any one time.

## Waiver of Academic Policies

The Academic Standards Committee (http://registrar.uark.edu/student-records/academic-standards-committee-petition.php), composed of faculty and students, serves as a referral body for matters of academic probation, suspension, dismissal, and other rules and regulations related to academic progress and graduation. Petitions for waiver of academic rules and information on the petitioning process may be obtained on the Office of the Registrar's website (http://registrar.uark.edu/418.php). Students should note petitioning deadlines.

## Advanced-Standing Programs Credit for Prior Learning

There are two ways undergraduate students enrolled at the University of Arkansas, Fayetteville, may establish undergraduate credit for prior learning in courses offered by the university: either through the University of Arkansas Credit for Prior Learning (see the next section), or through approved national testing programs, such as the College Level Examination Program (CLEP), the Advanced Placement Program (AP), or the International Baccalaureate Program (IB).

Credit established by prior learning must be evaluated in terms of the specific program the student wishes to pursue. The decision regarding the appropriate application of such credit to a degree program will be made in each college or school. Credit established by prior learning will be applied to a degree program in the same manner as credit established in
any other way. If credit is earned by examination, the mark of CR will be entered in the student's record. Grades are not assigned.

In certain instances, however, instead of actually receiving credit in semester hours, a student may receive advanced standing and be authorized to enroll for advanced courses in the subject matter area.

Credit by examination may not be used to satisfy minimum residency requirements as established by each college or school. Credit by examination is recorded only for students currently enrolled at the University of Arkansas, Fayetteville.

## U of A Credit for Prior Learning Program

The following conditions apply to the departmental programs for credit by examination:

1. The student must apply for such credit using forms available in the academic dean or department office. Permission to take the examination or submit the required assessment must be obtained from the faculty of the department offering the course. The faculty of each department is responsible for designating the courses in that department that may be challenged by examination or assessment. A list of courses designated as such is available on the University of Arkansas Registrar's website.
2. The appropriate department or college offering the course will design and evaluate the examination or assessment. The Office of Testing Services or an approved remote proctoring service may administer such examination or assessment if approved by the department or college offering the course.
3. The appropriate department or college offering the course may designate non-credit course content approved by that unit and offered through Global Campus as part of the Credit for Prior Learning Program. Units may administer an examination or assessment after a student completes the non-credit course content. The student may apply for credit for such an examination or assessment after (1) having been admitted to the University of Arkansas, Fayetteville, (2) earning a minimum of three credit hours with a minimum 2.0 GPA, and (3) submission of a request for such credit five years from the date which they completed the examination or assessment.
4. A passing grade on the examination or assessment must be " B " or above. A second attempt for credit for prior learning in that course will not be permitted.
5. A fee will be assessed for course credit earned through the Credit for Prior Learning Program.

## National Testing Programs

When credit by a national examination is granted, the student's academic record will list the score used as a basis for credit as well as the type of examination used to establish credit, such as CLEP subject examination or general examination, AP examination or IB examination.

Credit is awarded on the basis of official score reports, which must be sent by the national testing service directly to the Office of the Registrar, 141 Uptown East, University of Arkansas, Fayetteville, AR 72701.
Minimum score requirements as established by the University of Arkansas, Fayetteville, must be met to receive credit.

## College Level Examination Program (CLEP)

The University of Arkansas is a CLEP testing center and is authorized to administer CLEP examinations both on a national basis and on an institutional basis. However, CLEP examinations may be taken at scheduled times at any national test center, and the results sent to the

University of Arkansas. The test center code number and score recipient code number for the University of Arkansas is 6866. For information or to make application, write to the Office of Testing Services, 97 N. Razorback Road, Fayetteville, AR 72701, or telephone 479-575-3948.

Approval has been granted by the appropriate governing body, upon recommendation of the academic department, to award credit in the following courses by the use of CLEP examinations. Minimum scores for the paper-based version and the new computer-based version were established by the departments of the subject areas concerned.

Please note that minimum scores for credit for computer-based CLEP exams may differ from paper-based CLEP examinations.

| CLEP <br> Examination | UA Course | Paper-based text (pre July 2001) | Computerbased test (Effective July 2001) | Maximum Credit Allowed |
| :---: | :---: | :---: | :---: | :---: |
| General <br> Examinations |  |  |  |  |
| College Composition | ENGL 1013 | 490 | 50 | 3 |
| Approved <br> Subject <br> Examinations |  |  |  |  |
| American Government | PLSC 2003 | 47 | 50 | 3 |
| Biology | $\begin{aligned} & \text { BIOL 1543/ } \\ & \text { BIOL 1541L } \end{aligned}$ | 49 | 50 | 4 |
| Calculus | MATH 2554 | 55 | 65 | 4 |
| College Algebra | MATH 1203 | 50 | 54 | 3 |
| Chemistry | CHEM 1103/ <br> CHEM 1101L <br>  <br> CHEM 1123/ <br> CHEM 1121L | 50 | 55 | 8 |
| History of United States I | HIST 2003 | 50 | 50 | 3 |
| History of United States II | HIST 2013 | 50 | 50 | 3 |
| Human <br>  <br> Development | HDFS 1403 |  | 63 | 3 |
| Introduction to <br> Educational Psychology | PSYC 4033 |  | 55 | 3 |
| Introductory <br> Psychology | PSYC 2003 | 47 | 55 | 3 |
| Introductory Sociology | SOCI 2013 | 59 | 59 | 3 |
| Principles of Macroeconom | $\begin{aligned} & \text { ECON } 2013 \\ & \text { nics } \end{aligned}$ | 48 | 54 | 3 |
| Principles of Microeconomic | $\text { ECON } 2023$ | 48 | 54 | 3 |


| Principles of | MKTG 3433 | 48 | 50 |
| :--- | :--- | :--- | :--- |
| Marketing | HIST 1113 | 50 | 60 |
| Western <br> Civilization I | HIST 1123 | 50 | 60 |
| Western <br> Civilization II |  |  | 3 | l

## Advanced Placement Program (AP)

The Advanced Placement (AP) Program of the College Entrance Examination Board gives students the opportunity to pursue college-level studies while still in high school and, with an appropriate score on an AP exam, to receive advanced placement and/or credit upon entering the University. The AP examinations are offered annually by high schools that participate in this program. The appropriate UA governing body, upon recommendation of the academic department, has authorized credit and/ or placement for students who present qualifying scores in the AP courses listed below.

Note: While changes surrounding the administration of AP exams occurred during the COVID-19 pandemic, the University of Arkansas has not changed its policies regarding course credit for these exams. All AP exams, whether taken online or onsite, are accepted.

## Symbols for placement and credit:

- $\mathrm{P}=$ placement;
- $\mathrm{Pq}=$ qualified placement (student may be placed in an advanced course, with credit awarded for prerequisite courses upon satisfactory completion, subject to departmental review.);
- $\mathrm{C}=$ credit;
- $\mathrm{Cq}=$ qualified credit (placement and credit subject to departmental review);
- $\mathrm{E}=$ Exempt.

| AP Examination | UA Course | Minimum <br> Score |
| :---: | :---: | :---: |
| African American Studies | AAST 1003 | 3 C |
| Art History | ARHS 1003 | 3 C |
| Art History | ARHS 1003H or ARHS 2913 | 4C |
| Art History | ARHS 1003H or ARHS 2913 \& ARHS 2923 | 5 C |
| Biology | BIOL 1524 | 3 C |
| Biology | BIOL 1543/BIOL 1541L | 4 C |
| Biology | BIOL 1543H/BIOL 1541M | 5 C |
| Calculus AB | MATH 2554 | 3 C |
| Calculus AB | MATH 2554H | 5 C |
| Calculus BC | MATH 2554 \& MATH 2564 | 3 C |
| Calculus BC | MATH 2554 H \& MATH 2564H | 5 C |
| AB Subscore | MATH 2554 | 3 C |
| Chemistry | CHEM 1053/CHEM 1051L | 3 C |
| Chemistry | CHEM 1103/CHEM 1101L \& CHEM 1123/CHEM 1121L | 4 C |
| Chemistry | CHEM 1103/CHEM 1101L \& CHEM 1123H/CHEM 1121M |  |
| Computer Science A | CSCE 2004 | 3 C |
| Environmental Sciences | GEOS 1133/GEOS 1131L | 3 C |
| European History | HIST 1123 | 3 C |


| French Language | FREN 1013 \& FREN 2003 | 3 C |
| :---: | :---: | :---: |
| French Language | FREN 1013, FREN 2003 \& FREN 2013 | 4 C |
| French Language | FREN 1013, FREN 2003, FREN 2013, \& FREN 3003 | 5 C |
| German Language | GERM 1013 \& GERM 2003 | 3C |
| German Language | GERM 1013, GERM 2003 \& GERM 2013 | 4 C |
| German Language | GERM 1013, GERM 2003, GERM 2013, \& GERM 3003 | 5 C |
| Government and Politics: Comparative | PLSC 2013 | 3 C |
| Human Geography | GEOS 1123 | 3 C |
| Latin: Virgil | LATN 1013 \& LATN 2003 | 3 C |
| Latin: Virgil | LATN 1013, LATN 2003 \& LATN 2013 | 4 C |
| Latin: Virgil | LATN 1013, LATN 2003, LATN 2013 \& LATN 3003 | 5 C |
| Language and Composition | ENGL 1013 | 3 C |
| Language and Composition | ENGL 1013H | 5 C |
| Literature and Composition | WLIT 1113 | 3 C |
| Literature and Composition | WLIT 1113H | 5 C |
| Macroeconomics | ECON 2013 | 3 C |
| Microeconomics | ECON 2023 | 3 C |
| Music Theory | MLIT 1003 \& MUTH 1003 | 3 C |
| Music Theory | MLIT 1003/MUTH 1003/ MUTH 1603 \& MUTH 1621 | 4 C |
| Music Theory | MLIT 1003/MUTH 1003/ MUTH 1603/MUTH 1621/ MUTH 1631 \& MUTH 2603 | 5 C |
| Physics 1: Algebra-Based | PHYS 2013/PHYS 2011L | 3 C |
| Physics 1: Algebra-Based with Cal AB or BC score of 3 | PHYS 2054 | 4 C |
| Physics 1: Algebra-Based with Cal AB or BC score of 3 | PHYS 2054H | 5 C |
| Physics 2: Algebra-Based | PHYS 2033/PHYS 2031L | 3 C |
| Physics B | PHYS 2013/PHYS 2011L \& PHYS 2033/PHYS 2031L | 3 C |
| Physics B with Calculus AB or BC score of 3 | PHYS 2054 \& PHYS 2033/ PHYS 2031L | $3 \mathrm{Cq}^{* *}, 4 \mathrm{C}^{* *}$ |
| Physics B with Calculus AB or BC score of 3 | PHYS 2054H \& PHYS 2033/ PHYS 2031L | $5 C^{* *}$ |
| Physics C: Mechanics | PHYS 2054 | 3 C |
| Physics C: Mechanics | PHYS 2054H | 5 C |
| Physics C: E \& M | PHYS 2074 | 3 C |
| Physics C: E \& M | PHYS 2074H | 5 C |
| Precalculus | MATH 1284C | 3 C |
| Psychology | PSYC 2003 | 3 C |
| Spanish Language | SPAN 1013 \& SPAN 2003 | 3 C |
| Spanish Language | SPAN 1013, SPAN 2003 \& SPAN 2013 | 4 C |
| Spanish Language | SPAN 1013, SPAN 2003, SPAN 2013, \& SPAN 3003 | 5C |
| Spanish Literature | SPAN 2013H | 3 C |
| Spanish Literature | SPAN 3103 | 5 C |


| Statistics | STAT 2303 | $3 C^{* * *}$ |
| :--- | :--- | :--- |
| Statistics | STAT 2823 | 4 C |
| Studio Art: Drawing | ARTS 1013 | 3C |
| Studio Art: 2D Design | ARTS 1313 | 3C |
| Studio Art: 3D Design <br> U.S. Government and <br> Politics | ARTS 1323 | PLSC 2003 |
| U.S. Government and <br> Politics | PLSC 2003H | 3C |
| U.S. History | HIST 2003 or HIST 2013 | 3C |
| U.S. History HIST 2003 \& HIST 2013 | 5C |  |
| World History | HIST 1113 or HIST 1123 | 3C |
| World History | HIST 1113 \& HIST 1123 | 5C |

* Students must pass a departmental test to receive credit
** To receive credit for courses preceding the course for which AP credit has been granted, students must enroll in and complete with a grade of "C"or higher, that course which follows in sequence the course for which AP credit was granted.
*** At most, 3 hours credit allowed for AP Statistics.


## International Baccalaureate

The International Baccalaureate (IB) program is a comprehensive and rigorous two-year high school curriculum offered in the United States and in 72 countries around the world. The IB program provides students with a balanced education, facilitates geographic and cultural mobility, and promotes international understanding through a shared academic experience. The IB program gives students the opportunity to pursue college-level studies while in upper secondary school and to receive credit for final examinations upon entering the University.

The IB examinations are offered annually, usually in May, by high schools participating in this program. Students seeking credit for examinations must request that a final, official IB transcript of certificate or diploma results be sent by mail to the Office of the Registrar, 146 Silas H. Hunt Hall, University of Arkansas, Fayetteville AR 72701. These materials may be requested from International Baccalaureate North America, 200 Madison Avenue, Suite 2007, New York, NY 10016, telephone: 212-696-4464.

Approval has been granted by appropriate academic departments to award credit in the following courses. The minimum scores were established by the departments of the subject areas concerned.

Note: While changes surrounding the administration of IB exams occurred during the COVID-19 pandemic, the University of Arkansas has not changed its policies regarding course credit for these exams. All IB exams, whether taken online or onsite, are accepted.

| International <br> Course | Scourse | Score |
| :--- | :--- | :--- |
| Anthropology | ANTH 1023 | $4-7$ SL or HL |
| Biology | BIOL 1524 | $4-7$ SL |
| Biology | BIOL 1543/BIOL 1541L | $4-5 \mathrm{HL}$ |
| Biology | BIOL 1543H/BIOL 1541M | $6-7 \mathrm{HL}$ |
| Chemistry | CHEM 1053/CHEM 1051L | $4-7$ SL |
| Chemistry | CHEM 1103/CHEM 1101L \& CHEM 1123/ | $5-7 \mathrm{HL}$ |
|  | CHEM 1121L |  |


| Computer <br> Science | CSCE 2004 (Pending Department Exam) | 4-7 SL |
| :---: | :---: | :---: |
| Computer <br> Science | CSCE 2004 \& CSCE 2014 (Pending Department Exam) | 4-7 HL |
| Economics | ECON 2013 or ECON 2023 | 4-7 SL |
| Economics | ECON 2013 \& ECON 2023 | 5-7HL |
| English | ENGL 1013 | $\begin{aligned} & \text { 4-7 SL or 4-5 } \\ & \text { HL } \end{aligned}$ |
| English | ENGL 1013 \& ENGL 1023 | 6-7 HL |
| Environmental Systems | IGEOS 1133/GEOS 1131L | 4-7 SL or HL |
| French | FREN 1013 \& FREN 2003 | 4-7 SL |
| French | FREN 1013, FREN 2003, \& FREN 2013 | 4-5 HL |
| French | FREN 1013, FREN 2003, FREN 2013, \& FREN 3003 | 6-7 HL |
| German | GERM 1013 \& GERM 2003 | 4-7 SL |
| German | GERM 1013, GERM 2003, \& GERM 2013 | 4-5 HL |
| German | GERM 1013, GERM 2003, GERM 2013, \& GERM 3003 | 6-7 HL |
| Geography | GEOS 1123 | 4-7 SL or HL |
| Global Politics | PLSC 2013 | 4-7 SL or HL |
| History (U.S.) | HIST 2003 or HIST 2013 | 4-7 SL |
| History (U.S.) | HIST 2003 or HIST 2013 | 4 HL |
| History (U.S.) | HIST 2003 \& HIST 2013 | 5-7 HL |
| Hisory (World) | HIST 1113 | 4-7 SL |
| History (World) | HIST 1113 \& HIST 1123 | 4-5 HL |
| History (World) | HIST 1113H \& HIST 1123H | 6-7 HL |
| Humanities | HUMN 2213 | 3-7 SL or HL |
| Latin | LATN 1013 | 4-7 SL |
| Latin | LATN 1013 \& LATN 2003 | 4-5 HL |
| Latin | LATN 1013, LATN 2003, \& LATN 2013 | 6-7 HL |
| Mathematics | MATH 2554 | 4-7 SL |
| Mathematics | MATH 1284C and MATH 2554 | 5 HL |
| Mathematics | MATH 1284C and MATH 2554H | 6-7 HL |
| Music | MLIT 1003 | 4-7 SL |
| Music | MUTH 1631 \& MUTH 2603 | 4-7 HL |
| Philosophy | PHIL 2003 | $\begin{aligned} & \text { 4-7 SL or 4-5 } \\ & \mathrm{HL} \end{aligned}$ |
| Philosophy | PHIL 2003H | 6-7 HL |
| Physics | PHYS 2013/PHYS 2011L | 4-7 SL |
| Physics | PHYS 2013/PHYS 2011L \& PHYS 2033/ PHYS 2031L | $4-5 \mathrm{HL}$ |
| Physics | PHYS 2054 \& PHYS 2033/PHYS 2031L | 6-7 HL |
| Psychology | PSYC 2003 | 4-7 SL or HL |
| Spanish | SPAN 1013 \& SPAN 2003 | 4-7 SL |
| Spanish | SPAN 1013, SPAN 2003 \& SPAN 2013 | 4-5 HL |
| Spanish | SPAN 1013, SPAN 2003, SPAN 2013, \& SPAN 3003 | 6-7 HL |
| Theatre | THTR 1223 | 4-7 SL or HL |
| Visual Arts | ARHS 1003 | 4-7 SL |


| Visual Arts | ARHS 1003H \& ARHS 2913 | $4-5 \mathrm{HL}$ |
| :--- | :--- | :--- |
| Visual Arts | ARHS 1003H, ARHS 2913, \& ARHS 2923 | 6-7 HL |

## Eight-Semester Degree Completion Policy

The University of Arkansas is committed to helping all of its students identify and achieve their educational goals. The many University of Arkansas programs of study and activities provide opportunities to students to follow varied career and learning paths and enjoy educational experiences of different kinds. Plans for degree completion are available in the Catalog of Studies and from colleges, schools, and departments. Academic advising services in each college and school assist students in making plans for their own degree completion and in carrying them out consistent with students' abilities, circumstances, and preferences.

The Eight-Semester Degree Completion Program (DCP), makes it possible for qualified degree-seeking freshmen to express their intention - and assume the associated obligations - to complete identified bachelor's degree programs of study in four academic years. The list of majors and degrees designed to be completed in eight semesters and for which the DCP is available is maintained by each college and school. It may be accessed from the DCP website and is published in the Catalog of Studies. Colleges, schools and individual departments can provide this list as well. Before registering for their first semester of study, all freshmen entering the university must accept participation, decline participation, or acknowledge ineligibility for participation in the DCP by signing the Participation Document. New freshmen will be notified regarding how to view the Participation Document online and learn more about registering for a Degree Completion Program. A student's participation or nonparticipation in the DCP will not affect scholarship eligibility.

Students who are admissible to the DCP and who choose to participate have the responsibility for meeting all requirements specified by the university and their degree completion plan and the responsibility for complying with the DCP policy. The university is responsible for providing academic support and for ensuring that students can complete university, program and course requirements within eight consecutive semesters. The university will also provide students with timely notifications to the student's official university e-mail address regarding advising, registration, and other requirement completion information.

A student may choose at any time to discontinue participation in the DCP without penalty. Students are encouraged to discuss such choices with an authorized academic adviser for the program of study. Participation and subsequent withdrawal from the DCP will not jeopardize the student's opportunity to complete the degree program, to do so in a timely manner, or to complete another degree program or major by fulfilling program requirements.

In some circumstances it may be in a student's best interest to decline participation or withdraw from the DCP. Examples include students who are not prepared to choose a major before enrolling for the first semester and students who feel that a full semester class load of 15 or 16 hours will be too heavy given other responsibilities. Other students may plan to study abroad for a semester in an institution where the required courses are not offered or to participate in a semester-long internship program not included in the program plan. A decision or need to work or participate in certain time-intensive curricular and extra-curricular activities such as band and intercollegiate athletics may make it impossible to schedule all requirements in some programs. A student may be required to withdraw
from the DCP as a result of illness or other personal circumstances that make it impossible to do his or her best work, continue as a full-time student, or complete requirements in the time available. There are also a number of acts and events that may or will cause the DCP agreement to be voided; these are identified below in the section "Student acts and other events that will or may void the degree completion plan agreement."

## Requirements for Admission to the EightSemester Degree Completion Program (DCP):

1. Participants must begin their program of study in the fall semester as first-time, full-time freshmen and must be committed to be full-time students able to enroll in and successfully complete at least 31-36 hours each academic year.
2. Participants must have chosen a major included in the DCP, must meet all admission requirements for the chosen program of study including applicable program grade point average and other grade requirements, and must have been admitted to programs requiring formal program admission.
3. Participants must be qualified to begin enrollment in the fall semester without being required to take remedial courses in math, English, or reading or other course prerequisites to entry-level courses in the chosen program of study

## Requirements for Continuance and Completion of the Eight-Semester Degree Completion Program:

1. Students must follow exactly the degree completion plan for the chosen major and must meet all the specified requirements in their degree plan each semester unless an alternative is approved by an authorized academic adviser for their program or unless they have already met the requirement.
2. Students must be continuously enrolled in and successfully complete at least 31-36 semester credit hours of appropriate course work each academic year as outlined in their degree completion plan.
3. Students must make satisfactory academic progress as defined by the university and degree program and must maintain the grade point average required by the university and the program of study.
4. Students must monitor their own progress in meeting the requirements identified in their degree completion plan, consistent with the program plan.
5. Students must register for classes at the first/earliest assigned time during their designated registration period each semester for the following term. For courses required for graduation, students must accept any available course or class section that does not conflict with other required courses. Students should understand that special scheduling accommodations cannot be guaranteed for work or other activities including athletics and band.
Students must seek assistance from an authorized academic adviser for their chosen program of study if they are unable to identify or register for any course(s) required for that semester in their degree program. For situations in which an authorized academic adviser for the program cannot identify a required course for the student to take, the adviser must notify the department chair and dean for the student's program of study that it has not been possible for the student to complete registration for a required course for the next semester of enrollment. Notification must be made in writing immediately following the unsuccessful attempt to register. Consistent with the terms of the degree completion program, the chairperson or dean will identify an alternate course, in writing, to fulfill graduation
requirements or will provide an override to allow the student to enroll in the required course(s).
Students must complete registration no later than the last official day of class for the fall or spring term preceding the next term of enrollment, unless the identification of an appropriate course to complete the student's registration is still in progress.
6. Students must have prior written approval by an authorized academic adviser before enrolling in any course at another institution (such as concurrent enrollment, enrollment during a summer term, or study abroad) if the student wishes to transfer the course and have the course included in the coursework submitted for the degree completion plan.
7. Students must confer with an authorized academic adviser for their program before withdrawing from a required course as such a withdrawal will void the DCP agreement.
8. Students must at all times maintain an accurate local address, and telephone number in official university records. Students may make changes to such information in the Student Information System Self Service component as needed and should make them immediately following any change. Students may also make changes by written notice to the Registrar.
9. Students must respond in a timely way to any official notice or message from an authorized academic adviser and to any official notice regarding registration, degree progress, financial obligations or aid, or any other university requirement.
10. Students must make timely application for all necessary financial assistance, consistent with deadlines.
11. Students must meet all university degree requirements (including formal application for graduation consistent with deadlines and requirements as established by the Registrar for the semester in which the student is scheduled for graduation).

## Student Acts and Other Events That Will or May Void the Degree Completion Plan Agreement:

1. Withdrawing from ("dropping") a required course
2. Receiving a failing grade in a required course or receiving a grade below that required by the program
3. Changing one's major or degree program
4. Withdrawing from the University of Arkansas
5. Failure to meet any degree requirement(s) as specified and in the time specified
6. Unauthorized non-payment or delayed payment of any tuition or fees
7. Incurring a disciplinary action affecting the student's enrollment
8. Failing to comply with any other requirement of the Eight-Semester Degree Completion Policy.

## Appeal Process

A student may appeal the voiding of the DCP to the dean of the college or school in which the student is enrolled. The appeal process requires that the student submit a statement of the basis for the appeal to the dean in writing within 30 days following notification of the voiding of the program, with a copy to an authorized academic adviser for the program. The dean will notify the student and the adviser of the outcome of the appeal within 60 days after receiving the statement.

The university provides semester-by-semester plans to help students complete their degrees in a timely manner. Immediately following are links to plans that qualify for the university's Eight-Semester Degree

Completion Policy. Below them are plans that do not qualify for the eight-semester policy but which also provide a road map to finishing most degrees in four years. Following those are plans for professional programs that usually take five years.

## Eight-Semester Plans

- Accounting B.S.B.A. (http://catalog.uark.edu/plangrids/ accounting_bsba/)
- Advertising and Public Relations B.A. (http://catalog.uark.edu/ plangrids/advertisingpublicrelationsba/)
- Agricultural Business B.S.A. with Agribusiness Risk Management Concentration (http://catalog.uark.edu/plangrids/ agricultural_business_bsa_with_agribusiness_risk_management/)
- Agricultural Business B.S.A. with Agricultural Economics Concentration (http://catalog.uark.edu/plangrids/ agricultural_business_bsa_with_agricultural_economics_concentration/)
- Agricultural Business B.S.A. with Management and Marketing Concentration (http://catalog.uark.edu/plangrids/ agricultural_business_bsa_with_management_and_marketing_concentration/
- Agricultural Business B.S.A. with Pre-Law Concentration (http://catalog.uark.edu/plangrids/ agricultural_business_bsa_with_prelaw_concentration/)
- Animal Science B.S.A. with Animal Enterprise Concentration (http://catalog.uark.edu/plangrids/ animal_science_bsa_with_animal_enterprise_concentration/)
- Animal Science B.S.A. with Equine Concentration (http://catalog.uark.edu/plangrids/ animal_science_bsa_with_equine_concentration/)
- Animal Science B.S.A. with Pre-Professional Science Concentration (http://catalog.uark.edu/plangrids/ animal_science_bsa_with_preprofessional_science_concentration/)
- Anthropology B.A. (http://catalog.uark.edu/plangrids/ anthropology_ba/)
- Anthropology B.S. (http://catalog.uark.edu/plangrids/ anthropology_bs/)
- Arabic B.A. (http://catalog.uark.edu/plangrids/arabic_ba/)
- Architectural Studies B.S. (http://catalog.uark.edu/plangrids/ architectural_studies_bs/)
- Art Education B.F.A. with Community Practice Concentration (http:// catalog.uark.edu/plangrids/arteducationbfacommunitypractice/)
- Art Education B.F.A. with K-12 Teaching Concentration (http:// catalog.uark.edu/plangrids/arteducationbfaK12teaching/)
- Art History B.A. (http://catalog.uark.edu/plangrids/arthistoryba/)
- Biological Engineering B.S.B.E. (http://catalog.uark.edu/plangrids/ biological_engineering_bsbe/)
- Biological Engineering B.S.B.E. with Environmental Concentration (http://catalog.uark.edu/plangrids/ biological_engineering_bsbe_environmentalconcentration/)
- Biology B.A. (http://catalog.uark.edu/plangrids/biology_ba/)
- Biology B.S. (http://catalog.uark.edu/plangrids/biology_bs/)
- Biomedical Engineering B.S.Bm.E. (http://catalog.uark.edu/plangrids/ biomedical_engineering_bsbme/)
- Birth through Kindergarten B.S.H.E.S. (http://catalog.uark.edu/ plangrids/birththroughkindergarten/)
- Career and Technical Education B.S.E., Business Education Concentration (http://catalog.uark.edu/plangrids/ career_and_technical_education_bse_with_business_education_concentration/)
- Career and Technical Education B.S.E., Technology Education Concentration (http://catalog.uark.edu/plangrids/ career_and_technical_education_bse_with_technology_education_concentratior
- Career and Technical Education B.S.E., Family and Consumer Sciences Education Concentration (http://catalog.uark.edu/plangrids/ career_and_technical_education_bsewith_family_and_consumer_sciences_educ
- Chemical Engineering B.S.Ch.E. (http://catalog.uark.edu/plangrids/ chemical_engineering_bsche/)
- Chemistry B.A. (http://catalog.uark.edu/plangrids/chemistry_ba/)
- Chemistry B.A. with Biochemistry Option (http://catalog.uark.edu/ plangrids/chemistrybawithbiochemistryoption/)
- Chemistry B.S. with Biochemistry Option (http://catalog.uark.edu/ plangrids/chemistrybswithbiochemistryoption/)
- Chemistry B.S. (http://catalog.uark.edu/plangrids/chemistry_bs/)
- Chemistry B.S. with Biophysical Option (http://catalog.uark.edu/ plangrids/chemistrybswithbiophysicaloption/)
- Childhood Education B.S.E. with ESL Concentration (http:// //) catalog.uark.edu/plangrids/childhood_education_bse_esl/)
- Childhood Education B.S.E. with Gifted and Talented Education Concentration (http://catalog.uark.edu/plangrids/ childhood_education_bse_with_gifted_talented/)
- Childhood Education B.S.E. with Reading Concentration (http:// catalog.uark.edu/plangrids/childhood_education_bse_reading/)
- Childhood Education B.S.E. with STEM Concentration (http:// catalog.uark.edu/plangrids/childhood_education_bse_stem/)
- Civil Engineering B.S.C.E. (http://catalog.uark.edu/plangrids/ civil_engineering_bsce/)
- Classical Studies B.A. with Ancient Languages Concentration (http://catalog.uark.edu/plangrids/ classical_studies_ba_ancient_languages_concentration/)
- Classical Studies B.A. with Cultures, Reception and Digital Humanities Concentration (http://catalog.uark.edu/plangrids/ classical_studies_ba_cultures_reception_digital_humanities_concentration/)
- Communication B.A. (http://catalog.uark.edu/plangrids/ communication_ba/)
- Communication Sciences and Disorders B.S.E. (http:// catalog.uark.edu/plangrids/communication_disorders_bse/)
- Computer Engineering B.S.Cmp.E. (http://catalog.uark.edu/plangrids/ computerengineering_bscmpe/)
- Computer Engineering B.S.Cmp.E. with Cybersecurity Concentration (http://catalog.uark.edu/plangrids/ computer_engineering_with_cybersecurity_concentration/)
- Computer Science B.A. (http://catalog.uark.edu/plangrids/ computerscience_ba/)
- Computer Science B.S. (http://catalog.uark.edu/plangrids/ computerscience_bs/)
- Computer Science B.S. with Cybersecurity Concentration (http://catalog.uark.edu/plangrids/ computersciencebswithcybersecurityconcentration/)
- Criminology B.A. (http://catalog.uark.edu/plangrids/criminology_ba/)
- Crop Science B.S.A. (http://catalog.uark.edu/plangrids/ cropscience_bsa/)
- Data Science B.S. with Accounting Analytics Concentration (http:// catalog.uark.edu/plangrids/data_science_bs_accounting_analytics/)
- Data Science B.S. with Bioinformatics Concentration (http:// catalog.uark.edu/plangrids/data_science_bs_bioinformatics/)
- Data Science B.S. with Biomedical and Healthcare Informatics Concentration (http://catalog.uark.edu/plangrids/ data_science_bs_biomedical_healthcare_informatics/)
- Data Science B.S. with Business Data Analytics Concentration (http://catalog.uark.edu/plangrids/ data_science_bs_business_data_analytics/)
- Data Science B.S. with Computational Analytics Concentration (http://catalog.uark.edu/plangrids/ data_science_bs_computational_analytics/)
- Data Science B.S. with Cybersecurity Data Analytics Concentration (http://catalog.uark.edu/plangrids/ datasciencecybersecuritydataanalytics/)
- Data Science B.S. with Data Science Statistics Concentration (http:// catalog.uark.edu/plangrids/data_science_bs_data_science_analytics/)
- Data Science B.S. with Geospatial Data Analytics Concentration (http://catalog.uark.edu/plangrids/ data_science_bs_geospatial_data_analytics/)
- Data Science B.S. with Operations Analytics Concentration (http:// catalog.uark.edu/plangrids/data_science_bs_operations_analytics/)
- Data Science B.S. with Social Data Analytics Concentration (http:// catalog.uark.edu/plangrids/data_science_bs_social_data_analytics/)
- Data Science B.S. with Supply Chain Analytics (http:// catalog.uark.edu/plangrids/data_science_bs_supply_chain_analytics/)
- Drama Education B.A.T. (http://catalog.uark.edu/plangrids/ dramaeducationdredba/)
- Earth Science B.S. (http://catalog.uark.edu/plangrids/ earth_science_bs/)
- Economics B.A. with International Economics and Business Concentration (http://catalog.uark.edu/plangrids/ economics_ba_with_emphasis_in_international_economics_and_business/)
- Economics B.A. (http://catalog.uark.edu/plangrids/economics_ba/)
- Economics B.S.B.A. with Business Economics Concentration (http://catalog.uark.edu/plangrids/ economicsbsbawithbusinesseconomicsconcentration/)
- Economics B.S.B.A. with International Economics and Business Concentration (http://catalog.uark.edu/plangrids/ economicsbsbawithinternationaleconomicsandbusinessconcentration/)
- Educational Studies B.S.E. with Mixed Educational Environments Concentration (http://catalog.uark.edu/plangrids/ educationstudieswithmixedenvironments/)
- Educational Studies B.S.E. with Para-Professional Transition Concentration (http://catalog.uark.edu/plangrids/ educationstudieswithparaprofessionaltransition/)
- Electrical Engineering B.S.E.E. (http://catalog.uark.edu/plangrids/ electrical_engineering_bsee/)
- Engineering First Year (http://catalog.uark.edu/plangrids/ engineering_first_year/)
- English B.A. with Creative Writing Concentration (http://catalog.uark.edu/plangrids/ englishbawithconcentrationincreativewriting/)
- English B.A. with Rhetoric and Writing Studies Concentration (http://catalog.uark.edu/plangrids/ englishbawithrhetoricwritingstudiesconcentration/)
- English B.A. with Topical Concentration (http://catalog.uark.edu/ plangrids/englishbawithtopicalconcentration/)
- Environmental, Soil and Water Science B.S.A. (http://catalog.uark.edu/plangrids/ environmental_soil_and_water_science_bsa/)
- Exercise Science B.S. (http://catalog.uark.edu/plangrids/ exercise_science_bs/)
- Finance B.S.B.A. with Banking Concentration (http://catalog.uark.edu/ plangrids/financebsbawithbankingconcentration/)
- Finance B.S.B.A. with Financial Analytics Concentration (http:// catalog.uark.edu/plangrids/financebsbawithfinancialanalytics/)
- Finance B.S.B.A. with Financial Management and Investment Concentration (http://catalog.uark.edu/plangrids/ financebsbawithfinancialmanagementandinvestmentconcentration/)
- Finance B.S.B.A. with Real Estate Concentration (http:// catalog.uark.edu/plangrids/financebsbawithrealestateconcentration/)
- Finance B.S.B.A. with Risk Management Concentration (http:// catalog.uark.edu/plangrids/financebsbawithriskmanagement/)
- Food, Nutrition and Health B.S.H.E.S. (http://catalog.uark.edu/ plangrids/foodnutritionhealth/)
- French B.A. (http://catalog.uark.edu/plangrids/french_ba/)
- General Business B.S.B.A. (http://catalog.uark.edu/plangrids/ generalbusiness_bsba/)
- Geography B.A. (http://catalog.uark.edu/plangrids/geography_ba/)
- German B.A. (http://catalog.uark.edu/plangrids/german_ba/)
- Graphic Design B.F.A. (http://catalog.uark.edu/plangrids/graphic-design-bfa/)
- History B.A. with Histories of Conflict, Justice, and Peace Concentration (http://catalog.uark.edu/plangrids/ historyconflictjusticepeace/)
- History B.A. with Histories of Global Cultures and Societies Concentration (http://catalog.uark.edu/plangrids/ historyglobalculturessocieties/)
- History B.A. with Histories of Knowledge, Belief and Vision Concentration (http://catalog.uark.edu/plangrids/ historyknowledgebeliefvision/)
- History B.A. with Histories of Statemaking and the Limits of Power Concentration (http://catalog.uark.edu/plangrids/ historystatemakinglimitsofpower/)
- Hospitality Management B.S.H.E.S. (http://catalog.uark.edu/plangrids/ hospitality_management_bshes/)
- Human Development and Family Sciences B.S.H.E.S. with Child Life Concentration (http://catalog.uark.edu/plangrids/ human_development_child_life_concentration/)
- Human Development and Family Sciences B.S.H.E.S. with Lifespan Development in Diverse Contexts Concentration (http://catalog.uark.edu/plangrids/ human_development_lifespan_development/)
- Human Nutrition and Dietetics B.S.H.E.S. (http://catalog.uark.edu/ plangrids/human_nutrition-dietetics/)
- Human Resources Management B.S.B.A. (http://catalog.uark.edu/ plangrids/human_resources_management_bsba/)
- Industrial Engineering B.S.I.E. (http://catalog.uark.edu/plangrids/ industrial_engineering_bsie/)
- Information Systems B.S.B.A. with Business Analytics Concentration (http://catalog.uark.edu/plangrids/ informationsystemsbsbawithbusinessanalyticsconcentration/)
- Information Systems B.S.B.A. with Enterprise Resource Planning Concentration (http://catalog.uark.edu/plangrids/ informationsystemsbsbawithenterpriseresourceplanningconcentration/)
- Information Systems B.S.B.A. with Blockchain Enterprise Systems Concentration (http://catalog.uark.edu/plangrids/ informationsystemsbsbawithenterprisesystemsconcentration/)
- Innovation and Entrepreneurship B.S.B.A. (http://catalog.uark.edu/ plangrids/innovationandentrepreneurshipbsbainep/)
- Interdisciplinary Studies B.A. (http://catalog.uark.edu/plangrids/ interdisciplinary_studies_ba/)
- International and Global Studies B.A. with European and Transatlantic Affairs Concentration (http://catalog.uark.edu/plangrids/ international_relations_ba_euro_transatlantic/)
- International and Global Studies B.A. with Global South Concentration (http://catalog.uark.edu/plangrids/ international_studies_ba_global_south/)
- International and Global Studies B.A. with Peace, Security and Human Rights Concentration (http://catalog.uark.edu/plangrids/ international_relations_ba_peacesecurityrights/)
- International Business B.S.I.B. with Accounting Concentration (http:// catalog.uark.edu/plangrids/accounting_bsib/)
- International Business B.S.I.B. with Business Economics Concentration (http://catalog.uark.edu/plangrids/ business_economics_bsib/)
- International Business B.S.I.B. with Finance Concentration (http:// catalog.uark.edu/plangrids/finance_bsib/)
- International Business B.S.I.B. with General Business Concentration (http://catalog.uark.edu/plangrids/general_business_bsib/)
- International Business B.S.I.B. with Information Systems Concentration (http://catalog.uark.edu/plangrids/ information_systems_bsib/)
- International Business B.S.I.B. with Management Concentration (http://catalog.uark.edu/plangrids/management_bsib/)
- International Business B.S.I.B. with Marketing Concentration (http:// catalog.uark.edu/plangrids/marketing_bsib/)
- International Business B.S.I.B. with Retail Concentration (http:// catalog.uark.edu/plangrids/retail_bsib/)
- International Business B.S.I.B. with Supply Chain Management Concentration (http://catalog.uark.edu/plangrids/ supply_chain_management_bsib/)
- Italian B.A. with Literary and Cultural Studies Concentration (http:// catalog.uark.edu/plangrids/italianwithliteraryculturalstudies/)
- Italian B.A. with Transnational Studies Concentration (http:// catalog.uark.edu/plangrids/italianwithtransnationalstudies/)
- Journalism B.A. with Broadcast Concentration (http:// catalog.uark.edu/plangrids/journalismbawithbroadcastsequence/)
- Journalism B.A. with Journalism Concentration (http:// catalog.uark.edu/plangrids/journalismbajournalismconcentration/)
- Journalism B.A. with Multimedia Storytelling and Production Concentration (http://catalog.uark.edu/plangrids/ journalismbamultimediaconcentration/)
- Journalism/Political Science B.A. (http://catalog.uark.edu/plangrids/ journalismpoliticalscience_ba/)
- Marketing B.S.B.A. (http://catalog.uark.edu/plangrids/ marketing_bsba/)
- Mathematics B.A. (http://catalog.uark.edu/plangrids/mathematics_ba/)
- Mathematics B.S., Concentration 1 (Applied) (http://catalog.uark.edu/ plangrids/mathematicsbsoption1applied/)
- Mathematics B.S., Concentration 2 (Pure) (http://catalog.uark.edu/ plangrids/mathematicsbsoption2pure/)
- Mathematics B.S., Concentration 3 (Statistics) (http:// catalog.uark.edu/plangrids/mathematicsbsoption3statistics/)
- Mechanical Engineering B.S.M.E. (http://catalog.uark.edu/plangrids/ mechanical_engineering_bsme/)
- Mechanical Engineering B.S.M.E. with Aerospace Concentration (http://catalog.uark.edu/plangrids/ mechanical_engineering_aerospace_bsme/)
- Music B.A. Sample (http://catalog.uark.edu/plangrids/ samplemusic_ba/)
- Music B.M., Composition (https://catalog.uark.edu/plangrids/ music_bm_music_composition/)
- Music B.M., Jazz Studies (http://catalog.uark.edu/plangrids/ music_bm_music_jazz_studies/)
- Music B.M., Music Performance-Guitar (http://catalog.uark.edu/ plangrids/music_bm_music_performanceguitar/)
- Music B.M., Music Performance-Instrumental, Woodwind, Brass, Percussion (http://catalog.uark.edu/plangrids/ samplemusicbmmusicperformance/)
- Music B.M., Music Performance-Piano (http://catalog.uark.edu/ plangrids/music_bm_music_performancepiano/)
- Music B.M., Music Performance-String (http://catalog.uark.edu/ plangrids/music_bm_music_performancestring/)
- Music B.M., Music Performance-Voice (http://catalog.uark.edu/ plangrids/music_bm_music_performancevoice/)
- Music B.M., Music Theory (http://catalog.uark.edu/plangrids/ music_bm_music_theory/)
- Music B.M., with Elective Studies in Business (http://catalog.uark.edu/ plangrids/music_bm_with_elective_studies_in_business/)
- Music Education B.M., with Choral

Concentration (http://catalog.uark.edu/plangrids/
music_education_bm_with_choral_concentration/)

- Music Education B.M., with Instrumental Concentration (http://catalog.uark.edu/plangrids/ music_education_bm_with_instrumental_concentration/)
- Organizational Leadership B.S.B.A. (http://catalog.uark.edu/plangrids/ organizational_management_leadership/)
- Philosophy B.A. (http://catalog.uark.edu/plangrids/philosophy_ba/)
- Physics B.A. (http://catalog.uark.edu/plangrids/physics_ba/)
- Physics B.S., Astronomy Concentration (http://catalog.uark.edu/ plangrids/physics_bs/)
- Physics B.S., Biophysics Concentration (http://catalog.uark.edu/ plangrids/physicsbswithbiophysicsconcentration/)
- Physics B.S., Computational Concentration (http://catalog.uark.edu/ plangrids/physicsbswithcomputationalconcentration/)
- Physics B.S., Electronics Concentration (http://catalog.uark.edu/ plangrids/physicsbswithelectronicsconcentration/)
- Physics B.S., Geophysics Concentration (http://catalog.uark.edu/ plangrids/physicsbswithgeophysicsconcentration/)
- Physics B.S., Optics Concentration (http://catalog.uark.edu/plangrids/ physicsbswithopticsconcentration/)
- Physics B.S., Professional Concentration (http://catalog.uark.edu/ plangrids/physicsbswithprofessionalconcentration/)
- Political Science B.A. (http://catalog.uark.edu/plangrids/ political_science_ba/)
- Poultry Science B.S.A. with Poultry Industry Concentration (http://catalog.uark.edu/plangrids/ poultry_science_bsa_with_industry_concentration/)
- Poultry Science B.S.A. with Pre-Professional Science Concentration (http://catalog.uark.edu/plangrids/ poultry_science_bsa_with_preprofessional_science_concentration/)
- Psychology B.A. (http://catalog.uark.edu/plangrids/psychology_ba/)
- Public Health B.S. (http://catalog.uark.edu/plangrids/ community_health_promotion_bse/)
- Recreation and Sport Management B.S. with Recreation Administration Concentration (http://catalog.uark.edu/plangrids/ recreationsportmanagementrecreationadministrationconcentration/)
- Recreation and Sport Management B.S. with Sports Administration Concentration (http://catalog.uark.edu/plangrids/ recreationsportmanagementsportsadministrationconcentration/)
- Retail B.S.B.A. (http://catalog.uark.edu/plangrids/retail_bsba/)
- Social Work B.S.W. (http://catalog.uark.edu/plangrids/ social_work_bsw/)
- Sociology B.A. (http://catalog.uark.edu/plangrids/sociology_ba/)
- Spanish B.A. (http://catalog.uark.edu/plangrids/spanish_ba/)
- Special Education B.S.E. (http://catalog.uark.edu/plangrids/ special_education_bse_eight_semester/)
- Studio Art B.A. (http://catalog.uark.edu/plangrids/studioartba/)
- Studio Art B.F.A. with Ceramics Concentration (http:// catalog.uark.edu/plangrids/studio_art_bfa_ceramics_concentration/)
- Studio Art B.F.A. with Drawing Concentration (http://catalog.uark.edu/ plangrids/studio_art_bfa_drawing_concentration/)
- Studio Art B.F.A. with Painting Concentration (http://catalog.uark.edu/ plangrids/studio_art_bfa_painting_concentration/)
- Studio Art B.F.A. with Photography Concentration (http://catalog.uark.edu/plangrids/ studio_art_bfa_photography_concentration/)
- Studio Art B.F.A. with Printmaking Concentration (http://catalog.uark.edu/plangrids/ studio_art_bfa_printmaking_concentration/)
- Studio Art B.F.A. with Sculpture and Experimental Media Concentration (http://catalog.uark.edu/plangrids/ studio_art_bfa_sculpture_concentration/)
- Supply Chain Management B.S.B.A. (http://catalog.uark.edu/ plangrids/supply_chain_management_bsba/)
- Teaching K-12 Physical Education and Health B.S.E. (http://catalog.uark.edu/plangrids/ teaching_k12_physical_education_health_bse/)
- Theatre B.A. with Design and Technology Concentration (http:// catalog.uark.edu/plangrids/theatre_ba_designandtechnology/)
- Theatre B.A. with Performance Concentration (http://catalog.uark.edu/ plangrids/theatre_ba_performance/)
- Theatre B.A. with Theatre Studies Concentration (http:// catalog.uark.edu/plangrids/theatre_ba_theatre_studies/)


## Four-Year Plans

The following plans do not qualify for the Eight-Semester Degree Completion Policy, usually because they require a summer internship or field course, and, therefore, take nine semesters, or they have specific mid-program admission requirements that exempt the program. However the plans below do offer students a road map to complete their degree in four years.

- Agricultural Education Communication and Technology B.S.A. with Agricultural Education Concentration (http://catalog.uark.edu/ plangrids/aec-bsa-agri-education-concentration/)
- Agricultural Education Communication and Technology B.S.A. with Agricultural Communication Concentration (http://catalog.uark.edu/ plangrids/aec-bsa-agri-communications-concentration/)
- Agricultural Education Communication and Technology B.S.A. with Agricultural Leadership Concentration (http://catalog.uark.edu/ plangrids/aec-bsa-agri-leadership-concentration/)
- Agricultural Education Communication and Technology B.S.A. with Agricultural Systems Technology Management Concentration (http://catalog.uark.edu/plangrids/aec-bsa-agri-systems-technologyconcentration/)
- Apparel Merchandise and Product Development B.S.H.E.S. (http://catalog.uark.edu/plangrids/ apparelmerchandisingproductdevelopment/)
- Food Science B.S.A. with Food Technology Concentration (p. 182)
- Food Science B.S.A. with Food and Culinary Sciences Concentration (p. 184)
- Food Science B.S.A. with Food Science Concentration (p. 180)
- Geology B.S. (p. 425)
- Geology B.S. with Geophysics Concentration (p. 426)
- Horticulture, Landscape and Turf Sciences B.S.A. (p. 190)
- Interior Architecture and Design B.I.D. (p. )
- Interdisciplinary Studies B.A. (http://catalog.uark.edu/plangrids/ interdisciplinary_studies_ba/)
- Recreation and Sport Management B.S. (p. )


## Five-Year Plans

The following plans do not qualify for the Eight-Semester Degree Completion Policy, in part because they are intended to be five-year professional programs. However, these plans offer students a road map to complete their degree in five years.

- Architecture B.Arch. (p. )
- Landscape Architecture B.L.A. (p. )


## University Course Requirements

The University of Arkansas requires every undergraduate degree program to include common coursework across the university's undergraduate majors. This coursework satisfies the Arkansas state minimum core (p. 81) for a college degree and the university's general education learning outcomes (p. 72).

Many of the courses that satisfy the state minimum core also fulfill many of the university's general education learning outcomes, although some majors specify courses beyond the state minimum to meet their specific general education learning outcomes.

## General Education

The University of Arkansas' general education program provides a rigorous liberal education developed and fostered across a student's entire educational experience. The program's curriculum prepares students for the challenges and opportunities of the 21st century by strengthening critical and ethical thinking skills, improving communication, and enhancing understanding of human and cultural diversity.

Furthermore, the general education program is designed to help students complement their major program of study with an understanding of artistic, humanistic, and scientific contexts for use throughout their lifetime as engaged global citizens.

Eleven learning outcomes reflect the six learning goals of the general education program. For each learning outcome, a series of learning indicators detail specific knowledge, skills, and attitudes to be developed in students.

## Goals

Each undergraduate major leading to a degree requires coursework that together meet the state minimum requirements (p. 81) and the university's general education learning outcomes.

The general education program is divided into six thematic goals for students:

GOAL 1: Strengthen written, oral, and multimodal communication abilities.

The two learning outcomes associated with this goal are for students to be able to write clear, correct, and effective prose as well as to be able to communicate with a variety of audiences in writing and speaking.

GOAL 2: Build core skills of quantitative literacy.
The learning outcome under this goal is for students to have the ability and habit of mind to seek quantitative information and be able to apply it, using critical reasoning and analysis to solve algebraic problems and interpret results.

GOAL 3: Develop a working knowledge of how scholars and artists think and act in fundamental areas of study.

The four learning outcomes under this goal are for students to articulate and apply the following:

- Concepts from the fine arts or performing arts
- Aesthetic, humane, and ethical sensibilities of the humanities
- Principles of human interactions of individuals, groups, and institutions
- Through experiment and observation, the basic principles that govern natural phenomena

GOAL 4: Expand diversity awareness, intercultural competency, and global learning.

The two learning outcomes for this goal are for students to learn to interact appropriately within intercultural contexts and develop familiarity with concepts of diversity in the United States.

GOAL 5: Demonstrate critical thinking and ethical reasoning.
The learning outcome for this goal is for students to demonstrate essential principles of critical thinking and ethical reasoning and apply them to the evaluation and construction of rational and moral arguments.

GOAL 6: Gain the ability to synthesize, integrate, and apply knowledge developed throughout the undergraduate years.

The learning outcome for this goal is for students to be able to reflect upon and explain how they use the skills and abilities embodied in Goals 1 through 5 in completing an integrative project during their junior or senior year.

## Goal 1

Strengthen written, oral, and multimodal communication abilities.
The two learning outcomes associated with this goal are for students to be able to write clear, correct, and effective prose as well as to be able to communicate with a variety of audiences in writing and speaking.

## Learning Outcome 1.1

Upon reaching this goal, students will be able to write clear, correct, and effective prose, crafted to achieve a range of purposes and address a variety of audiences, incorporating and citing sources gathered from primary (observational) or secondary (bibliographic) research.

Learning Indicators for Learning Outcome 1.1: To successfully achieve this outcome, students will complete these five indicators:

- Focus primarily on how to generate written texts, receiving explicit instruction in how to analyze audiences and rhetorical situations, how to follow the examples of model texts, and how to revise.
- Complete at least four substantial writing assignments and produce at least 5000 words of prose.
- Incorporate specific feedback into their writing, in order to help them revise and edit for clarity, force, and correctness.
- Critically analyze the effectiveness of written prose.
- Incorporate and cite sources gathered from primary (observational) or secondary (bibliographic) research in their writing.

Courses: The following courses meet the general education requirements for Learning Outcome 1.1:

| Course | Additional Outcomes | State Minimum Core |
| :--- | :--- | :--- |
| ENGL 1013 or | No | English |
| ENGL 1013H |  |  |
| ENGL 1023 or | No | English |
| ENGL 1023H |  |  |

## Learning Outcome 1.2

Upon reaching this goal, students will be able to communicate with a variety of audiences not only in writing but also by speaking and using a range of electronic and digital modes.

Learning Indicators for Learning Outcome 1.2: To successfully achieve this outcome, students will complete these five indicators:

- Engage primarily in learning how to generate written, spoken, or multimedia presentations, receiving explicit instruction in how to analyze audiences and rhetorical situations, how to follow the example of model presentations, and how to revise.
- Complete at least 12 pages of prose collected in at least three assignments or at least three oral or multi-media presentations that last a total of at least 20 minutes or some combination of written, oral, or multi-media presentations that constitute a commensurate amount of student work.
- Integrate effective content to be presented in a written, oral, or multimedia presentation that is appropriate to a specific context, audience, and purpose.
- Incorporate specific feedback into written, oral, or multi-media presentations, revising and editing them for clarity, force, and correctness.
- Incorporate and cite sources gathered from primary (observational) or secondary (bibliographic) research in written, oral, or multi-media presentations.

Courses: Any of the following courses will meet the general education requirements for Learning Outcome 1.2. Some majors may specify which course or courses to take:

| - Incorporate and cite sources gathered from primary (observational) or secondary (bibliographic) research in written, oral, or multi-media presentations. |  |  | ARHS 4993 or ARHS 4993H | No | No |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | ARTS 4993 | 6.1 | No |
| Courses: Any of the following courses will meet the general education requirements for Learning Outcome 1.2. Some majors may specify which course or courses to take: |  |  | CATE 4013 | No | No |
|  |  |  | CATE 406X | 6.1 | No |
|  |  |  | CLST 3023 | 3.2 and 4.2 | No |
| Course <br> ACOM 3143 or ACOM 3143H | Additional Outcomes <br> No | State Minimum Core | CLST 4003H | 6.1 | No |
|  |  | No | COMM 1313 | 5.1 | No |
|  |  |  | EDST 3333 | No | No |
| AGED 3133 | No | No | ENGL 1033 or <br> ENGL 1033H | No | English |
| AGED 4003 | 5.1 | No |  |  |  |
| ANTH 4013 | 3.2, 3.3, 4.1, 5.1, and | No | ENGL 3103 | 5.1 and 6.1 | No |
|  | 6.1 |  | FREN 4033 | No | No |
| ARAB 4053 | 6.1 | No | GDES 4353 | No | No |
| ARAB 4213 | 6.1 | No | GEOS 4924 | 6.1 | No |
| ARCH 4433 | 4.2 | No | GERM 4213 | 6.1 | No |
| ARED 3003 | No | No | HIST 4893 or HIST 4893H | 6.1 | No |
| ARHS 4013 or | No | No |  |  |  |
| ARHS 4013H |  |  | HIST 498V or HIST 498VH | 6.1 | No |
| ARHS 4413 or | No | No |  |  |  |
| ARHS 4413H |  |  | HRWD 3333 | 5.1 | No |
| ARHS 4423 or | No | No | IARD 4823 | 5.1 | No |
| ARHS 4423H |  |  | INST 3303 | No | No |
| ARHS 4563 or | No | No | INST 3503 | No | No |
| ARHS 4563H |  |  | INST 3603 | No | No |
| ARHS 4573 or | No | No | INST 4003 | 6.1 | No |
| ARHS 4573H |  |  | INST 4603 | No | No |
| ARHS 4613 or ARHS 4613H | No | No | INST 4913 or INST 4913H | 6.1 | No |
| ARHS 4623 or | No | No | ITAL 4123 | 6.1 | No |
| ARHS 4623H |  |  | ITAL 4143 | 6.1 | No |
| ARHS 4633 or ARHS 4633H | No | No | LARC 1325 | No | No |
|  | No |  | LARC 4413 | No | No |
| ARHS 4733H |  | No | MATH 4933 | 6.1 | No |
| ARHS 4753 | No | No | MLIT 1013 or MLIT 1013H | 3.1 | Fine Arts |
| ARHS 4763 or ARHS 4763H | No | No | MUHS 3703 | No | No |
| ARHS 4783 or | No | No | MUHS 3713 | No | No |
| ARHS 4783H |  |  | NURS 4092 | 6.1 | No |
| ARHS 4853 or | No | No | NURS 4112 | No | No |
| ARHS 4853H |  |  | PHIL 4983 | 6.1 | No |
| ARHS 4863 or | No | No | PHYS 4991 | 6.1 | No |
| ARHS 4863H |  |  | PLSC 4153 | 6.1 | No |
| ARHS 4873 or | No | No | PLSC 4913 or | 6.1 | No |
| ARHS 4873H |  |  | PLSC 4913H |  |  |
| ARHS 4913 or | No | No | PLSC 499VH | 6.1 | No |
| ARHS 4913H |  |  | PSYC 4083 | 6.1 | No |
| ARHS 4923 or | No | No | PSYC 4283 | 6.1 | No |
| ARHS 4923H |  |  | SEED 4063 | 5.1 | No |
| ARHS 4933 or ARHS 4933H | No | No | SPAN 3883 | No | No |
| ARHS 4983 or |  |  | STEM 2003 | 3.3 | Social Sciences |
| ARHS 4983H | No | No | THTR 4333 | No | No |

## Goal 2

Build core skills of quantitative literacy.
The learning outcome under this goal is for students to have the ability and habit of mind to seek quantitative information and be able to apply it, using critical reasoning and analysis to solve algebraic problems and interpret results.

## Learning Outcome 2.1

Upon reaching this goal, students will have the ability and habit of mind to search out quantitative information, critique it, reflect upon it, and apply it in their public, personal, and professional lives; formulate decisions and problem solving based on critical reasoning and analysis; synthesize quantitative information from a variety of sources to solve problems and interpret results; perform and solve basic function operations, and solve algebraic problems using appropriate vocabulary.

Learning indicators for Learning Outcome 2.1: To successfully achieve this outcome, students will complete these five indicators:

- Employ college-level algebraic concepts and tools
- Apply these tools to other subject areas and real-life problems
- Formulate and solve quantitative problems in mathematical terms, using appropriate tools and methods
- Use mathematical computation involving integers, rational numbers, algebraic expressions, decimals, ratios, percentages, roots, and powers
- Express quantitative and logical ideas with precision, using the language and notation of mathematics

Students who receive a score of at least 60 on the University of Arkansas Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT have demonstrated successful completion of the learning indicators identified for learning outcome 2.1.

Courses: Any of the following courses will meet the general education requirements for Learning Outcome 2.1. Some majors may specify which course to take:

| Course | Additional Outcomes | State Minimum Core |
| :--- | :--- | :--- |
| MATH 1203 | No | Mathematics |
| MATH 1313 | No | Mathematics |

## Goal 3

Develop a working knowledge of how scholars and artists think and act in fundamental areas of study.

The four learning outcomes under this goal are for students to articulate and apply the following:

- Concepts from the fine arts or performing arts
- Aesthetic, humane, and ethical sensibilities of the humanities
- Principles of human interactions of individuals, groups, and institutions
- Through experiment and observation, the basic principles that govern natural phenomena


## Learning Outcome 3.1

Upon reaching this goal, students will be able to articulate and apply concepts from one of the fine or performing arts.

Learning Indicators for Learning Outcome 3.1: To successfully achieve this outcome, students will complete at least three of these five indicators:

- Synthesize the development over time of the fundamental concepts, principles, theories, and methods, creative practices and techniques of the visual and/or performing arts.
- Develop an understanding of how historical, social, cultural, and personal forces shape artistic communication and how the arts in turn share the diverse cultures of past and present societies.
- Respond critically to a variety of works in the arts, connecting the individual work in the creative discipline being introduced to other aspects of human thought and endeavor.
- Through written, oral, and/or graphic techniques of communication, analyze and interprets works of fine and performing arts using appropriate critical language, and identifying the visual, sensory, environmental, and psychological characteristics that they observe.
- Understand and use materials and resources available for participation in the arts in various roles.

Courses: The following courses are available to satisfy Learning Outcome 3.1. Some majors may specify which course to take:

| Course | Additional Outcomes | State Minimum Core |
| :---: | :---: | :---: |
| ARCH 1003 | 4.1 | Fine Arts |
| ARHS 1003 or ARHS 1003H | No | Fine Arts |
| ARHS 2913 | No | No |
| ARHS 2923 | No | No |
| COMM 1003 or COMM 1003H | 4.2 | Fine Arts |
| DANC 1003 | 3.2 | Fine Arts or Humanities |
| ENGL 2023 | 3.2 | Fine Arts or Humanities |
| LARC 1003 | 4.1, 4.2 and 5.1 | Fine Arts |
| MLIT 1003 or MLIT 1003H | No | Fine Arts |
| MLIT 1013 or MLIT 1013H | 1.2 | Fine Arts |
| MLIT 1333 | 4.2 | Fine Arts |
| PHIL 4403 | No | No |
| THTR 1003 | 3.2 | Fine Arts or Humanities |
| THTR 1013 or THTR 1013H | 3.2 | Fine Arts or Humanities |
| THTR 1223 | No | No |

## Learning Outcome 3.2

Upon reaching this goal, students will be able to articulate a minimum of three vital concepts of aesthetic, humane, and ethical sensibilities embodied in the humanities.

Learning Indicators for Learning Outcome 3.2: To successfully achieve this outcome, students will complete at least three of these five Indicators:

- Identify fundamental concepts, structures, themes, and principles of the discipline being introduced
- Analyze texts and other created artifacts using theories and methods of the discipline
- Produce a reasonable short essay about the material introduced in the course
- Interpret texts and other created artifacts within multiple historical, intellectual, and cultural contexts
- Draw connections among cultural achievements of various groups of people of different ethnicities, religious backgrounds, racial origins, and sexual identities

Courses: The following courses are available to satisfy Learning Outcome 3.2. Some majors may specify which course to take:

| Course | Additional Outcomes | State Minimum Core |
| :---: | :---: | :---: |
| AAST 2023 | 4.2 | Humanities |
| ANTH 1033 | 4.1 | Humanities |
| ANTH 4013 | 1.2, 3.3, 4.1, 5.1 and 6.1 | No |
| ARAB 2013 | 4.1 | Humanities |
| ARAB 2016 or ARAB 2016H | 4.1 | Humanities |
| ARCH 1013 | 4.2 | Humanities |
| CLST 1003 or CLST 1003H | 4.1 and 5.1 | Humanities |
| CLST 1013 | 4.1 and 5.1 | Humanities |
| CLST 3013 or <br> CLST 3013H | 4.1 | No |
| CLST 3023 | 1.2 and 4.2 | No |
| COMM 1233 | 4.2 | Humanities |
| DANC 1003 | 3.1 | Fine Arts or Humanities |
| ENGL 1213 | No | Humanities |
| ENGL 2023 | 3.1 | Fine Arts or Humanities |
| FREN 2003 | 4.1 | Humanities |
| GNST 2003 or GNST 2003H | 4.2 | Humanities |
| GREK 2003 | 4.1 | Humanities |
| HIST 1113 or HIST 1113H | 3.3 and 4.1 | Humanities or Social Sciences |
| HIST 1123 or HIST 1123H | 3.3 and 4.1 | Humanities or Social Sciences |
| HIST 2003 | 3.3 and 4.2 | Humanities, Social Sciences or U.S. History/Government |
| HIST 2013 | 3.3 and 4.2 | Humanities, Social <br> Sciences or U.S. <br> History/Government |
| HUMN 1124H | 4.1 and 5.1 | Humanities |
| HUMN 2213 | 4.1 | Humanities |
| ITAL 2003 | 4.1 | Humanities |
| ITAL 2113 | 4.1 | Humanities |
| LALS 2013 | 4.1 and 4.2 | Humanities |
| LATN 2003 | 4.1 | Humanities |
| MRST 2013 | No | Humanities |
| MUSY 2003 or MUSY 2003H | 4.1 | Humanities |


| PHIL 2003, <br> PHIL 2003C or <br> PHIL 2003H | 5.1 | Humanities |
| :--- | :--- | :--- |
| PHIL 2103 or <br> PHIL 2103C | 5.1 |  |
| PHIL 2303 | No | Humanities |
| SEED 4103 | No | Humanities |
| SEED 4203 | No | No |
| SEED 4443 | No | No |
| SPAN 2003 | 4.1 | No |
| THTR 1003 | 3.1 | Humanities |
| THTR 1013 or | 3.1 | Fine Arts or Humanities |
| THTR 1013H | 4.1 | Fine Arts or Humanities |
| WLIT 1113 | 4.1 | Humanities |
| WLIT 1123 |  |  |

## Learning Outcome 3.3

Upon reaching this goal, students will be able to articulate and use the basic principles of human interactions - of individuals, groups, and institutions - in a variety of contexts.

Learning Indicators for Learning Outcome 3.3: To successfully achieve this outcome, students will complete at least three of these five indicators:

- Articulate the key concepts, principles, and overarching themes to a social science discipline.
- Apply social scientific reasoning and techniques.
- Analyze theories, data, and methods of a social science discipline to explain individual, group, and institutional interactions.
- Apply critical thinking and use scientific reasoning to evaluate claims about the social world.
- Integrate and use evidence-based theories to explain various types of human interaction through written and oral communication.

Courses: The following courses are available to satisfy Learning
Outcome 3.3. Some majors may specify which courses to take:

| Course | Additional Outcomes | State Minimum Core |
| :--- | :--- | :--- |
| AGEC 1103 or | No | Social Sciences |
| AGEC 1103H |  |  |
| AGEC 2103 or | No | Social Sciences |
| AGEC 2103H |  | No |
| AGLE 3153 | No | Social Sciences |
| ANTH 1023 | 4.1 | No |
| ANTH 4013 | $1.2,3.2,4.1,5.1$ and |  |
|  | 6.1 | No |
| CIED 2083 | No | Social Sciences |
| COMM 1023 or | 4.1 |  |
| COMM 1023H |  | Social Sciences |
| ECON 2013 | No | Social Sciences |
| ECON 2023 | No | Social Sciences |
| ECON 2143 | No | Social Sciences |
| EDST 2003 | No | No |
| ENGL 2173 | No | Social Sciences |
| HDFS 1403 or | $4.1,4.2$ and 5.1 |  |
| HDFS 1403H |  | Social Sciences |
| HDFS 2413 | 4.1 and 4.2 |  |


| HDFS 2603 | 4.2 and 5.1 | Social Sciences |
| :---: | :---: | :---: |
| HIST 1113 or HIST 1113H | 3.2 and 4.1 | Humanities or Social Sciences |
| HIST 1123 or HIST 1123H | 3.2 and 4.1 | Humanities or Social Sciences |
| HIST 2003 | 3.2 and 4.2 | Humanities, Social <br> Sciences or U.S. <br> History/Government |
| HIST 2013 | 3.2 and 4.2 | Humanities, Social <br> Sciences or U.S. <br> History/Government |
| HIST 2093 | 4.1 and 5.1 | Social Sciences |
| HUMN 1114H | 4.1 and 5.1 | Social Sciences |
| HUMN 2114H | 4.1 and 5.1 | Fine Arts or Social Sciences |
| INST 2813 or INST 2813H | 4.1 and 5.1 | Social Sciences |
| PLSC 2003 | 4.2 | Social Sciences or U.S. History/Government |
| PLSC 2013 | 4.1 | Social Sciences |
| PLSC 2203 | No | Social Sciences |
| PLSC 2813 or PLSC 2813H | 4.1 and 5.1 | Social Sciences |
| PSYC 2003 | No | Social Sciences |
| RESM 2853 or RESM 2853H | 4.1 | Social Sciences |
| SOCI 2013 or SOCI 2013H | 4.1 and 4.2 | Social Sciences |
| SOCI 2033 | 4.1 and 4.2 | Social Sciences |
| STEM 2003 | 1.2 | Social Sciences |

## Learning Outcome 3.4

Upon reaching this goal, students will be able to articulate and use, through experiment and observation, the basic principles that govern natural phenomena.

Learning Indicators for Outcome 3.4: To successfully achieve this outcome, students will complete at least three of these five indicators:

- Identify the fundamental concept(s) unifying a scientific discipline
- Apply the principles of scientific theory and technique
- Evaluate the credibility and use of scientific information
- Make evidence-based arguments to support conclusions
- Integrate and organize information, concepts, and applications relevant in more than one scientific discipline

Courses: The following courses with corequisite laboratories are available to satisfy Learning Outcome 3.4. Some majors may specify which courses to take:

| Course | Additional Outcomes | State Minimum Core |
| :--- | :--- | :--- |
| ANTH 1013/ | 4.2 | Science |
| ANTH 1011L |  |  |
| ASTR 2003/ No Science <br> ASTR 2001L   <br> BIOL 1524 No Science <br> BIOL 1543/BIOL 1541L No Science <br> BIOL 1584 No Science |  |  |


| BIOL 1603/BIOL 1601L | No | Science |
| :---: | :---: | :---: |
| BIOL 1613/BIOL 1611L | No | Science |
| BIOL 2213/BIOL 2211L | No | Science |
| BIOL 2443/BIOL 2441L | No | Science |
| CHEM 1053/ <br> CHEM 1051L | No | Science |
| CHEM 1073/ <br> CHEM 1071L | No | Science |
| CHEM 1103/ <br> CHEM 1101L | No | Science |
| CHEM 1123/ <br> CHEM 1121L | No | Science |
| CHEM 1223/ <br> CHEM 1221L | No | Science |
| ENSC 1003/ <br> ENSC 1001L | 5.1 | Science |
| ENSC 1003H | 5.1 | Science |
| ENTO 1023/ <br> ENTO 1021L | No | Science |
| GEOS 1113/ | No | Science |
| $\begin{aligned} & \text { GEOS } 1133 / \\ & \text { GEOS } 1131 \mathrm{~L} \end{aligned}$ | No | Science |
| GEOS 1154 | No | Science |
| PHYS 1023/ <br> PHYS 1021L | No | Science |
| PHYS 1034 | No | Science |
| PHYS 1044 | No | Science |
| PHYS 1054 | No | Science |
| PHYS 2013/ <br> PHYS 2011L | No | Science |
| PHYS 2033/ <br> PHYS 2031L | No | Science |
| PHYS 2054 or PHYS 2054H | No | Science |
| PHYS 2074 or PHYS 2074H | No | Science |

## Goal 4

Expand diversity awareness, intercultural competency, and global learning.

The two learning outcomes for this goal are for students to learn to interact appropriately within intercultural contexts and develop familiarity with concepts of diversity in the United States.

## Learning Outcome 4.1

Upon reaching this goal, students will have developed knowledge and abilities to interact appropriately within intercultural contexts and engaging with complex global systems and issues.

Learning Indicators for Learning Outcome 4.1: To successfully achieve this outcome, students will complete at least three of these five indicators:

- Examine and interpret an intercultural experience from both one's own and another's worldview.
- Articulate the essential tenets of a cultural worldview other than one's own through an analysis of its components, including but not limited to
history, values, communication styles, politics, economy, and beliefs and practices.
- Identify and participate in cultural differences in verbal and nonverbal communication.
- Identify and analyze significant global challenges and opportunities in the human and natural world.
- Identify and analyze the historical and/or contemporary interrelationships among multiple global cultures.

Courses: The following courses are available to satisfy Learning Outcome 4.1. Some majors may specify which course to take:

| Course | Additional Outcomes | State Minimum Core |
| :---: | :---: | :---: |
| AGEC 2303 | No | No |
| AMPD 1013 | No | No |
| ANSC 4662 | No | No |
| ANTH 1023 | 3.3 | Social Sciences |
| ANTH 1033 | 3.2 | Humanities |
| ANTH 4013 | $\text { 1.2, 3.2, 3.3, } 5.1 \text { and }$ $6.1$ | No |
| ARAB 2013 | 3.2 | Humanities |
| ARAB 2016 or ARAB 2016H | 3.2 | Humanities |
| ARCH 1003 | 3.1 | Fine Arts |
| ARCH 1222 | No | No |
| CATE 3103 | 4.2 and 5.1 | No |
| CDIS 3253 | 4.2 and 6.1 | No |
| CIED 4403 | No | No |
| CLST 1003 or CLST 1003H | 3.2 and 5.1 | Humanities |
| CLST 1013 | 3.2 and 5.1 | Humanities |
| CLST 3013 or CLST 3013H | 3.2 | No |
| COMM 1023 or COMM 1023H | 3.3 | Social Sciences |
| ECON 3843 | No | No |
| ECON 3853 | No | No |
| EDST 3203 | No | No |
| ENGL 3223 | No | No |
| EXSC 2733 | No | No |
| EXSC 4833 or <br> EXSC 4833H | No | No |
| FREN 2003 | 3.2 | Humanities |
| GEOS 2003 or GEOS 2003H | No | Social Sciences |
| GERM 2003 | No | Humanities |
| GREK 2003 | 3.2 | Humanities |
| HDFS 1403 or HDFS 1403H | 3.3, 4.2 and 5.1 | Social Sciences |
| HDFS 2413 | 3.3 and 4.2 | Social Sciences |
| HDFS 2493 | 4.2 | No |
| HIST 1113 or HIST 1113H | 3.2 and 3.3 | Humanities or Social Sciences |
| HIST 1123 or HIST 1123H | 3.2 and 3.3 | Humanities or Social Sciences |
| HIST 2093 | 3.3 and 5.1 | Social Sciences |


| HORT 1103 | 4.2 | No |
| :---: | :---: | :---: |
| HRDE 4133 | No | No |
| HUMN 1114H | 3.3 and 5.1 | Social Sciences |
| HUMN 1124H | 3.2 and 5.1 | Humanities |
| HUMN 2114H | 3.3 and 5.1 | Fine Arts or Social Sciences |
| HUMN 2213 | 3.2 | Humanities |
| IARD 3815 | 6.1 | No |
| INST 2813 or INST 2813H | 3.3 and 5.1 | Social Sciences |
| ITAL 2003 | 3.2 | Humanities |
| ITAL 2113 | 3.2 | Humanities |
| LALS 2013 | 3.2 and 4.2 | Humanities |
| LARC 1003 | 3.1, 4.2 and 5.1 | Fine Arts |
| LARC 4123 | No | No |
| LATN 2003 | 3.2 | Humanities |
| MUSY 2003 or MUSY 2003H | 3.2 | Humanities |
| NURS 2032 | No | No |
| NURS 4023 | No | No |
| PBHL 4643 or PBHL 4643H | 4.2 | No |
| PHED 3623 | No | No |
| PHIL 3113 | No | No |
| PHIL 4113 | 4.2 | No |
| PLSC 2013 | 3.3 | Social Sciences |
| PLSC 2813 or PLSC 2813H | 3.3 and 5.1 | Social Sciences |
| RESM 2853 or RESM 2853H | 3.3 | Social Sciences |
| SCWK 3193 | 4.2 | No |
| SOCI 2013 or SOCI 2013H | 3.3 and 4.2 | Social Sciences |
| SOCI 2033 | 3.3 and 4.2 | Social Sciences |
| SPAN 2003 | 3.2 | Humanities |
| THTR 4953 | No | No |
| WLIT 1113 | 3.2 | Humanities |
| WLIT 1123 | 3.2 | Humanities |

## Learning Outcome 4.2

Upon reaching this goal, students will have developed familiarity with concepts of diversity in the United States.

Learning Indicators for Learning Outcome 4.2: To successfully achieve this outcome, students will complete at least three of these five indicators:

- Identify and describe examples of historical and present day issues related to diversity and inclusion in the United States.
- Explain the historical and/or contemporary construction of difference through analysis of power structures, privilege, and explicit or implicit prejudice, and their roles in fostering discrimination and inequalities in the United States, whether cultural, legal, political, or social.
- Describe the advantages of inclusion by identifying and analyzing notions of inclusivity and pathways for cultivating inclusion at all levels of society, whether cultural, legal, political, or social.
- Analyze the historical and/or contemporary development of group agency and assess its role in addressing discrimination and inequalities in the United States.
- Demonstrate problem-solving and change management skills for achieving social equity.

Courses: The following courses are available to satisfy Learning Outcome 4.2. Some majors may specify which course to take:

| Course | Additional Outcomes | State Minimum Core |
| :---: | :---: | :---: |
| AAST 2023 | 3.2 | Humanities |
| AMPD 4053 | No | No |
| ANTH 1013/ <br> ANTH 1011L | 3.4 | Science |
| ARCH 1013 | 3.2 | Humanities |
| ARCH 4433 | 1.2 | No |
| CATE 3103 | 4.1 and 5.1 | No |
| CDIS 3253 | 4.1 and 6.1 | No |
| CLST 3023 | 1.2 and 3.2 | No |
| COMM 1003 or COMM 1003H | 3.1 | Fine Arts |
| COMM 1233 | 3.2 | Humanities |
| ECON 3533 | No | No |
| GEOS 1123 | No | Social Sciences |
| GNST 2003 or GNST 2003H | 3.2 | Humanities |
| HDFS 1403 or HDFS 1403H | 3.3, 4.1 and 5.1 | Social Sciences |
| HDFS 2413 | 3.3 and 4.1 | Social Sciences |
| HDFS 2493 | 4.1 | No |
| HDFS 2603 | 3.3 and 5.1 | Social Sciences |
| HIST 2003 | 3.2 and 3.3 | Humanities, Social <br> Sciences or U.S. <br> History/Government |
| HIST 2013 | 3.2 and 3.3 | Humanities, Social <br> Sciences or U.S. <br> History/Government |
| HORT 1103 | 4.1 | No |
| HRDE 4213 | No | No |
| IARD 4813 | No | No |
| LALS 2013 | 3.2 and 4.1 | Humanities |
| LARC 1003 | 3.1, 4.1 and 5.1 | Fine Arts |
| LARC 4385 | No | No |
| MLIT 1333 | 3.1 | Fine Arts |
| NURS 4063 | No | No |
| PBHL 4643 or PBHL 4643H | 4.1 | No |
| PHIL 4113 | 4.1 | No |
| PHIL 4323 | No | No |
| PHIL 4333 | No | No |
| PLSC 2003 | 3.3 | Social Sciences or U.S. History/Government |
| SCWK 3193 | 4.1 | No |
| $\begin{aligned} & \text { SOCI } 2013 \text { or } \\ & \text { SOCI } 2013 \mathrm{H} \end{aligned}$ | 3.3 and 4.1 | Social Sciences |


| SOCI 2033 | 3.3 and 4.1 | Social Sciences |
| :--- | :--- | :--- |
| SOCI 3193 | No | No |

## Goal 5

## Demonstrate critical thinking and ethical reasoning.

## Learning Outcome 5.1

Upon reaching this goal, students will be able to demonstrate essential principles of critical thinking and ethical reasoning and apply them to the evaluation and construction of rational and moral arguments.

Learning Indicators for Learning Outcome 5.1: To successfully achieve this outcome, students will complete at least three of these five indicators:

- Identify and describe key concepts and principles related to critical thinking.
- Explain and contrast competing ethical theories, each of which articulates at least one principle for ethical decision-making
- Use recognized principles of critical thinking or ethical reasoning to analyze, evaluate, and respond to rational and moral argumentation presented orally and/or in writing.
- Describe key fallacies and identify them in context.
- Demonstrate the use of recognized principles of critical thinking or ethical reasoning to construct complex rational and moral arguments orally and/or in writing.

Courses: The following courses are available to satisfy Learning
Outcome 5.1. Some majors may specify which course to take:

| Course | Additional Outcomes | State Minimum Core |
| :---: | :---: | :---: |
| AGED 4003 | 1.2 | No |
| AMPD 4093 | No | No |
| ANTH 4013 | $\begin{aligned} & 1.2,3.2,3.3,4.1 \text { and } \\ & 6.1 \end{aligned}$ | No |
| ARCH 4523 | No | No |
| CATE 3103 | 4.1 and 4.2 | No |
| CLST 1003 or CLST 1003H | 3.2 and 4.1 | Humanities |
| CLST 1013 | 3.2 and 4.1 | Humanities |
| COMM 1313 | 1.2 | No |
| DASC 2133 | No | Humanities |
| EDST 4003 or EDST 4003 H | No | No |
| ENGL 3103 | 1.2 and 6.1 | No |
| ENSC 1003/ <br> ENSC 1001L | 3.4 | Science |
| ENSC 1003H | 3.4 | Science |
| HDFS 1403 or HDFS 1403H | 3.3, 4.1 and 4.2 | Social Sciences |
| HDFS 2603 | 3.3 and 4.2 | Social Sciences |
| HIST 1001 | No | No |
| HIST 2093 | 3.3 and 4.1 | Social Sciences |
| HRDE 3333 | 1.2 | No |
| HUMN 1114H | 3.3 and 4.1 | Social Sciences |
| HUMN 1124H | 3.2 and 4.1 | Humanities |
| HUMN 2114H | 3.3 and 4.1 | Fine Arts or Social Sciences |


| IARD 4823 | 1.2 | No |
| :---: | :---: | :---: |
| INST 2813 or INST 2813H | 3.3 and 4.1 | Social Sciences |
| LARC 1003 | 3.1, 4.1 and 4.2 | Fine Arts |
| LARC 5613 or LARC 5613H | No | No |
| NURS 4203 | No | No |
| PBHL 3202 or PBHL 3202H | No | No |
| PHIL 1003 | No | No |
| PHIL 2003, <br> PHIL 2003C or <br> PHIL 2003H | 3.2 | Humanities |
| PHIL 2103 or PHIL 2103C | 3.2 | Humanities |
| PHIL 2203 or PHIL 2203C | No | Humanities |
| PHIL 3103 | No | Humanities |
| PHIL 4253 | No | No |
| PLSC 2813 or PLSC 2813H | 3.3 and 4.1 | Social Sciences |
| SEED 4063 | 1.2 | No |
| SPAN 4133 | 6.1 | No |

## Goal 6

Gain the ability to synthesize, integrate, and apply knowledge developed throughout the undergraduate years.

## Learning Outcome 6.1

Upon reaching this goal, students will be able to reflect upon and explain how they use the skills and abilities embodied in Goals 1 through 5 in completing an integrative project in their major during their junior or senior year.

Learning Indicators for Learning Outcome 6.1: To successfully achieve this outcome, students will:

1. Produce a significant written paper, as defined by his or her major, or an equivalent project incorporating performance and/or multi-modal text and/or images
2. Explain in an additional document of at least 1,250 words the degree to which the completed assignment involves at least three of the following sets of skills and abilities:

- Written, oral, and/or multimodal communication abilities
- Quantitative literacy
- Characteristics of inquiry and action in the major and in one of the Learning Outcomes under Goal 3 besides the disciplinary area of the major
- Diversity awareness and/or intercultural competency
- Critical thinking and/or ethical reasoning

Courses: The following courses are available to satisfy Learning Outcome 6.1. Each major program may specify which course or courses to take:

| Course | Additional Outcomes | State Minimum Core |
| :--- | :--- | :--- |
| ACOM 475V | No | No |
| AGEC 401V | No | No |


| AGEC 4041 | No |
| :---: | :---: |
| AGED 475V | No |
| AGLE 475V | No |
| AMPD 4023 | No |
| AMPD 4063 | No |
| ANSC 4993 | No |
| ANTH 4013 | 1.2, 3.2, 3.3, 4.1 and 5.1 |
| ARAB 4053 | 1.2 |
| ARAB 4213 | 1.2 |
| ARCH 4016 | No |
| ARED 4003 | No |
| ARHS 4973 | No |
| ARTS 4003 | No |
| ARTS 4183 | No |
| ARTS 4193 | No |
| ARTS 4223 | No |
| ARTS 4483 | No |
| ARTS 4573 | No |
| ARTS 4743 | No |
| ARTS 4893 | No |
| ARTS 4993 | 1.2 |
| ASTM 475V | No |
| BENG 4823 | No |
| BMEG 4823 | No |
| CATE 406X | 1.2 |
| CDIS 3253 | 4.1 and 4.2 |
| CHEG 4443 or CHEG 4443H | No |
| CIED 4143 | No |
| CIED 4533 or CIED 4533H | No |
| CLST 4003H | 1.2 |
| CSCE 3513 | No |
| CSES 3023 | No |
| CSES 462V | No |
| DASC 4993 or DASC 4993H | No |
| EDST 4933 | No |
| ELEG 4071 or ELEG 4071H | No |
| ENGL 3103 | 1.2 and 5.1 |
| ENGL 4303 | No |
| ENGL 4903 | No |
| EXED 475V | No |
| EXSC 405V | No |
| EXSC 4903 | No |
| FDSC 4713 | No |
| FREN 4113 | No |
| FREN 4223 | No |
| FREN 4233 | No |
| FREN 4243 | No |
| FREN 4663 | No |


| GDES 4383 | No | No | SEVI 3013 or | No | No |
| :---: | :---: | :---: | :---: | :---: | :---: |
| GEOS 4924 | 1.2 | No | SEVI 3013H |  |  |
| GERM 4213 | 1.2 | No | SPAN 4133 | 5.1 | No |
| HDFS 4373 | No | No | SPED 4573 | No | No |
| HDFS 4493 | No | No | THTR 4991 | No | No |
| HIST 4893 or HIST 4893H | 1.2 | No | State Minimum Core |  |  |
| HIST 498 V or HIST 498VH | 1.2 | No | The University of Arkansas has adopted the "state minimum requirements" of 35 semester-credit-hours of courses that are required of all baccalaureate degree candidates. This is in compliance with Arkansas |  |  |
| HORT 472V | No | No |  |  |  |  |  |
| HOSP 4663 | No | No | Act 98 of 1989 and the subsequent action of the Arkansas State Board of Higher Education. Since 1991, all state institutions of higher education in |  |  |
| HOSP 4693 | No | No |  |  |  |  |  |
| HRDE 4333 | No | No | Arkansas have had a 35 -hour minimum core requirement with specified hours in each of seven academic areas in the table below. The university |  |  |
| IARD 3815 | 4.1 | No | has identified those courses that meet the minimum requirement, and they are listed in the chart below. |  |  |
| IDST 4013 | No | No |  |  |  |  |  |
| INEG 4924 | No | No | Some colleges and programs have specified which courses to use, so |  |  |
| INST 399VH | No | No |  |  |  |  |  |
| INST 406V | No | No | courses from the options below. Completion of these courses will also |  |  |
| INST 4913 or INST 4913H | 1.2 | No | satisfy many of the university's general education learning outcomes (p.72). |  |  |
| INST 493V or INST 493VH | No | No | Areas | Hours State Minimum Core |  |
| ITAL 4123 | 1.2 | No | Mathematics ${ }^{1}$ | 6 | ENGL 1013, ENGL 1023, ENGL 1033 |
| ITAL 4143 | 1.2 | No |  | 3 | MATH 1203, MATH 1313, MATH 1514 or any higher-level mathematics course with MATH 1203 as a prerequisite or as required by major; to include STAT 2303 |
| JOUR 4981 | No | No |  |  |  |
| LARC 4033 | No | No |  |  |  |
| LARC 4395 | No | No | Science ${ }^{2}$ (Students required to take corresponding lecture/lab combinations as listed) | 8 | ANTH 1013/ANTH 1011L, ASTR 2003/ ASTR 2001L, BIOL 1524, BIOL 1543/ |
| MATH 4933 | 1.2 | No |  |  |  |
| MEEG 4192 | No | No |  |  |  |
| MUED 4031 | No | No |  |  | BIOL 1601L, BIOL 1613/BIOL 1611L, |
| MUHS 4253 or MUHS 4253H | No | No |  |  | BIOL 2213/BIOL 2211L, BIOL 2443/ <br> BIOL 2441L, CHEM 1053/CHEM 1051L, <br> CHEM 1073/CHEM 1071L. CHEM 1103/ |
| NURS 4092 | 1.2 | No |  |  | CHEM 1073/CHEM 1071L, CHEM 1103/ CHEM 1101L, CHEM 1123/CHEM 1121L, |
| NURS 4712 | No | No |  |  | CHEM 1203/CHEM 1201L, CHEM 1223/ CHEM 1221L, ENSC 1003/ENSC 1001L, |
| NUTR 4001 | No | No |  |  |  |
| PBHL 4043 | No | No |  |  | ENTO 1023/ENTO 1021L, GEOS 1113/ GEOS 1111L, GEOS 1133/GEOS 1131L, |
| PHED 4733 | No | No |  |  |  |
| PHIL 4983 | 1.2 | No |  |  | GEOS 1154, PHYS 1023/PHYS 1021L, PHYS 1034, PHYS 1044, PHYS 1054, |
| PHYS 4991 | 1.2 | No |  |  | PHYS 2013/PHYS 2011L, PHYS 2033/ |
| PLSC 4153 | 1.2 | No |  |  | PHYS 2031L, PHYS 2054, PHYS 2074 |
| PLSC 4913 or PLSC 4913H | 1.2 | No | Fine Arts | 3 | ARCH 1003, ARHS 1003, COMM 1003, DANC $1003^{4}$, ENGL $2023^{4}$, <br> HUMN $2114 \mathrm{H}^{4}$, LARC 1003, MLIT 1003, MLIT 1013, MLIT 1333, THTR $1003^{4}$, THTR $1013^{4}$, THTR 1683 , THTR 1883 |
| PLSC 499VH | 1.2 | No |  |  |  |
| POSC 402V | No | No |  |  |  |
| POSC 4213 | No | No |  |  |  |

Any intermediate level foreign language ${ }^{3}$, AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1013, COMM 1233, DANC $1003^{4}$, DASC 2133, ENGL 1213, ENGL $2023^{4}$, GNST 2003, HIST $1113^{4}$, HIST $1123^{4}$, HIST $2003^{4}$, HIST $2013^{4}$, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, PHIL 2003, PHIL 2103, PHIL 2203, PHIL 2303, PHIL 3103, THTR $1003^{4}$, THTR $1013^{4}$, WLIT 1113, WLIT 1123
U.S. History or $3 \quad$ HIST $2003^{4}$, HIST 2013 ${ }^{4}$, PLSC $2003^{4}$ Government

Social Sciences (Select from at least two different fields of study)

AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, GEOS 1123, GEOS 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST $1113^{4}$, HIST $1123^{4}$, HIST $2003^{4}$, HIST $2013^{4}$, HIST 2093, HUMN 1114H, HUMN 2114H ${ }^{4}$, INST 2813, PLSC 2003 ${ }^{4}$, PLSC 2013, PLSC 2203, PLSC 2813, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2033, STEM 2003
${ }^{1}$ Some students majoring in math, engineering, science and business may be required to take a higher math as part of the State Minimum Core.
2 Some students majoring in math, engineering, science, education and health-related professions may be required to take higher or specific science courses as part of the State Minimum Core.
${ }^{3}$ Numbered at the 2000 level. See Department of World Languages, Literatures and Cultures (p.590) in the Fulbright College of Arts and Sciences chapter.
4 If not selected to meet another category.

## Rationale for U of A State Minimum Requirements

In order to prepare its students for lives of the highest individual quality and the greatest potential contribution to the making of a better world, the University of Arkansas has developed a comprehensive program of general education. Although the basic skills, knowledge, methodologies, and judgments derived from experience in the core area set forth here may provide the basis for a major or professional concentration, the aims of these core requirements are not career specific. Rather, the following areas are designed to develop the tools for critical thinking and effective communication, an understanding of our richly diverse human heritage, the flexibility to adapt successfully to a rapidly changing world, a capacity for lifelong learning, and an enthusiasm for creativity.

## English/Communication (6 hours)

Courses offered in this area are designed to develop the ability to organize ideas and to communicate them in grammatically correct written English with clarity, precision, and syntactical maturity.

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) and ENGL 0001 Writing Lab

[^0]- Below 490 on the Evidence-Based Reading and Writing section of the SAT and high school GPA less than 3.20
- Below 255 on the Accuplacer Next-Generation Writing section and high school GPA less than 3.20

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)

- ACT English scores of 19-27, or
- SAT Evidence-Based Reading and Writing scores of 490-620, or
- Accuplacer Next-Generation Writing section score of 255 or higher, or
- High school GPA of 3.20 or higher

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) or ENGL 1013H Honors Composition I

- ACT English scores of 28-29, or
- SAT Evidence-Based Reading and Writing scores of 630-680

Students with ACT English scores of 30 or greater or SAT EvidenceBased Reading and Writing scores of 690 or greater may enroll in ENGL 1013H and ENGL 1023H or elect exemption. Some degree programs require credit in composition, and students should confer with their advisors before exempting.

## Fine Arts/Humanities (6 hours)

Courses presented in this area are drawn from the study of human thought, emotion, values, culture, and aesthetics. They are designed to develop the capacity for reflection, an appreciation of our own diverse culture and a tolerance of those foreign to us, and a heightened aesthetic and ethical sensibility. The courses are not performance-based, but offer students a basis for the gradual acquisition of broad cultural literacy.

## Mathematics (3 hours)

Courses offered in this area are designed to develop the student's ability to understand the diverse mathematical concepts that shape our increasingly technical culture. Core mathematics courses presuppose the ability to apply mathematical techniques at the level of high school algebra and geometry. The specific course(s) selected will depend upon each student's curriculum, but no course below college algebra may be used to fulfill core requirements.

## Science (8 hours)

A primary goal of these courses is to develop an appreciation of the basic principles that govern natural phenomena and the role of experiment and observation in revealing these principles. Students should acquire an understanding of the relationship between hypothesis, experiment, and theory, and develop the skills common to scientific inquiry, including the ability to frame hypotheses and defend conclusions based on the analysis of data. These courses are designed to prepare a student for informed citizenship by illustrating the importance of science and technology to the present and future quality of life and the ethical questions raised by scientific and technological advances.

## Social Science (9 hours)

The purpose of the social science core is to introduce students to the breadth of inquiry in the social sciences - such as the study of ideas, the behavior of individuals, groups, institutions, and their interactions. The core should expose students to the history of and the challenges encountered in our complex, culturally diverse world.

## American History or Government (3 hours)

Under Arkansas law, no undergraduate degree may be granted to any student who has not passed a college course in American history or civil government. Courses offered by the University of Arkansas, any one of which will meet this requirement, are HIST 2003, HIST 2013, and PLSC 2003.

## Graduation Rates

In accordance with the Student Right-to-Know and Campus Security Act of 1990, the following table is a summary of the institution's six-year graduation rates. The top numbers reflect those degree-seeking freshmen who enrolled in 2016 and graduated by 2022; the Student Athlete numbers are the cohort who enrolled in 2016 and graduated by 2022. They will be updated to the new cohort in fall 2022.

| Year | Total Graduates Men | Total Graduates Women | Total Graduates Overall | Percent of Total Men | Percent of Total Women | Percent Overall |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| All Degree-Seeking Freshmen |  |  |  |  |  |  |
| The graduation rate for all firsttime, full-time, degree-seeking new freshmen. | 2,216 | 2,722 | 4,938 | 65.6\% | 72.1\% | 69.2\% |
| Student Athletes <br> Who Received <br> Athletically Related <br> Aid |  |  |  |  |  |  |
| The graduation rate for all firsttime, full-time, degree-seeking new freshmen who received athletic aid during the first year of enrollment. |  |  |  | 59\% | 65\% | 62\% |
| Student-Athlete Graduation Success Rate |  |  |  |  |  |  |


| The Student- | 86\% | 90\% | 88\% |
| :---: | :---: | :---: | :---: |
| Athlete |  |  |  |
| Graduation |  |  |  |
| Success Rate |  |  |  |
| was developed |  |  |  |
| by the NCAA |  |  |  |
| to supplement |  |  |  |
| the Federal |  |  |  |
| Graduation |  |  |  |
| Rate. It includes the Federal |  |  |  |
| Graduation Rate |  |  |  |
| Cohort, and also |  |  |  |
| includes students |  |  |  |
| who first enroll in |  |  |  |
| the spring term |  |  |  |
| and also students |  |  |  |
| who transfer |  |  |  |
| in. It discounts |  |  |  |
| student-athletes |  |  |  |
| who leave |  |  |  |
| the institution |  |  |  |
| with eligibility |  |  |  |
| remaining, but |  |  |  |
| would have been |  |  |  |
| academically |  |  |  |
| eligible to |  |  |  |
| compete had they |  |  |  |
| remained. It is |  |  |  |
| more a reflection |  |  |  |
| of the success |  |  |  |
| of students |  |  |  |
| who remain at |  |  |  |
| the institution |  |  |  |
| for all years of |  |  |  |
| their athletic |  |  |  |
| eligibility. The |  |  |  |
| Student-Athlete |  |  |  |
| Graduation |  |  |  |
| Success Rate |  |  |  |
|  |  |  |  |
|  |  |  |  |
| annually in |  |  |  |
| conjunction |  |  |  |
| with the Federal |  |  |  |
| Graduation Rate |  |  |  |
| Report. |  |  |  |

## Honors and Scholars

## Dean's and Chancellor's List

After the end of each semester, all colleges and schools in the university publish an honor roll of the names of the undergraduate students who achieve a 3.75 to 4.00 grade-point average. This honor roll is the Dean's List.

In addition, a Chancellor's List is published each semester that recognizes those undergraduate students who achieve a 4.00 grade-point average.

Selection for the Dean's List and Chancellor's List will be evaluated as follows:

- Students must complete a minimum of 12 semester hours normally required to graduate and these hours must be graded with the standard letter grading basis
- Students will be allowed $P$ grades during the semester only in course hours that exceed the 12 -hour letter grade requirement, i.e., a student in 15 hours may have up to 3 hours of $P$ grades)

Students who earn any PD or NC grades during the semester will not be eligible for the Dean's or Chancellor's List

## First-Ranked Senior Scholars

A first-ranked senior scholar must have a cumulative grade-point average of 4.00 on all course work completed up through the term prior to their
graduation term, and must have applied for graduation for a semester to be a member of the appropriate class and must have completed all courses required for the baccalaureate degree at the University of Arkansas, Fayetteville, or in a program of study approved by the Director of Honors or other designee in the college in which the student is enrolled. In determining the cumulative grade-point average for the purposes of such awards, grade forgiveness/exclusion is not accepted. Due to the disruption caused by COVID-19, P grades will be allowed during the spring and summer 2020 terms. Students earning PD or NC grades during these terms will not be eligible for first-ranked senior scholar status.

## Senior Scholar

Selected graduating seniors who are among those with the highest gradepoint average up through the term prior to their graduation term and who have completed at least half of their degree work at the University of Arkansas are recognized by each undergraduate college as a Senior Scholar.

## Graduation Honors

For detailed, discipline-specific information, see the honors section for each college or school major. Students must be members of the Honors College to earn the distinction of graduating cum laude, magna cum laude or summa cum laude. The honors program in the college or school of major sets specific requirements for graduating with honors including a minimum of 12 honors credit hours and the completion of an undergraduate thesis. A combination of honors credit hours, thesis quality, and GPA requirements lead to Latin designation of cum laude, magna cum laude or summa cum laude.

## Requirements for Graduation

## State Minimum Core Requirements

In addition to the requirements listed below, undergraduate students must successfully complete 35 hours of courses in the State Minimum Core. Find more on the State Minimum Core page (p. 81).

## Enrollment Requirement

To ensure the opportunity to engage with faculty and peers in their area of study at the University of Arkansas, students must fulfill the $U$ of $A$ Enrollment Requirement:

1. Earn a minimum of 30 semester hours at the University of Arkansas, Fayetteville campus. This includes UA faculty-led study abroad classes, online/on-campus classes, and courses offered through the Global Campus; and all other courses paid toward Fayetteville campus tuition and fees;
2. These 30 semester hours are to be upper-division semester hours required for the completion of a degree program;
3. Additional hours in residence can be required for completing a minor;
4. Hours earned in another school or college at the University of Arkansas, Fayetteville, may be used to satisfy this requirement - with appeal of appropriate faculty curriculum committee;
5. Appeals to the standards identified in this policy should be made to the Academic Standards Committee.

## Minimum Credits

All students awarded a baccalaureate degree must have a minimum of 120 credit hours. Individual programs may require additional hours. Courses not marked in the course description as eligible to be repeated for degree credit may be included in this total only once.

## Minimum Grade-Point Average

No student will be allowed to graduate if the student has earned below a 2.00 GPA in credit earned at this institution. No student will be allowed to graduate if that student's academic standing is other than good standing.

## Freshman Course Requirement

University Perspectives is an innovative required one-hour freshman course designed to enhance student success. A "flipped" class, it will have an online component in addition to in-class interaction. The course will emphasize the transition to the university and university-level work by addressing topics such as critical thinking and civic engagement. Other units intended to enhance overall student success include - but are not limited to - note-taking, time management, and academic integrity. All freshmen must complete UNIV 1001 by the end of the first academic year.

## Application for Graduation

Students who plan to graduate must file an official application to do so. Applications should be filed for the term in which degree requirements will be completed. A graduation fee will be required at the time of application.

To ensure that students will be certified for graduation in a timely manner, the following graduation application deadlines have been established:

| Date | Description |
| :--- | :--- |
| October 1 | for students graduating in Fall |
| March 1 | for students graduating in Spring |
| July 1 | for students graduating in Summer |

Students must apply by the established deadline for that term. Any student missing the deadline may apply to graduate in a subsequent term.

A student who fails to complete the degree during the intended semester must contact the Office of the Registrar to renew the application for the term in which the degree requirements will be completed.

## Other Graduation Requirements

Individual colleges and schools may have special graduation requirements, in addition to degree program requirements. Consult the college or school section in this catalog for statements of additional requirements.

## Degree Program Requirements

A student's degree program requirements are normally those specified in the catalog for the student's first year of enrollment. However, students may choose to meet the program requirements specified in a catalog for a later year and, under some circumstances, students may be required to meet degree program requirements incorporated into the curriculum at a level beyond that at which the student is enrolled.

Students who transfer from institutions with articulation agreements with the university may also be allowed to meet the university program requirements in effect during their first year of enrollment in those institutions, subject to the time limits described below and the availability of course work. Students who transfer to a different degree program may be required to meet the program requirements specified in the catalog for the year of entry into that program. Students who are not enrolled for a period of two years or longer may be required to reenter under program requirements in the current catalog. Students who wish to be granted a degree on the basis of requirements specified in a catalog more than
seven years old may be required to petition the college or school to be allowed to do so.

Students are expected to keep themselves informed regarding program requirements and changes.

## Additional Bachelor's Degree

A student seeking two or more undergraduate degrees from the University of Arkansas must meet the graduation requirements for each degree, including all university, college or school, and departmental requirements as stated in the catalog. When two or more undergraduate degrees are being completed concurrently, or while being continuously enrolled at the University of Arkansas, course work for the first degree may be used to satisfy requirements for the second degree. Students must apply to graduate individually for each degree. A student earning two or more bachelor's degrees in a single academic year will have their name appear only once on Senior Walk.

A student who previously completed a bachelor's degree from the University of Arkansas, or from any other institution, must complete at least 30 hours of additional, not necessarily subsequent, course work in residence from the University of Arkansas. More than 30 hours of course work may be required to satisfy all university, college or school, and departmental requirements.

## Student Grievances and Appeals

## Informal Resolution

Undergraduate students who wish to seek further review of an academic or non-academic decision or action by the University or a University employee (in an official capacity) that the student contends was in violation of written campus policies, or constitutes unfair or unequal application of such policies, should first seek to resolve such concerns through informal discussions. In particular, grievances regarding academic matters should generally begin with informal discussions with the student's instructor or with the faculty member supervising a course. If such informal discussions do not reach a satisfactory resolution, then the student may pursue a grievance following the steps in this policy. Undergraduate students should be free of retaliation from university employees for filing a grievance under this policy or the grade appeal policy or through participation in the investigation of a grievance as a witness of such a claim. Undergraduate students who seek further review of a claim of retaliation shall also follow the steps in this policy.

## Applicability of Policy

This policy applies to undergraduate students enrolled in traditional courses as well as online courses. This policy does not apply to matters which are covered by other campus policies or appeal procedures, including, but not limited to, the following:

- grade appeals (see description of process below);
- allegations of discrimination or harassment (including sexual harassment) under the university's non-discrimination policy;
- allegations of failure to provide reasonable accommodations for a disability;
- financial aid;
- enforcement of campus parking regulations;
- violations of the Code of Student Life or the university's Academic Dishonesty Policy; or
- violations of the university's Research Misconduct Policy.

In particular, matters involving allegations of unlawful harassment (including sexual harassment), discrimination and/or retaliation should be reported to the university's Office of Equal Opportunity and Compliance, and matters involving alleged failure to provide reasonable accommodations for a disability should be pursued through the grievance process described on the university's Center for Educational Access website. Additional information about each of the above policies is available on the university's website and through the Office of the Dean of Students.

Furthermore, this grievance process is intended to address alleged violations of university policy with respect to individual students, rather than disagreements with existing policies. Questions regarding the applicability of this grievance policy to a particular issue will be determined by the dean of students, in consultation with the provost and other university officials, as necessary.

## Formal Grievance Process

If efforts to resolve a grievance informally are not successful, no later than 60 calendar days following the decision or action that the student seeks to have reviewed, the student shall put the grievance in writing, clearly and succinctly stating the facts relating to the grievance and which policies the student contends have been violated or misapplied. For an academically related grievance, the written grievance shall be submitted to the academic unit chair, head or his or her designee; if the concern relates to the chair, then the written grievance may be submitted to the Dean who may appoint an alternate official to consider the grievance. For a non-academic matter, the grievance should be considered by an administrator with authority over the relevant area. The administrator considering the grievance will review the material provided by the student, and may, at the administrator's discretion, gather any additional information that will be helpful to a decision, whether in writing or through meeting with the student or other persons involved. The administrator reviewing the grievance shall make a decision, in writing, within 10 working days after receiving the student's grievance (excluding the day of receipt), or as soon as possible thereafter. The decision will explain the basis for the decision, remedial steps required, if any, and the procedure for requesting an appeal.

## Appeals

If the student believes the grievance decision is in error, then that person may, within 10 working days after the date of the written decision, appeal the decision to the relevant dean (for an academic matter) or to the relevant vice chancellor or a designee (for non-academic matters). The administrator considering the appeal will review the material provided by the student, the grievance decision, any other material which has been assembled regarding the matter, and any applicable university policies and may, at his or her discretion, gather any additional information that will be helpful to a decision, whether in writing or through meeting or consulting with any individuals deemed necessary in the administrator's discretion. The administrator reviewing the appeal shall make a decision, in writing, within 10 working days of receiving the student's grievance, or as soon as possible thereafter. The appeal decision shall be final.

## External Complaint Resolution

If a grievance cannot be resolved internally within the university, a student may file a complaint with the appropriate authority. Students of
the University of Arkansas, residing in Arkansas or attending from out-of-state, must file complaints in writing with the Arkansas Division of Higher Education (ADHE), 423 Main Street, Suite 400, Little Rock, AR 72201, within 20 days of completing the institution's grievance process.
As required by ADHE, the grievant must provide a statement from the institution verifying that the institution's appeal process has been followed. ADHE inquiries are limited to courses/degree programs certified by the Arkansas Higher Education Coordinating Board (AHECB) under Ark. Code § 6\#61\#301 and to matters related to the criteria for certification. Students may also contact the Higher Learning Commission (http:// catalog.uark.eduttps://www.hlcommission.org/), which is the university's regional accrediting body, at 230 S . LaSalle St., Suite 7-500, Chicago, IL 60604, or at info@hlcommission.org or 1-800-621-7440. This information is provided pursuant to 34 CFR $\S 668.43(b)$.

## Grade Appeal Structure for Undergraduate Students

If a student questions the fairness or accuracy of a grade, there is recourse through a student grade appeal structure. Disagreements shall be heard that allege the instructor's policy was not applied consistently to all students, differed substantially from the announced policy, or that a policy was not announced. All grievances concerning course grades must be filed within one calendar year of the end of the term in which the grade that is being appealed was assigned. The procedures are:

The student should first discuss the matter with the instructor involved, doing so as soon as possible after receiving the grade. The instructor should be willing to listen, to provide explanation, and to be receptive to changing the grade if the student provides convincing argument for doing so. The student's questions may be answered satisfactorily during this discussion.

If the student chooses to pursue the grievance and submits an appeal, the student shall take the appeal in written form to the appropriate department or unit chairperson of the program in which the course was instructed. The appeal should present the basis of the appeal and merits of the grievance with evidence the student may have to support the appeal. If that person determines the case has no merit, that person will inform the student and the instructor. If that person believes the complaint may have merit, that person will discuss it with the instructor. In the case that the department or unit chairperson is the instructor, the student should submit an appeal in written form to the appropriate dean of the college in which the course was instructed.

If the matter remains unresolved, it will be referred to an ad hoc committee composed of programmatic or departmental faculty. This committee would be appointed by the department or unit chairperson and should have at least three faculty representing the program or department in which the course was instructed. In the case where there are fewer than three faculty within the program or department to serve on the committee, faculty members from a closely related discipline will be appointed to serve. In the case where the department or unit chairperson is the instructor of the grievance, the ad hoc committee would be appointed by the appropriate dean of the college in which the course was instructed. The instructor whose grade is being challenged shall not serve on this ad hoc committee. The committee will examine available written information on the dispute, will be available to meet with the student and with the instructor, and will meet with others as it sees fit.

If the ad hoc faculty committee majority determines, through its inquiries and deliberations, that the grade should not be changed, the committee should communicate this conclusion to the student, the faculty member,
and the chairperson. If the ad hoc faculty committee majority determines that the grade should be changed, the committee will request that the instructor make the change and provide the instructor with a written explanation. Should the instructor decline, he or she must provide an explanation for refusing in writing to the ad hoc faculty committee.

If the ad hoc faculty committee, after considering the instructor's written explanation, concludes it would be unjust to allow the original grade to stand, it may then recommend to the department chairperson, or dean in the case where the department chairperson is the faculty whose grade is being challenged that the grade be changed. That individual (department chair or dean) will provide the instructor with a copy of the recommendation and will ask the instructor to implement it. If the instructor continues to decline, the chairperson or dean is then obligated to change the grade, notifying the instructor and the student of this action. Only the chairperson or dean has the authority to effect a grade change over the objection of the instructor who assigned the original grade, and only after the foregoing procedures have been followed.

## Reporting Sexual Misconduct

For allegations of sexual misconduct, including, but not limited to, sexual harassment or acts of sexual assault, domestic violence, dating violence, stalking and other forms of sex/gender discrimination, the University has designated a Title IX Coordinator with overall responsibility for oversight of the University's compliance with its obligations under Title IX. All complaints or any concerns about sexual conduct should be submitted to the university's Title IX Coordinator, the Department of Education's Assistant Secretary for Civil Right, or both:

Aisha Kenner<br>Title IX Coordinator<br>405 Administration Building<br>University of Arkansas<br>Fayetteville, AR 72701<br>Office: 479-575-7111<br>Cell: 479-409-9972<br>Email: akenner@uark.edu<br>Alternate email for Title IX: titleix@uark.edu

U.S. Department of Education

Office of Civil Rights
1-800-421-3481
ocr@ed.gov

## Student Privacy

## Annual Notice of Student Rights Under the Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They are as follows:

1. The right to inspect and review the student's education records, with some exceptions under the Act, within 45 days of the day the university receives a request for access. Students should submit to the Office of the Registrar written requests that identify the record(s) they wish to inspect. The university official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the university official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of the student's education records that the student believes are inaccurate or misleading. Students should write the university official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. A sample form, which may be used in making this request, is contained in the appendix to UA Systemwide Policies and Procedures 515.1 (http://www.uasys.edu/ policies/ua-system-policies/).

If the university decides not to amend the record as requested by the student, the university will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing and is also contained in UA Systemwide Policies and Procedures 515.1 (http://www.uasys.edu/policies/ua-system-policies/).
3. The right to withhold consent of disclosure of directory information, defined as the following information: the student's name; date of birth; address; telephone number; email address; major field of study; classification by year; number of hours in which enrolled and number completed; participation in officially recognized activities and sports; weight and height of members of athletic teams; dates of attendance including withdrawal dates; degrees, honors, and awards received, including type and date granted; and photograph.

This information will be subject to public disclosure unless the student restricts such information through the appropriate settings in UAConnect, the student information system, or informs the Office of the Registrar in writing that he or she does not want this information designated as directory information.
4. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.

One exception, which permits disclosure without consent, is disclosure to school officials with legitimate educational interests. A school official is a person employed by the university in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the university has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an educational record to fulfill his or her professional responsibility. Upon request, the university also discloses education records without consent to officials for another school in which a student seeks or intends to enroll.

Postsecondary institutions may also disclose personally identifiable information from education records, without consent, to appropriate parties, including parents of an eligible student, in connection with a health or safety emergency. Under this provision, colleges and universities may notify parents when there is a health or safety emergency involving their son or daughter, even if the parents do not claim the student as a dependent.

There are several other exceptions to FERPA's prohibition against non-consensual disclosure of personally identifiable information from education records, some of which are briefly mentioned below. Under certain conditions (specified in the FERPA regulations), a school may
non-consensually disclose personally identifiable information from education records:

- to authorized representatives of the Comptroller General of the United States, the Attorney General of the United States, the U.S. Secretary of Education, and State and local educational authorities for audit or evaluation of Federal or State supported education programs, or for the enforcement of or compliance with Federal legal requirements that relate to those programs;
- to the National Student Clearinghouse for enrollment and degree reporting;
- to organizations conducting studies for or on behalf of the school making the disclosure for the purposes of administering predictive tests, administering student aid programs, or improving instruction;
- to officials of another school where the student seeks or intends to enroll, or where the student is already enrolled if the disclosure is for purposes related to the student's enrollment or transfer;
- to comply with a judicial order or a lawfully issued subpoena;
- to the victim of an alleged perpetrator of a crime of violence or a non-forcible sex offense concerning the final results of a disciplinary hearing with respect to the alleged crime; and
- to any third party the final results of a disciplinary proceeding related to a crime of violence or non-forcible sex offense if the student who is the alleged perpetrator is found to have violated the school's rules or policies. The disclosure of the final results only includes: the name of the alleged perpetrator, the violation committed, and any sanction imposed against the alleged perpetrator. The disclosure must not include the name of any other student, including a victim or witness, without the written consent of that other student.

5. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the university to comply with the requirements of FERPA. The name and address of the office that administers FERPA is as follows:

Family Policy Compliance Office
U.S. Department of Education

400 Maryland Avenue, SW
Washington DC 20202-4605
6. UA System Policy and Procedure 515.1 (http://www.uasys.edu/ policies/ua-system-policies/) serves as a supplement to the campus FERPA policy.
7. FERPA applies to students at the University of Arkansas at the point of their enrollment into courses.

## Photographic and Video Images

The university is proud to publish and display photographic and video images of $U$ of $A$ students, their activities and accomplishments. Any student who does not wish to be represented in such photographic and video images by the university should choose to withhold photos on the FERPA option on the university's student information system.

## Transfer of Credit

The following policies control the granting of credit for course work taken at other institutions:

1. Transfer credits are subject to a two-stage evaluation process. First, the eligibility of the hours for transfer is evaluated by the Office of the Registrar based upon decisions of appropriate faculty,
the Arkansas Course Transfer System (http://acts.adhe.edu/ studenttransfer.aspx), and the Transfer Course Equivalency Guide (https://courseequivalency.uark.edu/). Credits found to be eligible for general transfer may not count toward the minimum requirements for every degree at the University of Arkansas. The second step in the evaluation, performed by the academic dean's office or department responsible for the program of study, determines which hours evaluated will satisfy degree program requirements.
2. Grades earned at other institutions are not calculated in the student's grade-point average earned at the university.
3. General transfer credit is awarded for courses in which a grade of "C" or higher has been earned. Course work must be applicable to a baccalaureate degree; credit is not granted for course work that is remedial or technical in nature.
4. Students can petition to have up to six hours of "D" grades transfer for degree credit to the University of Arkansas. Students must have a 2.00 GPA on a 4.00 scale to be considered, and courses must meet core or elective requirements in the student's degree program. Courses outside the degree program and courses in the major cannot be considered for transfer. The Admissions and Appellate Committee makes all decisions regarding "D" transfers. Petitions can be obtained from the Office of the Registrar.
5. In the case of course work taken at institutions not fully accredited by a regional accrediting agency, transfer credit may be denied altogether or may be granted provisionally subject to successful completion of specified courses at the university. Normally, credit is provisionally granted only if the institution is a candidate for regional accreditation.
6. The State Minimum Core (SMC): Act 98 of 1989 requires each institution of higher learning in Arkansas to identify a minimum core of general education courses that shall be fully transferable between state-supported institutions. Under guidelines from the State Board of Higher Education, the SMC consists of 35 hours distributed among the following education areas: English, U.S. history or government, mathematics, science, fine arts and humanities, and social sciences. Students transferring credit with grades of "C" or better from the approved SMC of another state-supported institution in Arkansas may expect to have all these hours applied toward their degree at the University of Arkansas.
7. Transfer credit policy under Arkansas Act 182 from 2009 requires a four-year public institution of higher education in Arkansas to accept all credits earned from students earning an Associate of Arts, Associate of Science or Associate of Arts in Teaching degree from a state-supported public institution in Arkansas.

Major stipulations of Act 182 are outlined below:

- The transfer degree contains the curriculum that is approved by the Arkansas Higher Education Coordinating Board.
- The four-year public institution of higher education is to admit a transfer student to junior status in a baccalaureate degree program at the four-year public institution of higher education.
- A four-year public institution of higher education receiving a transfer student shall not require additional lower division coursework if the additional course is considered a general education lower division course.
- The receiving four-year public institution of higher education may only require the additional lower division course if the additional lower division course is:
- A prerequisite for courses in the transfer student's baccalaureate degree program;
- A discipline-specific course that is required by the transfer student's baccalaureate degree program and the student has not completed a course at the two-year public institution of higher education that is comparable to the discipline-specific course at the four-year public institution of higher education in the Arkansas Course Transfer System;
- A requirement of an independent licensing or accrediting body
- Act 182 does not remove the requirement that a transfer student must meet total baccalaureate degree program credit hour and course requirements in order to be eligible for a baccalaureate degree.
- The receiving four-year public institution of higher education shall determine whether to accept a grade of " $D$ " for academic course credit for a student transferring from a two-year public institution of higher.

Students should be prepared to submit course descriptions and syllabi of transfer work if there is any question concerning acceptance of credit toward a degree program. The university reserves the right to revise credit for advanced standing after the student has been in residence.

Please refer to the appropriate college or school section of this catalog for additional information concerning acceptance into specific degree programs.

## Military Transfer Credit

The University of Arkansas accepts transfer credit based upon completed military training as evaluated by the American Council of Education (ACE) guidelines and recommendations. The evaluation must be presented to the university on an official transcript from ACE, or a Joint Services Transcript (JST). Equivalencies for military credit as recommended by ACE are evaluated by departmental faculty and may not be exactly the same as ACE. University of Arkansas equivalencies for ACE credit are displayed on the website of the Office of the Registrar in the Transfer Credit section (http://registrar.uark.edu/transfer-and-test-credit/). Students may elect to receive 6 hours of general military science credit for basic training as evaluated by presentation of the military DD214 with honorable discharge. Officer training would qualify the student for 6 additional hours of general military science credit. The same training may not be presented for both general military science credit and ACE credit.

More information on transfer credit can be found online by going to the Office of the Registrar website (http://registrar.uark.edu/410.php).

## Arkansas Course Transfer System (ACTS)

The Arkansas Course Transfer System (ACTS) is a postsecondary education resource service coordinated by the Arkansas Department of Higher Education (ADHE) that provides comparable course information to facilitate student transfer within Arkansas public colleges and universities. The ACTS database contains faculty-generated comparable course information for a number of courses offered at public institutions in Arkansas. Comparable courses within ACTS are guaranteed to transfer for full credit to any Arkansas public institution. Course transferability is not guaranteed for courses listed in ACTS as "No Comparable Course." Find out more at the Arkansas Course Transfer System website (http:// acts.adhe.edu/studenttransfer.aspx). Questions regarding ACTS may be directed to an academic adviser or the Office of the Registrar.

The chart below provides the University of Arkansas course equivalents for each of the ACTS courses offered on the campus. The ACTS course numbers are also identified in the course title of the equivalent $U$ of $A$
course. For instance, the course title for the university's ANTH 1023 Introduction to Cultural Anthropology is listed as:

## ANTH 1023 Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013).

Both this chart and the information in the course description are designed to assist students with identifying $U$ of $A$ courses that are guaranteed to transfer between Arkansas public institutions.

| ACTS Course | University of Arkansas Course Number |
| :---: | :---: |
| ANTH 2013 Cultural Anthropology | ANTH 1023 Introduction to Cultural Anthropology |
| ARTA 1003 Art Appreciation | ARHS 1003 Basic Course in the Arts: Art Lecture |
| ARTA 2003 Art History Survey I | ARHS 2913 Art History Survey I |
| ARTA 2103 Art History Survey II | ARHS 2923 Art History Survey II |
| BIOL 1004 Biology for Non-Majors | BIOL 1524 Biological Principles |
| BIOL 1014 Biology for Majors | BIOL 1543 \& BIOL 1541L Principles of Biology and Lab |
| BIOL 1034 Botany for Majors | BIOL 1613 \& BIOL 1611L Plant Biology and Lab |
| BIOL 1054 Zoology | BIOL 1603 \& BIOL 1601L Principles of Zoology and Lab |
| BIOL 2004 Introductory Microbiology | BIOL 2013 \& BIOL 2011L General Microbiology and Lab |
| BIOL 2404 Human Anatomy and Physiology ${ }^{1}$ | BIOL 2443 \& BIOL 2441L Human Anatomy and Lab |
| BIOL 2414 Human Anatomy and Physiology II ${ }^{1}$ | BIOL 2213 \& BIOL 2211L Human Physiology and Lab |
| BLAW 2003 Legal Environment of Business² | BLAW 2013 The Legal Environment of Business |
| CHEM 1004 Chemistry I for General Education | CHEM 1053 \& CHEM 1051L Chemistry in the Modern World and Lab |
| CHEM 1214 Chemistry I for Health Related Professions | CHEM 1073 \& CHEM 1071L <br> Fundamentals of Chemistry and Lab |
| CHEM 1224 Chemistry II for Health Related Professions | CHEM 2613 \& CHEM 2611L Organic Physiological Chemistry and Lab |
| CHEM 1414 Chemistry I for Science Majors | CHEM 1103 \& CHEM 1101L University Chemistry I and Lab |
| CHEM 1424 Chemistry II for Science Majors | CHEM 1123 \& CHEM 1121L University Chemistry II and Lab |
| CRJU 1023 Introduction to Criminal Justice | CRIM 2003 Introduction to Criminal Justice |
| DRAM 1003 Theatre Appreciation | THTR 1003 Basic Course in the Arts: Theatre Appreciation |
| ECON 2103 Principles of Macroeconomics | ECON 2013 Principles of Macroeconomics |
| ECON 2203 Principles of Microeconomics | ECON 2023 Principles of Microeconomics |
| ENGL 1013 Composition I | ENGL 1013 Composition I |
| ENGL 1023 Composition II | ENGL 1023 Composition II |
| ENGL 2013 Introduction to Creative Writing | ENGL 2023 Creative Writing I |

ENGL 2023 Introduction to Technical Writing
ENGL 2113 World Literature I
ENGL 2123 World Literature II
ENGL 2653 American Literature I

ENGL 2663 American Literature II

ENGL 2673 British Literature I

ENGL 2683 British Literature II

FREN 1013 French I
FREN 1023 French II
FREN 2013 French III
FREN 2023 French IV
GEOG 1113 Human Geography
GEOG 2103 World Regional
Geography
GEOL 1114 Physical Geology
GEOL 1124 Environmental Geology GEOS 1133 \& GEOS 1131L Earth
GERM 1013 German I
GERM 1023 German II
GERM 2013 German III
GERM 2023 German IV
HIST 1113 World Civilizations I

HIST 1123 World Civilizations II

HIST 2113 United States History I
HIST 2123 United States History II
MATH 1103 College Algebra
MATH 1113 Quantitative Literacy/ Mathematical Reasoning
MATH 1203 Plane Trigonometry
MATH 1305 Pre-Calculus

MATH 2103 Introduction to Statistics
MATH 2203 Survey of Calculus
MATH 2405 Calculus I
MATH 2505 Calculus II
MATH 2603 Calculus III
MUSC 1003 Music Appreciation
PHIL 1003 Introduction to Critical
Thinking
PHIL 1003 Introduction to Critical Thinking

Science and Lab
ENGL 3053 Technical and Report Writing
WLIT 1113 World Literature I WLIT 1123 World Literature II ENGL 2343 Survey of American Literature from the Colonial Period through Naturalism
ENGL 2353 Survey of Modern and Contemporary American Literature
ENGL 2303 English Literature from the Beginning through the 17th Century
ENGL 2313 Survey of English Literature from 1700 to 1900 FREN 1003 Elementary French I FREN 1013 Elementary French II FREN 2003 Intermediate French I FREN 2013 Intermediate French II GEOS 1123 Human Geography GEOS 2003 World Regional Geography
GEOS 1113 \& GEOS 1111L General Geology and Lab

GERM 1003 Elementary German I GERM 1013 Elementary German II GERM 2003 Intermediate German I GERM 2013 Intermediate German II HIST 1113 Institutions and Ideas of World Civilizations I
HIST 1123 Institutions and Ideas of World Civilizations II HIST 2003 History of the American People to 1877
HIST 2013 History of the American People, 1877 to Present MATH 1203 College Algebra
MATH 1313 Quantitative Reasoning

MATH 1213 Plane Trigonometry
MATH 1284C Precalculus Mathematics
STAT 2303 Principles of Statistics

MATH 2043 Survey of Calculus
MATH 2554 Calculus I
MATH 2564 Calculus II
MATH 2574 Calculus III
MLIT 1003 Experiencing Music
PHIL 2103 Introduction to Ethics

PHIL 2203 Logic

PHIL 1103 Philosophy

PHSC 1104 Earth Science
PHSC 1204 Introduction to Astronomy
PHYS 2014 Algebra/TrigonometryBased Physics I
PHYS 2024 Algebra/TrigonometryBased Physics II
PHYS 2034 Calculus-Based Physics I
PHYS 2044 Calculus-Based
Physics II
PLSC 2003 American National
Government
PLSC 2103 State and Local Government

PSYC 1103 General Psychology
SOCI 1013 Introduction to Sociology
SOCI 2013 Social Problems
SPAN 1013 Spanish I
SPAN 1023 Spanish II
SPAN 2013 Spanish III
SPAN 2023 Spanish IV
SPCH 1003 Introduction to Oral Communication
${ }^{1}$ Human Anatomy and Physiology I and Human Anatomy and Physiology Il must be taken at the same institution to be transferable.
2 Accounting and business courses are not general education core classes.

## Colleges and Schools

Five colleges and six schools offer academic programs leading to undergraduate degrees.

- The Dale Bumpers College of Agricultural, Food and Life Sciences (p. 124), which includes the School of Human Environmental Sciences (p. 202)
- The Fay Jones School of Architecture and Design (p. 238)
- The Fulbright College of Arts and Sciences (p. 273), which includes the School of Art (p. 300), the School of Journalism and Strategic Media (p. 466), and the School of Social Work (p. 567)
- The Sam M. Walton College of Business (p. 612)
- The College of Education and Health Professions (p. 698), which includes the Eleanor Mann School of Nursing (p. 750)
- The College of Engineering (p. 826)

Freshmen and current students in all of the colleges and schools may also be eligible for admission to the Honors College. Students may also enroll in courses offered through the University of Arkansas Global Campus. Last, there are also two interdisciplinary minors that are administered outside these colleges and schools but which use the resources of more than one of them.

PHIL 2003 Introduction to Philosophy
GEOS 4924 Earth System History
ASTR 2003 \& ASTR 2001L Survey of the Universe and Lab
PHYS 2013 \& PHYS 2011L College
Physics I and Lab
PHYS 2033 \& PHYS 2031L College
Physics II and Lab
PHYS 2054 University Physics I and Lab

PHYS 2074 University Physics II and Lab
PLSC 2003 American National Government

PLSC 2203 State and Local Government

PSYC 2003 General Psychology
SOCI 2013 General Sociology
SOCI 2033 Social Problems SPAN 1003 Elementary Spanish I SPAN 1013 Elementary Spanish II SPAN 2003 Intermediate Spanish I SPAN 2013 Intermediate Spanish II
COMM 1313 Public Speaking in

## Honors College

## Mission and Objectives

The Honors College at the University of Arkansas brings together high-achieving students and the university's top faculty members to share transformative learning experiences. Founded in 2002 with a large portion of the $\$ 300$ million gift from the Walton Family Charitable Support Foundation, the Honors College has a substantial endowment for undergraduate research, service learning and international education.

The Honors College prepares University of Arkansas students to be leaders with intellectual, economic, cultural and ethical impact in the widest scope of fields. To achieve this mission, the Honors College collaborates with honors programs across campus to provide a flexible, interdisciplinary honors curriculum that fosters creative and critical thinking and inspires action. The Honors College encompasses the honors programs from each undergraduate college or school.

## Honors Courses

The Honors College offers small, seminar-style courses taught by top professors and campus and community leaders that address topics such as blockchain, gene editing, cancer, presidential elections, climate change and the gothic style in art, architecture and literature. Retro Readings courses revisit classic texts and concepts, from the Bible and Quran to Dante's Divine Comedy. Other Honors College courses introduce students to undergraduate research, support domestic and international internship opportunities, and prepare students to apply to professional and graduate schools and nationally competitive awards.

Honors courses are also offered within each undergraduate college or school on a wide range of topics. Registration for honors courses is restricted to honors students or other students who meet the honors criteria and who have been approved by the Honors College or the honors program offering the course. For more information visit the Honors College website at honorscollege.uark.edu; also see the honors sections for the college or school major.

## Facilities and Resources

The Honors College is housed in a 21,000 -square-foot addition to Gearhart Hall, a historic Collegiate Gothic structure located in the heart of campus. Honors students enjoy a spacious lounge, study areas and rooms for group discussions. A 216 -seat auditorium below provides space for lectures, film screenings and other events.

Hotz Honors Hall, situated in the heart of the northwest housing area, provides housing for 400 first-year honors students in spaces designed to foster community. Hotz offers a large room for relaxation on the main floor, a computer lounge, music room, conference rooms and a small theater. Each floor is equipped with study areas, alcoves for TV viewing and video gaming, and spa-style bathrooms. The Honors College offers special programming for Hotz residents and upper-level honors students in nearby dorms.

## Degrees Offered

Honors programs are offered in all disciplines, tailored to students' academic interests, with interdisciplinary collaborations encouraged. The college or school of major confers honors degrees. Only Honors College students can earn the distinction of graduating cum laude, magna cum laude or summa cum laude.

## Other Programs <br> Honors College Grants

Each year the Honors College awards more than $\$ 1$ million in study abroad and undergraduate research grants, which are available to honors students who submit competitive proposals and meet all other requirements. Honors College faculty and staff work closely with the Office of Study Abroad and International Exchange to help honors students find programs that best meet their academic and professional goals. Honors College grants support domestic and international research, internships, community engagement, study abroad and travel to an archive or conference. Deadlines and application instructions are available on the Honors College website at honorscollege.uark.edu (http:// honorscollege.uark.edu/).

## Nationally Competitive Awards

The Honors College coordinates with the Office of Nationally Competitive Awards to provide assistance to all students who are applying for national and international graduate fellowships and scholarships (i.e. Marshall, Rhodes, Schwarzman, Truman, Udall, Gates Cambridge, Rotary, Fulbright, and National Science Foundation). For more information, refer to the Enrollment Services section of this catalog.

## College Admission Requirements

To apply for honors, students should visit the Honors College website at honorscollege.uark.edu (http://honorscollege.uark.edu/) and click on Apply. There they can review admission requirements and the honors program requirements in their college. Honors-eligible new freshmen should fill out the Honors College Application, available online. To register for honors classes in their first semester, they should apply before attending freshman orientation.

New transfer students and current students should contact the honors program director or assistant director in their college to determine eligibility and, for some programs, which form of honors (four-year or departmental) would best meet their needs. Then they should fill out the Honors College Application form. The list of honors program directors and both honors application forms are available online at honorscollege.uark.edu (http://honorscollege.uark.edu/).

The chart below contains basic requirements for each of the honors programs. For detailed information, see the individual honors program sections for each college or school in this catalog. Note that honors admission is based on the highest composite ACT or SAT score, not on superscores. In calculating GPA, extra weight is given only for Advanced Placement and International Baccalaureate courses.

| College or School | New Freshmen | Current Students |
| :--- | :--- | :--- |
| Bumpers College of | Minimum 28 ACT | 3.5 cumulative |
| Agricultural, Food and | composite or 1310 SAT University of Arkansas |  |
| Life Scences | and 3.75 high school | GPA |
|  | GPA are eligible for |  |
|  | automatic admission. |  |
|  | Students with a 3.9 high |  |
|  | school GPA can submit |  |
|  | an essay and academic |  |
|  | resume for application |  |
|  | review. |  |


| Fay Jones School of Architecture | Minimum 28 ACT composite or 1310 SAT and 3.75 high school GPA are eligible for automatic admission. Students with a 3.9 high school GPA can submit an essay and academic resume for application review. | 3.5 cumulative University of Arkansas GPA |
| :---: | :---: | :---: |
| Fulbright College of Arts and Sciences | Minimum 28 ACT composite or 1310 SAT and 3.75 high school GPA are eligible for automatic admission. Students with a 3.9 high school GPA can submit an essay and academic resume for application review. | 3.5 cumulative <br> University of Arkansas GPA |
| Walton College of Business | Minimum 28 ACT composite or 1310 SAT and 3.75 high school GPA are eligible for automatic admission. Students with a 3.9 high school GPA can submit an essay and academic resume for application review. | 3.75 cumulative University of Arkansas GPA |
| College of Education and Health Professions | Minimum 28 ACT composite or 1310 SAT and 3.75 high school GPA are eligible for automatic admission. Students with a 3.9 high school GPA can submit an essay and academic resume for application review. | 3.5 cumulative University of Arkansas GPA |
| College of Engineering | Minimum 28 ACT composite or 1310 SAT and 3.75 high school GPA are eligible for automatic admission. Students with a 3.9 high school GPA can submit an essay and academic resume for application review. | 3.5 cumulative University of Arkansas GPA |

## Fellowships and Scholarships

The Honors College administers the most prestigious new freshman awards at the University of Arkansas. The Bodenhamer, Sturgis and Honors College Fellowships provide from $\$ 80,000$ in support over a fouryear period, are highly competitive and require an in-depth application process and interview. For more details, visit the Honors College website at honorscollege.uark.edu (http://honorscollege.uark.edu/) and click on Future Students.

The Academic Scholarship Office awards scholarships to a variety of students. Students do not have to be in the Honors College to receive these scholarships. For additional information, visit the Academic Scholarship Office website at scholarships.uark.edu (http:// scholarships.uark.edu/) and see the chapter on Financial Aid and Scholarships in this catalog.

## Student Organizations

All honors students are eligible to apply for the Honors College Ambassadors program. This group supports the honors community by participating in campus recruiting events and meeting with prospective students. The Honors College Student Advisory Council offers a select group of student leaders an opportunity to make a real impact on the Honors College.

## College Academic Regulations

The college or school of major sets specific requirements for graduating with honors including a minimum of 12 honors credit hours and the completion of an undergraduate thesis. A combination of honors credit hours, thesis quality, and GPA requirements lead to Latin designation of cum laude, magna cum laude or summa cum laude.

## Honors College Office

244 Gearhart Hall, 479-575-7678

## Dean

Lynda Coon

## Associate Dean

Jennie Popp
Advanced Placement Summer Institute
244 Gearhart Hall, 479-575-7678
Email: honors@uark.edu
Honors College website (http://honorscollege.uark.edu/)

## Courses

HNRS 102VH. Honors College Introduction to Research. 1-6 Hour.
The Honors College Introduction to Research functions as part of a bridge program between secondary education and the university. The main purpose is to introduce students to the full range of research activities available at an R-1 institution and to do so under the guidance of both STEM and non-STEM honors faculty members. Prerequisite: Departmental consent. Pre- or Corequisite: Honors standing or membership in the Honors College Path Program. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HNRS 204VH. Honors International Research Internship Foundations. 1-6 Hour.
The Honors College International Research Internship Foundations hours are intended for undergraduates who undertake an international research internship, usually with funding from the Honors College. An on-campus faculty mentor will supervise the preparatory work in advance of the time spent abroad. Pre- or Corequisite: Honors standing. Prerequisite: Departmental consent. (Typically offered: Irregular) May be repeated for degree credit.

HNRS 205VH. Honors Domestic Internship Foundations. 1-6 Hour. The Honors College Domestic Internship Foundations hours are intended for undergraduates who undertake a domestic internship, usually with funding from the Honors College. An on-campus faculty mentor will approve any needed preparatory work in advance of the internship. Prerequisite: Departmental consent. Pre- or Corequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.

HNRS 3001H. Honors College Forum. 1 Hour.
The Honors College Forum centers on contemporary issues sparking intense national and international media scrutiny. Faculty experts partner with honors students in a seminar-style, discussion format. Topics vary by semester. Pre- or Corequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

## HNRS 3011H. Honors College Retro Readings. 1 Hour.

Honors College Retro Readings centers on classic authors read through a contemporary lens. Faculty experts partner with honors students from all undergraduate colleges in a seminar-style discussion format. Topics vary by semester. Pre- or Corequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

## HNRS 3501H. Honors Trajectory Exploration. 1 Hour.

Introduces students to areas of professional life with a special emphasis on emerging and competitive fields or areas of competency. Courses mix theoretical bases of an area with cutting-edge application by practitioners. Prerequisite: Departmental consent. Pre- or corequisite: Honors standing. (Typically offered: Fall and Spring)

## HNRS 3513 H . Honors College Special Topics. 3 Hours.

Honors College Special Topics center on either issues of contemporary interest or on a fresh approach to a well-established area of study. In either case, these courses are marked by their interdisciplinary approach, seminar-style discussion format, and students delivering one or more academic products showing both their understanding of the topic and of interdisciplinary approaches. Topics vary by semester. May be repeated for degree credit. Pre- or corequisite: Honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

## HNRS 3801H. Honors College Catapult. 1 Hour.

This course is designed to place ambitious, high-achieving students on a trajectory toward nationally competitive awards and/or graduate and professional programs of study. Students in the course will prepare their academic resume, construct a personal statement, and answer essay prompts as each component may relate to nationally competitive awards and graduate or professional school admission. Additional topics include studying for advanced tests such as the Graduate Record Exam (GRE), building a graduate or professional school timeline, and preparing for interviews. Learning outcomes will be achieved through active engagement in writing and compilation exercises, research, and discussion. Prerequisite: Honors standing. (Typically offered: Spring)

## HNRS 3901H. Honors Med School. 1 Hour.

Introduces students to the process of applying to medical school while dispelling several common myths about the practice of medicine. Seminar participants also explore pressing issues facing doctors these days, including the opioid crisis, the increasing elderly population, and the rise of corporate healthcare. Prerequisite: Departmental consent. Pre- or Corequisite: Honors standing. (Typically offered: Spring)

## HNRS 3911H. Honors Law School. 1 Hour.

Introduces students to the process of applying to law school while dispelling several common myths about the practice of law. Seminar participants also explore pressing issues facing lawyers and the variety of careers open to them, including criminal and civil and governmental and public interest practice. Prerequisite: Departmental consent. Pre- or corequisite: Honors standing. (Typically offered: Spring)

HNRS 4013H. Honors College Signature Seminar. 3 Hours.
The Honors College Signature Seminar Series features leading scholars who will offer courses bridging multiple colleges and having broad appeal. These signature seminars will develop from the current research of the faculty who offer them, thereby inviting honors students into their scholarly world at a very high level. The goal of the signature seminar series is to spark undergraduate research projects and to stimulate career trajectories, including nationally competitive fellowships and/or admittance to graduate and professional programs. Topics vary by semester. Eligible students must be in good standing in the Honors College. Pre- or Corequisite: Honors standing. Prerequisite: Departmental consent. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
HNRS 402VH. Honors College Research. 1-6 Hour.
The Honors College Research hours are intended for undergraduates who have already begun their research on campus and will travel domestically for a significant period of time to enhance and extend this research. An on-campus faculty mentor and a research mentor on-site are required. Prerequisite: Departmental consent. Pre- or Corequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HNRS 403VH. Honors College International Research. 1-6 Hour.
The Honors College International Research hours are intended for undergraduates who have already begun their research on campus and will travel abroad for a significant period of time to enhance and extend this research. An on-campus faculty mentor and a research mentor on-site are required. Prerequisite: Departmental consent. Pre or corequisite: Honors standing. (Typically offered: Irregular)

HNRS 404VH. Honors International Research Internship. 1-6 Hour.
The Honors College International Research Internships are intended for upperlevel undergraduates who undertake an international research internship, usually with funding from the Honors College. An on-campus faculty mentor and a research mentor on-site are required. Prerequisite: Departmental consent. Pre- or corequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.
HNRS 405VH. Honors Domestic Internship. 1-6 Hour.
The Honors College Domestic Internship hours are intended for upper-level undergraduates who undertake a domestic internship, usually with funding from the Honors College. An on-campus faculty mentor will approve any needed preparatory work in advance of the internship. (Typically offered: Irregular) May be repeated for degree credit.

## Interdisciplinary Studies

## Mission and Objectives

The University of Arkansas provides several options for students to pursue education more broadly than one field of undergraduate study might allow, including interdisciplinary and multidisciplinary programs. These programs allow broader instruction and research opportunities, especially in emerging fields that haven't reached the academic breadth to constitute a full academic department or in cases in which collaboration between one or more departments allows faculty from each existing department to contribute to the interdisciplinary or multidisciplinary major. In the Catalog of Studies (http://catalog.uark.edu/catalogofstudies/), requirements for each interdisciplinary program are listed in the chapter of the college or school that oversees the program.

One interdisciplinary major - Data Science (p. 95) - and two interdisciplinary minors — Nanotechnology (p. 122) and Planning (p. 123) - are not administered by a single academic department. The minor in Nanotechnology is administered by the Materials Science and Engineering Program. The minor in Planning is jointly administered by the departments of Landscape Architecture and Political Science. The requirements for completing each minor are at their respective links.

## Data Science (DTSC)

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Data scientists make sense of huge sets of data to help businesses, governments, nonprofits and other organizations make smarter decisions. The university's interdisciplinary Bachelor of Science in Data Science will prepare students for a successful career in data science with a strategic skill set, including the ability to:

- Use and apply state-of-the-art technologies for data representation, retrieval, manipulation, storage, governance, understanding, analysis, privacy, and security.
- Develop descriptive, predictive and prescriptive models to abstract complex systems and organizational problems, and to use computational methods to draw data-supported conclusions.
- Use foundational knowledge and apply critical thinking skills to identify and solve problems, make decisions, and visualize data, all with an awareness of societal and ethical impacts.
- Adapt analytics concepts to interpret and communicate findings and implications to senior decision-makers.
- Work effectively in an interdisciplinary team and transfer findings between knowledge domains and to others with no domain experience.
- Communicate using technical and non-technical language in writing and verbally.

Three colleges at the university - the College of Engineering, the Fulbright College of Arts and Sciences, and the Sam M. Walton College of Business - contribute expertise to the overall major while providing deeper insight into the concentrations they offer, including:

- Accounting Analytics
- Bioinformatics
- Biomedical and Healthcare Informatics
- Business Data Analytics
- Computational Analytics
- Cybersecurity Analytics
- Data Science Statistics
- Geospatial Data Analytics
- Music Industry Data Analytics
- Operations Analytics
- Social Data Analytics
- Supply Chain Analytics


## Requirements for B.S. in Data Science with Accounting Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Accounting Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) |
| :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) |
| Science state minimum electives (two courses with labs) |  |
| Fine Arts state minimum core |  |
| Humanities state minimum core |  |
| PHIL 3103 | Ethics and the Professions |
| U.S. History and Government state minimum core |  |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |
| or HIST 201‘History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  |
| or PLSC 20CAmerican National Government (ACTS Equivalency = PLSC 2003) |  |

Social Science state minimum core electives 6

ECON $2143 \quad$| Basic Economics: Theory and Practice (represents |
| :--- |
| 3 of the 9 required credit hours for Social Science |
| elective) |

## Data Science Required Core (47 hours)

DASC 1003 Introduction to Data Science 3

DASC 1104 Programming Languages for Data Science (R, 4 Python)
DASC 1204 Introduction to Object Oriented Programming for 4 Data Science (JAVA)
DASC 2594 Multivariable Math for Data Scientists 4
DASC 1223 Role of Data Science in Today's World 3
DASC 2113 Principles and Techniques of Data Science 3
DASC 2203 Data Management and Data Base 3
DASC 2213 Data Visualization and Communication (Tableau) 3
DASC 3103 Cloud Computing and Big Data 3
DASC 3203 Optimization Methods in Data Science 3
DASC 3213 Statistical Learning 3
DASC 4892 Data Science Practicum I 2

| DASC 4113 | Machine Learning | 3 |
| :---: | :---: | :---: |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |
| Data Science Required Additional Courses |  |  |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences |  | 6-7 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |
| Or |  |  |
| INEG 2323 <br> \& INEG 2314 | Probability and Stochastic Processes for Industria Engineers and Statistics for Industrial Engineers I |  |
| Data Science Concentration Courses |  | 20-21 |
| General Electives |  | 2-4 |
| Total Hours |  | 120 |

## Required Accounting Analytics Concentration Courses

ACCT 2013 Accounting Principles 3
ACCT 2023 Accounting Principles II 3
ACCT 3533 Accounting Technology 3
ACCT 3543 Accounting Analytics 3
ISYS 4193 Business Analytics and Visualization 3
ISYS 4293 Business Intelligence 3
Elective Accounting Analytics Concentration Courses (Select 3 hours) 3

| FINN 3013 | Financial Analysis |
| :--- | :--- |
| ECON 3033 | Microeconomic Theory |
| ECON 4743 | Introduction to Econometrics |
| ECON 4753 | Forecasting |
| ISYS 4213 | ERP Fundamentals |
| MKTG 3433 | Introduction to Marketing |

Total Hours
21

## Data Science B.S. with Accounting Analytics Concentration

Eight-Semester Program First Year

Units
Fall Spring
MATH 2554 Calculus I (ACTS Equivalency 4
= MATH 2405) (Satisfies General Education
Outcome 2.1) ${ }^{1}$
ENGL 1013 Composition I (ACTS Equivalency 3
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
DASC 1003 Introduction to Data Science 3
DASC 1104 Programming Languages for Data 4
Science
MATH 2564 Calculus II (ACTS Equivalency $=\quad 4$
MATH 2505)
ECON 2143 Basic Economics: Theory and
3

| ENGL 1033 Technical Composition II (ACTS |  |  |
| :---: | :---: | :---: |
| Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) |  |  |
| DASC 1204 Introduction to Object Oriented Programming for Data Science |  | 4 |
| DASC 1223 Role of Data Science in Today's World |  | 3 |
| Year Total: | 14 | 17 |
| Second Year |  | Units |
|  | Fall | Spring |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| DASC 2113 Principles and Techniques of Data Science | 3 |  |
| DASC 2213 Data Visualization and Communication | 3 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ or INEG 2323 Probability and Stochastic Processes for Industrial Engineers | 3 |  |
| State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome $4.2)^{2}$ | 3 |  |
| SEVI 2053 Business Foundations (Data Science Majors-only section) |  | 3 |
| STAT 3003 Statistical Methods ${ }^{4}$ or INEG 2314 Statistics for Industrial Engineers I |  | 3-4 |
| State Minimum Core Natural Science with Lab Elective (Satisfies General Education Outcome $3.4)^{2}$ |  | 4 |
| DASC 2203 Data Management and Data Base ${ }^{2}$ |  | 3 |
| ACCT 2013 Accounting Principles (This is a Concentration pre-req and uses the General Elective credit hours) |  | 3 |
| Year Total: | 16 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |  |
| DASC 3103 Cloud Computing and Big Data | 3 |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3) ${ }^{2}$ | 3 |  |
| State Minimum Core Natural Science with Lab Elective (Satisfies General Education Outcome 3.4) ${ }^{2}$ | 4 |  |
| ACCT 2023 Accounting Principles II | 3 |  |
| DASC 3203 Optimization Methods in Data Science |  |  |
| DASC 3213 Statistical Learning |  |  |
| ACCT 3533 Accounting Technology |  |  |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{2}$ |  |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and $4.1)^{2}$ |  | 3 |
| Year Total: | 16 | 15 |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and | 3 |  |
| Analytics |  |  |
| ACCT 3543 Accounting Analytics | 3 |  |
| ISYS 4193 Business Analytics and Visualization | 3 |  |
| DASC 4993 Data Science Practicum II (Satisfies |  | 3 |
| General Education Outcome 6.1) |  |  |
| ISYS 4293 Business Intelligence |  | 3 |
| Accounting Analytics Concentration Elective |  | 3 |
| General Education Elective ${ }^{3}$ | 14 | $2-3$ |
| Year Total: |  | 12 |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
${ }^{2}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2F1XG8924jwOx8pTlw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Bioinformatics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Bioinformatics Concentration. Below those is a recommended eightsemester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of
required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| State Minimum | Core and General Education (36 hours) |  |
| :--- | :--- | :--- |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = | 3 |
|  | ENGL 1023) |  |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) |  |

Science state minimum electives (two courses with labs) 8
Fine Arts state minimum core 3
Humanities state minimum core
PHIL 3103 Ethics and the Professions 3
U.S. History and Government state minimum core 3
$\begin{array}{ll}\text { HIST } 2003 & \begin{array}{l}\text { History of the American People to } 1877 \text { (ACTS } \\ \text { Equivalency }=\text { HIST 2113) }\end{array}\end{array}$
or HIST 201!'History of the American People, 1877 to Present
(ACTS Equivalency $=$ HIST 2123)
or PLSC 20CAmerican National Government (ACTS Equivalency = PLSC 2003)
Social Science state minimum core electives 6
ECON 2143 Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective)

## Data Science Required Core (47 hours)

| DASC 1003 | Introduction to Data Science | 3 |
| :--- | :--- | :--- |
| DASC 1104 | Programming Languages for Data Science (R, <br> Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for <br> Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |

## Data Science Required Additional Courses

| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505 $)$ | 4 |
| :--- | :--- | ---: |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences | $6-7$ |  |


| STAT 3013 | Introduction to Probability |
| :--- | :--- |
| \& STAT 3003 | and Statistical Methods (Statistical Methods) |
| Or |  |
| INEG 2323 | Probability and Stochastic Processes for Industrial |
| \& INEG 2314 | Engineers <br> and Statistics for Industrial Engineers I |

## Data Science Concentration Courses <br> General Electives <br> Total Hours <br> Required Bioinformatics Concentration Courses

 20-21 2-4| BIOL 2533 | Cell Biology | 3 |
| :--- | :--- | ---: |
| BIOL 2323 | General Genetics | 3 |
| Choose one of the following courses: | 3 |  |
| BIOL 3023 | Evolutionary Biology |  |
| BIOL 3863 | General Ecology | 12 |
| Elective Bioinformatics Concentration Courses (Select 12 hours) |  |  |
| Note: May not fulfill concentration electives with all GIS courses |  |  |
| BIOL 4174 | Conservation Genetics |  |
| BIOL 4223 | Bacterial Lifestyles |  |
| BIOL 480V | Special Topics in Biological Sciences |  |
| BIOL 5153 | Practical Programming for Biologists |  |
| BIOL 580V | Special Topics in Biological Sciences |  |
| GEOS 3543 | Geospatial Applications and Information Science |  |
| GEOS 3553 | Spatial Analysis Using ArcGIS |  |
| GEOS 3563 | Geospatial Data Mining |  |
| GEOS 4553 | Introduction to Raster GIS |  |
| Total Hours |  | $\mathbf{2 1}$ |

## Data Science B.S. with Bioinformatics Concentration Eight-Semester Program

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 4 |  |
| DASC 1003 Introduction to Data Science | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| DASC 1104 Programming Languages for Data Science | 4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  |  |
| Satisfies General Education Outcome 3.4: |  |  |
| BIOL 1543 Principles of Biology (ACTS |  |  |

Equivalency = BIOL 1014 Lecture) \& BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented 4
Programming for Data Science
DASC 1223 Role of Data Science in Today's World 3
Year Total: 14

| Second Year |  | Un |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| Satisfies General Education Outcome 3.4: |  |  |
| CHEM 1103 University Chemistry I (ACTS <br> Equivalency = CHEM 1414 Lecture) <br> \& CHEM 1101L University Chemistry I Laboratory <br> (ACTS Equivalency $=$ CHEM 1414 Lab) | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ or INEG 2323 Probability and Stochastic Processes for Industrial Engineers | 3 |  |
| DASC 2213 Data Visualization and Communication | 3 |  |
| DASC 2113 Principles and Techniques of Data Science | 3 |  |
| Majors-only section) |  |  |
| STAT 3003 Statistical Methods ${ }^{4}$ or INEG 2314 Statistics for Industrial Engineers I |  | 3-4 |
| DASC 2203 Data Management and Data Base |  |  |
| BIOL 2323 General Genetics |  |  |
| Year Total: | 17 | 12 |
| Third Year |  | Units |
|  | Fall | Spring |
| DASC 2133 Data Privacy \& Ethics (Satisfies <br> General Education Outcome 5.1) |  |  |
| DASC 3103 Cloud Computing and Big Data | 3 |  |
| Practice (Satisfies General Education Outcome 3.3) |  |  |
| BIOL 2533 Cell Biology | 3 |  |
| State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2) ${ }^{2}$ | 3 |  |
| DASC 3203 Optimization Methods in Data Science |  |  |
| DASC 3213 Statistical Learning |  |  |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) |  |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and $3.3)^{2}$ |  |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1) ${ }^{2}$ |  |  |
| Year Total: | 15 | 15 |
| Fourth Year Units |  |  |
|  | Fall | Spring |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and Analytics | 3 |  |
| BIOL 3023 Evolutionary Biology or BIOL 3863 General Ecology | 3 |  |
| Bioinformatics Elective | 3 |  |

DASC 4993 Data Science Practicum II (Satisfies 3
General Education Outcome 6.1)
Bioinformatics Elective 3
Bioinformatics Elective 3
Bioinformatics Elective 3
General Education Elective ${ }^{3} \quad 2-3$
Year Total: 14

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Biomedical and Healthcare Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Biomedical and Healthcare Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core ( p .81 ). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

State Minimum Core and General Education (36 hours)

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :--- | :--- | :--- |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = | 3 |
|  | ENGL 1023) |  |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science stateminimum electives (two courses with labs) 8 <br> Fine Arts state minimum core <br> Humanities state minimum core <br> PHIL 3103 Ethics and the Professions |  |  |


| U.S. History and Government state minimum core |  | 3 |
| :---: | :---: | :---: |
| HIST 2003 <br> or HIST 20 <br> or PLSC 20 | History of the American People to 1877 (ACTS <br> Equivalency = HIST 2113) <br> :History of the American People, 1877 to Present <br> (ACTS Equivalency $=$ HIST 2123) <br> CAmerican National Government (ACTS Equivalency PLSC 2003) |  |
| Social Science st | ate minimum core electives | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) |  |
| Data Science Required Core (47 hours) |  |  |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |
| Data Science Required Additional Courses |  |  |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences |  | -7 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |
| Or |  |  |
| INEG 2323 <br> \& INEG 2314 | Probability and Stochastic Processes for Industrial Engineers and Statistics for Industrial Engineers I |  |
| Data Science Concentration Courses |  | 21 |
| General Electives |  | 2-4 |
| Total Hours |  |  |

## Required Biomedical and Healthcare Informatics Concentration Courses

Students completing the Biomedical and Healthcare Informatics Concentration must select CHEM 1103 and PHYS 2054 for the State Minimum Core Science Electives.

| BMEG 2614 | Introduction to Biomedical Engineering | 4 |
| :--- | :--- | :--- |
| CHEM 1123 | University Chemistry II (ACTS Equivalency $=$ <br> CHEM 1424 Lecture) | 3 |
| BIOL 2213 | Human Physiology (ACTS Equivalency = BIOL <br> 2414 Lecture) | 3 |
| BMEG 3801 | Clinical Observations and Needs Finding | 1 |

Elective Biomedical and Healthcare Informatics Concentration (Select 10
10 credit hours) 10 credit hours)

| BMEG 4713 | Cardiovascular Physiology and Devices |
| :--- | :--- |
| BMEG 4973 | Regenerative Medicine |
| BMEG 4413 | Tissue Engineering |
| BMEG 4403 | Biomedical Microscopy |
| BMEG 4513 | Biomedical Optics and Imaging |
| BMEG 4523 | Biomedical Data and Image Analysis |
| BMEG 4983 | Genome Engineering and Synthetic Biology |
| BIOL 2211L | Human Physiology Laboratory (ACTS Equivalency <br> = BIOL 2414 Lab) |
| CHEM 1121L | University Chemistry II Laboratory (ACTS <br> Equivalency = CHEM 1424 Lab) |
| Total Hours |  |

## Data Science B.S. with Biomedical and Healthcare Informatics Concentration EightSemester Program

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| MATH 2554 Calculus I (ACTS Equivalency | 4 |  |
| $=$ MATH 2405) (Satisfies General Education |  |  |
| Outcome 2.1) |  |  |
| Satisfies General Education Outcome 3.4: |  |  |
| CHEM 1103 University Chemistry I (ACTS | 4 |  |

MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
Satisfies General Education Outcome 3.4:
PHYS 2054 University Physics I (ACTS
Equivalency = PHYS 2034) (Satisfies General Education Outcome 3.4)
ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented 4
Programming for Data Science
DASC 1223 Role of Data Science in Today's World 3
Year Total: 18
18

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ | 3 |  |

3013 Introduction to Probability
or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication

| DASC 2113 Principles and Techniques of Data | 3 |
| :--- | ---: |
| Science |  |
| BMEG 2614 Introduction to Biomedical | 4 |
| Engineering |  |
| SEVI 2053 Business Foundations (Data Science |  |
| Majors-only section) |  |
| STAT 3003 Statistical Methods ${ }^{4}$ |  |
| or INEG 2314 Statistics for Industrial Engineers I |  |
| DASC 2203 Data Management and Data Base |  |
| CHEM 1123 University Chemistry II (ACTS |  |
| Equivalency = CHEM 1424 Lecture) |  |
| Year Total: |  |


| Third Year |  |
| :---: | :---: |
|  | Fall |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |
| DASC 3103 Cloud Computing and Big Data | 3 |
| BIOL 2213 Human Physiology (ACTS Equivalency = BIOL 2414 Lecture) | 3 |
| ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) | 3 |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3) ${ }^{2}$ | 3 |
| DASC 3203 Optimization Methods in Data Science |  |
| DASC 3213 Statistical Learning |  |
| BMEG 3801 Clinical Observations and Needs Finding |  |
| State Minimum Core Fine Arts Elective (Satisfies General Outcome 3.1) ${ }^{2}$ |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1) ${ }^{2}$ |  |
| Year Total: | 15 |

Fourth Year Fall
DASC 4892 Data Science Practicum I ..... 2
DASC 4113 Machine Learning ..... 3
DASC 4123 Social Problems in Data Science and ..... 3
Analytics
Concentration Elective Course ..... 1
Concentration Elective Course ..... 3
DASC 4993 Data Science Practicum II (Satisfies
General Education Outcome 6.1)
Concentration Elective CourseConcentration Elective CourseState Minimum Core U.S. History or GovernmentElective (Satisfies General Education Outcome$4.2)^{2}$
General Elective Course ${ }^{3}$
Year Total:12

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Business Data Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Business Data Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

## State Minimum Core and General Education ( 36 hours)

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) 8 |  |  |
| Fine Arts state minimum core |  |  |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  |  |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |  |
| or HIST 201!'History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  |  |
| or PLSC 200American National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Scien | minimum core electives | 6 |


| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) |
| :---: | :---: |
| Data Science Required Core (47 hours) |  |
| DASC 1003 | Introduction to Data Science |
| DASC 1104 | Programming Languages for Data Science (R, Python) |
| DASC 1204 | Introduction to Object Oriented Programming for Data Science (JAVA) |
| DASC 2594 | Multivariable Math for Data Scientists |
| DASC 1223 | Role of Data Science in Today's World |
| DASC 2113 | Principles and Techniques of Data Science |
| DASC 2203 | Data Management and Data Base |
| DASC 2213 | Data Visualization and Communication (Tableau) |
| DASC 3103 | Cloud Computing and Big Data |
| DASC 3203 | Optimization Methods in Data Science |
| DASC 3213 | Statistical Learning |
| DASC 4892 | Data Science Practicum I |
| DASC 4113 | Machine Learning |
| DASC 4123 | Social Problems in Data Science and Analytics |
| DASC 4993 | Data Science Practicum II |
| Data Science Required Additional Courses |  |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) |
| SEVI 2053 | Business Foundations |
| Choose from one of these two-course sequences |  |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |
| Or |  |
| INEG 2323 <br> \& INEG 2314 | Probability and Stochastic Processes for Industrial Engineers and Statistics for Industrial Engineers I |
| Data Science Concentration Courses 20 |  |
| General Electives |  |
| Total Hours | 120 |

## Required Business Data Analytics Concentration Courses

| ACCT 2013 | Accounting Principles | 3 |
| :--- | :--- | :--- |
| ACCT 2023 | Accounting Principles II | 3 |
| ISYS 4193 | Business Analytics and Visualization | 3 |
| ISYS 4293 | Business Intelligence | 3 |
| Elective Business <br> hours) | Data Analytics Concentration Courses (Select 9 | 9 |
| ECON 4743 | Introduction to Econometrics |  |
| ECON 4753 | Forecasting |  |
| FINN 3013 | Financial Analysis |  |
| FINN 2043 | Principles of Finance |  |
| ISYS 4213 | ERP Fundamentals |  |
| MKTG 3433 | Introduction to Marketing |  |
| MKTG 3633 | Marketing Research |  |

Total Hours
21

## Data Science B.S. with Business Data Analytics Concentration Eight-Semester Program

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 4 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| DASC 1003 Introduction to Data Science | 3 |  |
| DASC 1104 Programming Languages for Data Science | 4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |
| ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) |  | 3 |
| ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) |  | 3 |
| DASC 1204 Introduction to Object Oriented Programming for Data Science |  | 4 |
| DASC 1223 Role of Data Science in Today's World |  | 3 |
| Year Total: | 14 | 17 |


| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ or INEG 2323 Probability and Stochastic Processes for Industrial Engineers | 3 |  |
| DASC 2113 Principles and Techniques of Data Science | 3 |  |
| DASC 2213 Data Visualization and Communication | 3 |  |
| State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome $4.2)^{2}$ | 3 |  |
| SEVI 2053 Business Foundations (Data Science Majors-only section) |  | 3 |
| STAT 3003 Statistical Methods ${ }^{4}$ or INEG 2314 Statistics for Industrial Engineers I |  | 3-4 |
| DASC 2203 Data Management and Data Base |  | 3 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ |  | 4 |
| ACCT 2013 Accounting Principles |  | 3 |
| Year Total: | 16 | 16 |

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and $3.3)^{2}$
State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 3203 Optimization Methods in Data Science
DASC 3213 Statistical Learning
ACCT 2023 Accounting Principles II
State Minimum Core Fine Arts Elective (Satisfies
General Education Outcome 3.1) ${ }^{2}$
State Minimum Core Social Sciences Elective
(Satisfies General Education Outcomes 3.3 and 4.1) ${ }^{2}$

Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and | 3 |  |
| Analytics |  |  |
| Business Data Analytics Electives | 6 |  |
| DASC 4993 Data Science Practicum II (Satisfies |  | 3 |
| General Education Outcome 6.1) |  |  |
| ISYS 4293 Business Intelligence |  | 3 |
| Business Data Analytics Elective |  | 3 |
| General Education Elective ${ }^{3}$ | 14 | $2-3$ |
| Year Total: | 12 |  |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Computational Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Computational Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

Requirements for B.S. in Data Science
Science state minimum electives (two courses with labs) 8
Fine Arts state minimum core 3

Humanities state minimum core
PHIL 3103 Ethics and the Professions 3
U.S. History and Government state minimum core 3

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201‘'History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
or PLSC 200American National Government (ACTS Equivalency = PLSC 2003)
Social Science state minimum core electives 6
ECON 2143 Basic Economics: Theory and Practice (represents 3 3 of the 9 required credit hours for Social Science elective)
Data Science Required Core (47 hours)

| DASC 1003 | Introduction to Data Science | 3 |
| :--- | :--- | :--- |
| DASC 1104 | Programming Languages for Data Science (R, <br> Python) | 4 |


| DASC 1204 | Introduction to Object Oriented Programming for <br> Data Science (JAVA) | 4 |
| :--- | :--- | :--- |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |


| Data Science | Required Additional Courses |  |
| :--- | :--- | ---: |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences | $6-7$ |  |


| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |
| :---: | :---: |
| Or |  |
| INEG 2323 <br> \& INEG 2314 | Probability and Stochastic Processes for Industrial Engineers and Statistics for Industrial Engineers I |
| Data Science Co | 20-21 |
| General Elective | s 2-4 |
| Total Hours | 120 |
| Required Computational Analytics Concentration Courses |  |
| DASC 2103 | Data Structures \& Algorithms 3 |
| CSCE 4143 | Data Mining 3 |
| CSCE 4613 | Artificial Intelligence 3 |
| Elective Computational Analytics Concentration Courses (Select 1212 hours) ${ }^{1}$ |  |
| CSCE 4013 | Special Topics |
| MATH 2603 or MATH 28 | Discrete Mathematics (Pre-req for CSCE 4133) (Transition to Advanced Mathematics |
| CSCE 4133 | Algorithms ${ }^{1}$ |
| CSCE 4253 | Concurrent Computing |
| CSCE 4853 | Information Security |
| DASC 4533 | Information Retrieval |
| CSCE 3513 | Software Engineering |
| Note: Other courses from CSCE and/or other concentrations of DASC can also be added to the concentration electives. |  |

## Total Hours

## Data Science B.S. with Computational Analytics Concentration Eight-Semester Program

| First Year |  | nits |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{2}$ | 4 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| DASC 1003 Introduction to Data Science | 3 |  |
| DASC 1104 Programming Languages for Data Science | 4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |
| ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) |  | 3 |
| ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) |  | 3 |
| DASC 1204 Introduction to Object Oriented Programming for Data Science |  | 4 |
| DASC 1223 Role of Data Science in Today's World |  | 3 |
| Year Total: | 14 | 17 |


| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ or INEG 2323 Probability and Stochastic Processes for Industrial Engineers | 3 |  |
| DASC 2213 Data Visualization and Communication | 3 |  |
| DASC 2113 Principles and Techniques of Data Science | 3 |  |
| State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2) ${ }^{2}$ | 3 |  |
| SEVI 2053 Business Foundations (Data Science Majors-only section) |  | 3 |
| STAT 3003 Statistical Methods ${ }^{5}$ or INEG 2314 Statistics for Industrial Engineers I |  | 3-4 |
| DASC 2203 Data Management and Data Base |  | 3 |
| DASC 2103 Data Structures \& Algorithms |  | 3 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) |  | 4 |
| Year Total: | 16 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |  |
| DASC 3103 Cloud Computing and Big Data | 3 |  |
| CSCE 4143 Data Mining | 3 |  |
| State Minimum Core Natural Science Elective with <br> Lab (Satisfies General Education Outcome 3.4) | 4 |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3) ${ }^{3}$ | 3 |  |
| DASC 3203 Optimization Methods in Data Science |  | 3 |
| DASC 3213 Statistical Learning |  | 3 |
| CSCE 4613 Artificial Intelligence |  | 3 |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{3}$ |  | 3 |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1) ${ }^{3}$ |  | 3 |
| Year Total: | 16 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and Analytics | 3 |  |
| Computational Analytics Elective | 3 |  |
| Computational Analytics Elective | 3 |  |
| DASC 4993 Data Science Practicum II (Satisfies General Education Outcome 6.1) |  | 3 |
| Computational Analytics Elective |  | 3 |


| Computational Analytics Elective |
| :--- |
| General Education Elective ${ }^{4}$ |
| Year Total: |
|  |
| Total Units in Sequence: |
|  |
|  |
| MATH 2603 or MATH 2803 is a pre-req for CSCE 4133 . |
| 2 Students have demonstrated successful completion of the learning |
| indicators identified for learning outcome 2.1, by meeting the |
| prerequisites for MATH 2554. |
| 3 Students must complete the State Minimum Core requirements |
| (p. 81) as outlined in the Catalog of Studies. The courses that meet |
| the state minimum core also fulfill many of the university's General |
| Education requirements (p. 72), although there are additional |
| considerations to satisfy the general education learning outcomes. |
| Students are encouraged to consult with their academic adviser when |
| making course selections. |
| 4tudents are required to complete 40 hours of upper-division courses |
| (3000-4000 level). It is recommended that students consult with their |
| adviser when making course selections. |
| 5 Data Science Statistics and Computational Analytics Concentration |
| students are advised to select STAT 3013/STAT 3003 to meet the |
| prerequisites required in the concentration. |

## Requirements for B.S. with Cybersecurity Data Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Cybersecurity Data Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

## State Minimum Core and General Education ( 36 hours)

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |


| or HIST 201‘History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123) |  |  |
| :---: | :---: | :---: |
| or PLSC 200American National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Science sta | ate minimum core electives | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | s 3 |
| Data Science Required Core (47 hours) |  |  |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |
| Data Science Required Additional Courses |  |  |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one | of these two-course sequences | 6-7 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |
| Or |  |  |
| INEG 2323 \& INEG 2314 | Probability and Stochastic Processes for Industrial Engineers and Statistics for Industrial Engineers I |  |
| Data Science Concentration Courses 20 |  | 20-21 |
| General Electives |  | 2-4 |
| Total Hours |  | 120 |
| Required Cybersecurity Data Analytics Concentration Courses |  |  |
| Required Courses: |  | 15 |
| ACCT 2013 Accounting Principles or ACCT 20́́Accounting Principles II |  |  |
| DASC 3223 Cyber Crime and Cyber Terrorism (Cyber Crime and Cyber Terrorism) |  |  |
| ISYS 4013 | Principles of Data and Cybersecurity |  |
| ISYS 4023 | Network and Data Security in a Changing World |  |
| ISYS 4043 | Cybersecurity, Crime and Data Privacy Law Fundamentals |  |
| Elective Cybersecurity and Data Concentration Courses (Choose 2 of 6 the following): |  |  |
| ISYS 4033 | Advanced Information Security Management |  |
| ISYS 4053 | Advanced Cybersecurity, Crime and Privacy Law |  |

3

DASC 2113 Principles and Techniques of Data Science 3
DASC 2203 Data Management and Data Base 3
DASC 2213 Data Visualization and Communication (Tableau) 3
DASC 3103 Cloud Computing and Big Data 3
DASC 3203 Optimization Methods in Data Science 3
DASC 3213 Statistical Learning 3
DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and Analytics 3

Data Science Concentration Courses 20-21

Total Hours 120
Required Cybersecurity Data Analytics Concentration Courses
Required Courses: 15
ACCT 2013 Accounting Principles
or ACCT 20́Accounting Principles II
DASC 3223 Cyber Crime and Cyber Terrorism (Cyber Crime and Cyber Terrorism)
ISYS 4013 Principles of Data and Cybersecurity
ISYS 4023 Network and Data Security in a Changing World
ISYS 4043 Cybersecurity, Crime and Data Privacy Law Fundamentals
Elective Cybersecurity and Data Concentration Courses (Choose 2 of 6 the following):

ISYS 4033 Advanced Information Security Management
ISYS 4053 Advanced Cybersecurity, Crime and Privacy Law

| ISYS 4173 Blockchain Fundamentals |  |  |
| :---: | :---: | :---: |
| Total Hours |  | 21 |
| Data Science B.S. with Cybersecurity Data Analytics Concentration Eight-Semester Plan |  |  |
| First Year | Fall | Units <br> Spring |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) | 4 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| DASC 1003 Introduction to Data Science | 3 |  |
| DASC 1104 Programming Languages for Data Science | 4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |
| ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) |  | 3 |
| ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) |  | 3 |
| DASC 1204 Introduction to Object Oriented Programming for Data Science |  | 4 |
| DASC 1223 Role of Data Science in Today's World |  | 3 |
| Year Total: | 14 | 17 |
| Second Year |  | Units |
|  | Fall | Spring |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ or INEG 2323 Probability and Stochastic Processes for Industrial Engineers | 3 |  |
| DASC 2213 Data Visualization and Communication | 3 |  |
| DASC 2113 Principles and Techniques of Data Science | 3 |  |
| State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2) ${ }^{2}$ | 3 |  |
| SEVI 2053 Business Foundations (Data Science Majors-only section) |  | 3 |
| STAT 3003 Statistical Methods ${ }^{4}$ or INEG 2314 Statistics for Industrial Engineers I |  | 3-4 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ |  | 4 |
| DASC 2203 Data Management and Data Base |  | 3 |
| ACCT 2013 Accounting Principles or ACCT 2023 Accounting Principles II |  | 3 |
| Year Total: | 16 | 16 |


| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |  |
| DASC 3103 Cloud Computing and Big Data | 3 |  |
| DASC 3223 Cyber Crime and Cyber Terrorism (Cyber Crime and Cyber Terrorism) | 3 |  |
| State Minimum Core Social Sciences Elective (General Education Outcomes 3.2 and 3.3) ${ }^{2}$ | 3 |  |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ | 4 |  |
| DASC 3203 Optimization Methods in Data Science |  | 3 |
| DASC 3213 Statistical Learning |  | 3 |
| ISYS 4013 Principles of Data and Cybersecurity |  | 3 |
| State Minimum Core Social Sciences Elective (Satisfied General Education Outcomes 3.3 and $4.1)^{2}$ |  | 3 |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{2}$ |  | 3 |
| Year Total: | 16 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and Analytics | 3 |  |
| ISYS 4023 Network and Data Security in a Changing World | 3 |  |
| ISYS 4043 Cybersecurity, Crime and Data Privacy Law Fundamentals | 3 |  |
| DASC 4993 Data Science Practicum II (Satisfies General Education Outcome 6.1) |  | 3 |
| Concentration Elective |  | 3 |
| Concentration Elective |  | 3 |
| General Education Elective ${ }^{3}$ |  | 2-3 |
| Year Total: | 14 | 2 |
| Total Units in Sequence: |  | 120 |
| ${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1 by meeting the prerequisites for MATH 2554 (https://catalog.uark.edu/search/? $\mathrm{P}=\mathrm{MATH}$ \%202554). <br> ${ }^{2}$ Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections. <br> ${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections. |  |  |
|  |  |  |
|  |  |  |

${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Data Science Statistics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Data Science Statistics Concentration. Below those is a recommended eightsemester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  |  |
| Fine Arts state minimum core |  |  |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  |  |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) <br> or HIST 201‘History of the American People, 1877 to Present <br> (ACTS Equivalency $=$ HIST 2123) <br> or PLSC 20CAmerican National Government (ACTS Equivalency = PLSC 2003) |  |  |
|  |  |  |
|  |  |  |

Social Science state minimum core electives

| ECON 2143 | Basic Economics: Theory and Practice (represents <br> 3 of the 9 required credit hours for Social Science <br> elective) |
| :--- | :--- |


| Data Science Required Core (47 hours) |  |  |
| :--- | :--- | :--- |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, <br> Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for | 4 |
|  | Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |


| DASC 3103 | Cloud Computing and Big Data | 3 |
| :---: | :---: | :---: |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |
| Data Science Required Additional Courses |  |  |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences |  | -7 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |
| Or |  |  |
| INEG 2323 \& INEG 2314 | Probability and Stochastic Processes for Industria Engineers and Statistics for Industrial Engineers I |  |
| Data Science Concentration Courses |  |  |
| General Electives |  | 4 |
| Total Hours |  | 20 |
| Required Data Science Statistics Concentration Courses |  |  |
| STAT 3113 | Introduction to Mathematical Statistics | 3 |
| STAT 4373 | Experimental Design | 3 |
| STAT 4013 | Statistical Forecasting and Prediction (Statistical Forecasting and Prediction) | 3 |
| STAT 4333 | Analysis of Categorical Responses | 3 |
| Elective Data Science Statistics Concentration (Select 9 hours) |  | 9 |
| STAT 4023 | Bayesian Methods (Bayesian Methods) |  |
| STAT 5043 | Sampling Techniques |  |
| STAT 4033 | Nonparametric Statistical Methods |  |
| CSCE 4613 | Artificial Intelligence |  |
| GEOS 3013 | Foundations of Geospatial Data Analysis |  |
| GEOS 3543 | Geospatial Applications and Information Science |  |
| GEOS 3563 | Geospatial Data Mining |  |

## Total Hours

Data Science B.S. with Data Science
Statistics Concentration Eight-Semester Program
Science
MATH 2564 Calculus II (ACTS Equivalency =

ECON 2143 Basic Economics: Theory and
Practice (Satisfies General Education Outcome 3.3)

ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented
Programming for Data Science
DASC 1223 Role of Data Science in Today's World Year Total:
Second Year
DASC 2594 Multivariable Math for Data Scientists
STAT 3013 Introduction to Probability ${ }^{4}$
or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication
DASC 2113 Principles and Techniques of Data
Science
State Minimum Core U.S. History or Government
Elective (Satisfies General Education Outcome
4.2)
SEVI 2053 Business Foundations (Data Science
Majors-only section)
STAT 3003 Statistical Methods ${ }^{4}$
or INEG 2314 Statistics for Industrial Engineers I
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 2203 Data Management and Data Base
STAT 3113 Introduction to Mathematical Statistics
Year Total:
Third Year
DASC 2133 Data Privacy \& Ethics (Satisfies
General Education Outcome 5.1)
DASC 3103 Cloud Computing and Big Data
State Minimum Core Social Sciences Elective
(Satisfies General Education Outcomes 3.2 and
3.3)
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
STAT 4373 Experimental Design
DASC 3203 Optimization Methods in Data Science
DASC 3213 Statistical Learning
STAT 4333 Analysis of Categorical Responses
State Minimum Core Social Sciences Elective
(Satisfies General Education Outcomes 3.3 and
4.1)
State Minimum Core Fine Arts Elective (Satisfies
General Education Outcome 3.1)
Year Total:

| Fourth Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and | 3 |  |
| Analytics |  |  |
| STAT 4013 Statistical Forecasting and Prediction | 3 |  |
| (Statistical Forecasting and Prediction) |  |  |
| Data Science Statistics Concentration Elective | 3 |  |
| DASC 4993 Data Science Practicum II (Satisfies |  | 3 |
| General Education Outcome 6.1) |  |  |
| Data Science Statistics Concentration Elective |  | 3 |
| Data Science Statistics Concentration Elective |  | 3 |
| General Elective ${ }^{3}$ |  | $2-3$ |
| Year Total: | 14 | 12 |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Geospatial Data Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Geospatial Data Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

State Minimum Core and General Education ( 36 hours)
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) 3

| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 | Required Geospatial Data Analytics Concentration Courses |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |  |  |  |  |
| Science state minimum electives (two courses with labs) |  | 8 | GEOS 3543 | Geospatial Applications and Information Science |  |  |
| Fine Arts state minimum core |  | 3 | GEOS 3553 | Spatial Analysis Using ArcGIS |  |  |
| Humanities state minimum core |  |  | OS |  |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |  | Geospatial Data Mining |  |  |
| U.S. History and Government state minimum core |  | 3 | GEOS 4263 | troduction to Geodatabases |  |  |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |  | Geospatial Data Science - Sources and Characteristics |  | 3 |
|  |  |  | GEOS 4653 | GIS Analysis and Modeling |  | 3 |
| or HIST 201!'History of the American People, 1877 to Present <br> (ACTS Equivalency $=$ HIST 2123) |  |  | Elective Geospatial Data Analytics Concentration Courses (Select 3 hours) |  |  |  |
| or PLSC 20CAmerican National Government (ACTS Equivalency = PLSC 2003) |  |  | GEOS 3023 | Introduction to Cartography |  |  |
| Social Science state minimum core electives |  |  | GEOS 3213 | Principles of Remote Sensing |  |  |
| ECON 2143 | Basic Economics: Theory and Practice (represents |  | GEOS 4133 |  |  |  |
|  | 3 of the 9 required credit hours for Social Science elective) |  | GEOS 4553 | Introduction to Raster GIS |  |  |
|  |  |  | GEOS 4593 | Introduction to Global Positioning Systems and Global Navigation Satellite Systems |  |  |
| Data Science Required Core (47 hours) |  |  |  |  |  |  |
| DASC 1003 | Introduction to Data Science | 3 | Total Hours |  |  | 21 |
| DASC 1104 | Programming Languages for Data Science (R, Python) |  | Data Science B.S. with Geospatial Data Analytics Concentration Eight-Semester Program |  |  |  |
| DASC 1204 | Introduction to Object Oriented Programming for Data Science (JAVA) | 4 |  |  |  |  |  |  |  |
| DASC 2594 | Multivariable Math for Data Scientists |  | First Year |  | Units |  |
| DASC 1223 | Role of Data Science in Today's World | 3 |  |  | Fall |  |
| DASC 2113 | Principles and Techniques of Data Science |  | MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) |  | 4 |  |
| DASC 2203 | Data Management and Data Base |  |  |  |  |  |
| DASC 2213 | Data Visualization and Communication (Tableau) |  |  |  |  |  |
| DASC 3103 | Cloud Computing and Big Data |  |  |  | 3 |  |
| DASC 3203 | Optimization Methods in Data Science 3 |  |  |  | = ENGL 1013) (Satisfies General Education Outcome 1.1) |  |
| DASC 3213 |  |  | 3 |  |
| DASC 4892 | Data Science Practicum I 2 |  |  |  | DASC 1003 Introduction to Data Science |  |
| DASC 4113 | Machine Learning | 3 | DASC 1104 Programming Languages for Data Science |  | 4 |  |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 | MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  |  | 4 |
| DASC 4993 | Data Science Practicum II | 3 |  |  |  |  |  |  |  |
| Data Science Required Additional Courses |  |  | ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) |  |  | 3 |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |  |  |  |  |  |  |  |  |
| SEVI 2053 | Business Foundations | 3 |  |  |  |  |  |  |  |  |
| Choose from one of these two-course sequences 6-7 |  |  | ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) |  |  | 3 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |  |  |  |  |  |  |  |  |
| Or |  |  | DASC 1204 Introduction to Object Oriented Programming for Data Science |  |  | 4 |
| INEG 2323 <br> \& INEG 2314 | Probability and Stochastic Processes for Industrial Engineers |  |  |  |  |  |  |  |  |  |
|  |  |  | DASC 1223 Role of Data Science in Today's World |  |  | 317 |
|  | and Statistics for Industrial Engineers I |  |  |  |  |  |
| Data Science Concentration Courses 20-21 |  |  |  |  |  |  |  |  |  |  |  |
| General Electives |  | -4 | Second Year |  |  |  |
| Total Hours |  | 20 |  |  | Fall Spring |  |
|  |  |  | DASC 2594 Multivariable Math for Data Scientists STAT 3013 Introduction to Probability ${ }^{4}$ or INEG 2323 Probability and Stochastic Processes for Industrial Engineers |  | 4 |  |
|  |  |  |  |  | 3 |  |
|  |  |  | DASC 2213 Data Visualization and Communication |  | 3 |  |

DASC 2113 Principles and Techniques of Data Science

State Minimum Core U.S. History or Government
Elective (Satisfies General Education Outcome
$4.2)^{2}$
SEVI 2053 Business Foundations (Data Science
Majors-only section)
STAT 3003 Statistical Methods ${ }^{4}$
or INEG 2314 Statistics for Industrial Engineers I
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 2203 Data Management and Data Base
GEOS 3543 Geospatial Applications and Information Science
Year Total:

| Third Year |  |
| :---: | :---: |
|  | Fall |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |
| DASC 3103 Cloud Computing and Big Data | 3 |
| GEOS 3553 Spatial Analysis Using ArcGIS | 3 |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3) $2^{2}$ | 3 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ | 4 |
| DASC 3203 Optimization Methods in Data Science |  |
| DASC 3213 Statistical Learning |  |
| GEOS 3593 Introduction to Geodatabases |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and $4.1)^{2}$ |  |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{2}$ |  |
| Year Total: | 16 |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and | 3 |  |
| Analytics | 3 |  |
| GEOS 3563 Geospatial Data Mining | 3 |  |
| GEOS 4263 Geospatial Data Science - Sources |  | 3 |
| and Characteristics |  | 3 |
| DASC 4993 Data Science Practicum II (Satisfies |  | 3 |
| General Education Outcome 6.1) |  | $2-3$ |
| GEOS 4653 GIS Analysis and Modeling | 14 | 12 |
| Geospatial Data Analytics Concentration Elective |  |  |
| General Elective ${ }^{3}$ |  | 3 |
| Year Total: |  |  |

Total Units in Sequence:

## Units <br> Spring

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Music Industry Data Analytics Concentration Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

State Minimum Core and General Education (36 hours)

| ENGL 1013 | Composition I (ACTS Equivalency $=$ ENGL 1013) | 3 |
| :--- | :--- | :--- |
| ENGL 1033 | Technical Composition II (ACTS Equivalency $=$ | 3 |

ENGL 1033 Technical Composition II (ACTS Equivalency = 3 ENGL 1023)
MATH $2554 \quad$ Calculus I (ACTS Equivalency $=$ MATH 2405) 4
Science state minimum electives (two courses with labs) 8
Fine Arts state minimum core 3

Humanities state minimum core
PHIL 3103 Ethics and the Professions 3
U.S. History and Government state minimum core 3

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201؛History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
or PLSC 200American National Government (ACTS Equivalency = PLSC 2003)
Social Science state minimum core electives 6
ECON 2143 Basic Economics: Theory and Practice (represents 3 3 of the 9 required credit hours for Social Science elective)
Data Science Required Core (47 hours)
DASC 1003 Introduction to Data Science 3
DASC 1104 Programming Languages for Data Science (R, 4 Python)

| DASC 1204 | Introduction to Object Oriented Programming for <br> Data Science (JAVA) | 4 |
| :--- | :--- | :--- |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |


| Data Science Required Additional Courses |  |  |
| :--- | ---: | ---: |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences | $6-7$ |  |


| STAT 3013 | Introduction to Probability |
| :--- | :--- |
| \& STAT 3003 | and Statistical Methods (Statistical Methods) |

Or

INEG 2323 Probability and Stochastic Processes for Industrial \& INEG 2314 Engineers and Statistics for Industrial Engineers I
Data Science Concentration Courses 20-21
General Electives $\quad$ 2-4

Total Hours

## Music Industry Data Analytics Concentration Courses

| Required Courses (15 hours) |  |  |
| :--- | :--- | :--- |
| MLIT 1333 | Popular Music | 3 |
| MUIN 3213 | 21st Century Music Industry | 3 |
| MUIN 4103 | Legal Aspects of the Music Industry | 3 |
| MUIN 4553 | Live Music Business | 3 |
| MUIN 4563 | Artist Development | 3 |
| Elective Music Industry Data Analytics Courses (Choose one of the | 6 |  |
| following two-course sequences): |  |  |
| Sequence 1: Business Sequence |  |  |
| ISYS 4293 | Business Intelligence |  |
| MKTG 3433 | Introduction to Marketing |  |
| Sequence 2: Technology Sequence |  |  |
| CSCE 4143 | Data Mining |  |
| CSCE 4613 | Artificial Intelligence |  |

Total Hours
Data Science B.S. with Music Industry Data Analytics Concentration Eight-Semester Plan
First Year
MATH 2554 Calculus I (ACTS Equivalency
$=$ MATH 2405) (Satisfies General Education
Outcome 2.1)

Units
Fall Spring 4
ENGL 1013 Composition I (ACTS Equivalency ..... 3= ENGL 1013) (Satisfies General EducationOutcome 1.1)DASC 1003 Introduction to Data Science3
DASC 1104 Programming Languages for Data ..... 4
ScienceMATH 2564 Calculus II (ACTS Equivalency =MATH 2505)ECON 2143 Basic Economics: Theory andPractice (Satisfies General Education Outcome
3.3)
ENGL 1033 Technical Composition II (ACTSEquivalency = ENGL 1023) (Satisfies GeneralEducation Outcome 1.2)DASC 1204 Introduction to Object OrientedProgramming for Data ScienceDASC 1223 Role of Data Science in Today's WorldYear Total:
Second Year Fall
DASC 2594 Multivariable Math for Data Scientists ..... 4
STAT 3013 Introduction to Probability ${ }^{4}$ ..... 3
or INEG 2323 Probability and StochasticProcesses for Industrial Engineers
DASC 2113 Principles and Techniques of Data ..... 3
Science
DASC 2213 Data Visualization and Communication ..... 3
State Minimum Core U.S. History or Government ..... 3
Elective (Satisfies General Education Outcome
$4.2)^{2}$
SEVI 2053 Business Foundations (Data ScienceMajors-only section)STAT 3003 Statistical Methods ${ }^{4}$or INEG 2314 Statistics for Industrial Engineers IState Minimum Core Natural Science Elective withLab (Satisfies General Education Outcome 3.4) ${ }^{2}$DASC 2203 Data Management and Data BaseYear Total:16
Third Year
Fall Units
DASC 2133 Data Privacy \& Ethics (Satisfies ..... 3
General Education Outcome 5.1)DASC 3103 Cloud Computing and Big Data3
State Minimum Core Social Sciences Elective ..... 3(General Education Outcomes 3.2 and 3.3) ${ }^{2}$
State Minimum Core Natural Science Elective with4
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$3
DASC 3203 Optimization Methods in Data Science ..... 3
DASC 3213 Statistical Learning ..... 3
MUIN 4103 Legal Aspects of the Music Industry

State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{2}$
State Minimum Core Social Sciences Elective (Satisfied General Education Outcomes 3.3 and $4.1)^{2}$
Year Total: 16
Fourth Year
DASC 4892 Data Science Practicum I
DASC 4113 Machine Learning
DASC 4123 Social Problems in Data Science and
Analytics
MUIN 4553 Live Music Business
MUIN 4563 Artist Development
DASC 4993 Data Science Practicum II (Satisfies
General Education Outcome 6.1)
Concentration Elective
Concentration Elective
General Education Elective ${ }^{3}$
Year Total:

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cl \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3c \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
3 Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
4 Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Operations Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Operations Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.
U.S. History and Government state minimum core3

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201:'History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)
or PLSC 200American National Government (ACTS Equivalency = PLSC 2003)
Social Science state minimum core electives 6

ECON 2143 Basic Economics: Theory and Practice (represents 3 3 of the 9 required credit hours for Social Science elective)
Data Science Required Core (47 hours)
DASC 1003 Introduction to Data Science 3
DASC 1104 Programming Languages for Data Science (R, 4 Python)
clDASC 1204 Introduction to Object Oriented Programming for 4-
DASC 2594 Multivariable Math for Data Scientists 4

DASC 1223 Role of Data Science in Today's World 3
DASC 2113 Principles and Techniques of Data Science 3
DASC 2203 Data Management and Data Base 3
DASC 2213 Data Visualization and Communication (Tableau) 3
DASC 3103 Cloud Computing and Big Data 3
DASC 3203 Optimization Methods in Data Science 3
DASC 3213 Statistical Learning 3
DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and Analytics 3
DASC 4993 Data Science Practicum II 3
Data Science Required Additional Courses
MATH $2564 \quad$ Calculus II (ACTS Equivalency = MATH 2505) 4
SEVI 2053 Business Foundations 3


Total Hours

## Data Science B.S. with Operations Analytics Concentration <br> Eight-Semester Program

## First Year

MATH 2554 Calculus I (ACTS Equivalency
= MATH 2405) (Satisfies General Education
Outcome 2.1) ${ }^{1}$
ENGL 1013 Composition I (ACTS Equivalency
3
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
DASC 1003 Introduction to Data Science
3
DASC 1104 Programming Languages for Data 4 Science

MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)

ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented Programming for Data Science

DASC 1223 Role of Data Science in Today's World Year Total:

Second Year | Units |
| ---: |
| Fall |

DASC 2594 Multivariable Math for Data Scientists

STAT 3013 Introduction to Probability ${ }^{4}$
or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication
DASC 2113 Principles and Techniques of Data 3
Science
State Minimum Core U.S. History or Government 3
Elective (Satisfies General Education Outcome
$4.2)^{2}$
SEVI 2053 Business Foundations (Data Science
Majors-only section)
INEG 2314 Statistics for Industrial Engineers I or STAT 3003 Statistical Methods
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 2203 Data Management and Data Base
INEG 2413 Engineering Economic Analysis
Year Total:

Third Year
Fall
DASC 2133 Data Privacy \& Ethics (Satisfies 3
General Education Outcome 5.1)
DASC 3103 Cloud Computing and Big Data
INEG 2613 Introduction to Operations Research
State Minimum Core Social Sciences Elective
(Satisfies General Education Outcomes 3.2 and $3.3)^{2}$
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 3203 Optimization Methods in Data Science
DASC 3213 Statistical Learning
State Minimum Core Social Sciences Elective
(Satisfies General Education Outcomes 3.3 and
$4.1)^{2}$
Operations Data Analytics Concentration Elective
Year Total:
Fourth Year Units

DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and
Analytics
INEG 3553 Production Planning and Control
Operations Data Analytics Concentration Elective
3

Units
Spring

DASC 4993 Data Science Practicum II (Satisfies
General Education Outcome 6.1)
Operations Data Analytics Concentration Elective


## Requirements for B.S. in Data Science with Social Data Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Social Data Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |


| or HIST 201‘History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123) |  |  |
| :---: | :---: | :---: |
| or PLSC 200American National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Science st | ate minimum core electives | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | ts |
| Data Science Required Core (47 hours) |  |  |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |
| Data Science Required Additional Courses |  |  |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences |  | 6-7 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |
| Or |  |  |
| INEG 2323 <br> \& INEG 2314 | Probability and Stochastic Processes for Industrial Engineers and Statistics for Industrial Engineers I |  |
| Data Science Concentration Courses |  | 20-21 |
| General Electives |  | 2-4 |
| Total Hours |  | 120 |
| Required Social Data Analytics Concentration Courses |  |  |
| SOCI 2013 | $\begin{aligned} & \text { General Sociology (ACTS Equivalency = SOCI } \\ & \text { 1013) } \end{aligned}$ | 3 |
| SOCI 3303 | Social Data and Analysis | 3 |
| SOCI 3301L | Social Data and Analysis Laboratory | 1 |
| SOCI 3313 | Social Research | 3 |
| Elective Social Data Analytics Concentration Courses (Select 10 hours) |  |  |
| GEOS 3013 | Foundations of Geospatial Data Analysis |  |
| GEOS 3543 | Geospatial Applications and Information Science |  |
| GEOS 3563 | Geospatial Data Mining |  |
| GEOS 4553 | Introduction to Raster GIS |  |
| PLSC 3603 | Scope and Methods of Political Science |  |


| PLSC 4213 | Campaigns and Elections |
| :--- | :--- |
| SCWK 4073 | Social Work Research and Technology I |
| SOCI 4013 | Special Topics in Sociology |
| SOCI 4183 | Social Network Analysis |

Total Hours

## Data Science B.S. with Social Data Analytics

 ConcentrationEight-Semester Program
First Year
MATH 2554 C
= MATH 2405
Outcome 2.1)
Fall Spring
= ENGL 1013) (Satisfies General Education Outcome 1.1)
DASC 1003 Introduction to Data Science
DASC 1104 Programming Languages for Data
Science
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)

ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented
Programming for Data Science
DASC 1223 Role of Data Science in Today's World Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability |  |  |

or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication
3
DASC 2113 Principles and Techniques of Data 3

## Science

State Minimum Core U.S. History or Government
Elective (Satisfies General Education Outcome
4.2) ${ }^{2}$

SEVI 2053 Business Foundations (Data Science
Majors-only section)
STAT 3003 Statistical Methods ${ }^{4}$
or INEG 2314 Statistics for Industrial Engineers I
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 2203 Data Management and Data Base
SOCI 2013 General Sociology (ACTS Equivalency
= SOCI 1013) (Satisfies General Education
Outcomes 3.3, 4.1, and 4.2) ${ }^{5}$

Units
Year Total: 16

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 2133 Data Privacy \& Ethics (Satisfies <br> General Education Outcome 5.1) | 3 |  |
| DASC 3103 Cloud Computing and Big Data <br> State Minimum Core Natural Science Elective with | 3 | 4 |
| Lab (Satisfies General Education Outcome 3.4) |  |  |

$\begin{array}{ll}\text { DASC } 3203 \text { Optimization Methods in Data Science } & 3 \\ \text { DASC } 3213 \text { Statistical Learning } & 3\end{array}$
SOCI 4253 Social Impact of Data Analytics 3
State Minimum Core Social Sciences Elective 3
(Satisfies General Education Outcomes 3.2 and
$3.3)^{2}$
Year Total: 17

General Education Outcome 3.1) ${ }^{2}$
Social Data Analytics Elective
Year Total: 14 14

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 81), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.
${ }^{5}$ SOCI 2013 General Sociology is a required course for the Social Data Analytics Concentration. The course may also be used to meet three
hours toward the State Minimum Core Social Science requirements. As such, students may complete three hours of general education electives in lieu of an additional State Minimum Core Social Science requirement for a total of 7 hours of general education electives.

## Requirements for B.S. in Data Science with Supply Chain Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Supply Chain Analytics Concentration. Below those is a recommended eightsemester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency $=$ HIST 2113) |  |  |
| or HIST 201؛History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  |  |
| or PLSC 20CAmerican National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Science state minimum core electives |  | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | 3 |
| Data Science Required Core (47 hours) |  |  |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |


| DASC 3103 | Cloud Computing and Big Data | 3 |
| :---: | :---: | :---: |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |
| Data Science Required Additional Courses |  |  |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences |  | 7 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |
| Or |  |  |
| INEG 2323 <br> \& INEG 2314 | Probability and Stochastic Processes for Industrial Engineers and Statistics for Industrial Engineers I |  |
| Data Science Concentration Courses |  | 21 |
| General Electives |  | -4 |
| Total Hours |  | 0 |
| Required Supply Chain Analytics |  |  |
| Concentration Courses |  |  |
| SCMT 2103 | Integrated Supply Chain Management | 3 |
| SCMT 3443 | DELIVER: Transportation and Distribution Management | 3 |
| SCMT 3613 | SOURCE: Procurement and Supply Management | 3 |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics | 3 |
| SCMT 3663 | MAKE: Supply Chain Process Improvement | 3 |
| SCMT 4653 | Supply Chain Strategy and Change Management | 3 |
| Elective Supply Chain Analytics Concentration (Select 3 hours) |  | 3 |
| SCMT 3633 | Supply Chain Service and Customer Management |  |
| SCMT 3653 | Project Management: Supply Chain New Product Planning and Launch |  |
| SCMT 4123 | Environmental, Social and Governance Strategies and Operations in Supply Chains |  |
| SCMT 4103 | Special Topics in Supply Chain Management |  |
| SCMT 3643 | International Logistics |  |
| SCMT 4633 | Supply Chain Performance Management and Analytics |  |
| Any Industrial the Operation | Engineering (INEG) course at the 3000 level from Analytics Concentration |  |

Total Hours

\section*{Data Science B.S. with Supply Chain Analytics Concentration Eight-Semester Program <br> First Year $\quad$ Fall | Units |
| ---: |
| Spring | <br> MATH 2554 Calculus I (ACTS Equivalency 4}

= MATH 2405) (Satisifies General Education
Outcome 2.1) ${ }^{1}$

ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisifies General Education Outcome 1.1)
DASC 1003 Introduction to Data Science
DASC 1104 Programming Languages for Data Science
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)

ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisifies General
Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented
Programming for Data Science
DASC 1223 Role of Data Science in Today's World Year Total:

Second Year
DASC 2594 Multivariable Math for Data Scientists
STAT 3013 Introduction to Probability
or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication
DASC 2113 Principles and Techniques of Data

## Science

State Minimum Core U.S. History or Government
Elective (Satisfies General Education Outcome

$$
4.2)^{2}
$$

SEVI 2053 Business Foundations (Data Science
Majors-only section)
STAT 3003 Statistical Methods ${ }^{4}$
or INEG 2314 Statistics for Industrial Engineers I
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 2203 Data Management and Data Base
ACCT 2013 Accounting Principles (This pre-req to
SYDA Concentration courses uses the "General
Elective" to allow a full 21 hours for Concentration courses)
Year Total:
Third Year Fall

DASC 2133 Data Privacy \& Ethics (Satisfies
3
DASC 3103 Cloud Computing and Big Data
State Minimum Core Social Sciences Elective
(Satisfies General Education Outcomes 3.2 and 3.3) ${ }^{2}$

State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
SCMT 2103 Integrated Supply Chain Management
DASC 3203 Optimization Methods in Data Science Fall

Units
Spring


## Faculty

Alverson, Andrew James, Ph.D. (University of Texas at Austin), M.S. (lowa State University), B.S. (Grand Valley State University), Associate Professor, Department of Biological Sciences, 2012, 2018.
Barrett, David A., Ph.D., M.A. (University of Arkansas), B.A. (Hendrix College), Instructor, Department of Philosophy, 2014.
Cothren, Jackson David, Ph.D., M.S. (The Ohio State University),
B.S. (United States Air Force Academy), Professor, Department of

Geosciences, Leica Geosystems Chair in Geospatial Imaging, 2004, 2020.

Cronan, Timothy P., Ph.D. (Louisiana Tech University), M.S. (South Dakota State University), B.S. (University of Southwestern Louisiana), Professor, Department of Information Systems, M.D. Matthews Endowed Chair in Information Systems, 1979.
Cummings, Michael, Ph.D. (University of Minnesota), J.D. and M.P.A. (Brigham Young University), B.S. (Utah Valley), Assistant Professor, Department of Strategic, Entrepreneurship and Venture Innovation, 2017.
Fugate, Brian, Ph.D., M.B.A., B.S. (University of Tennessee), Professor, J.B. Hunt Transport Department of Supply Chain Management, Oren Harris Chair in Transportation, 2015, 2018.
Gauch, John Michael, Ph.D. (University of North Carolina at Chapel Hill), M.Sc., B.Sc. (Queen's University, Canada), Professor, Department of Computer Science and Computer Engineering, 2008.
Gruenewald, Jeffrey A., Ph.D. (Michigan State University), Professor, Department of Sociology and Criminology, 2019, 2022.
Harris, Casey Taggart, Ph.D., M.A. (Pennsylvania State University), B.S. (Texas A\&M University), Professor, Department of Sociology and Criminology, 2011, 2023.
Keiffer, Elizabeth, Ph.D., M.A. (University of Arkansas), B.S. (East Central University), Teaching Assistant Professor, Department of Information Systems, 2016, 2019.
Nakarmi, Ukash, Ph.D. (University at Buffalo), M.S. (Oklahoma State University), Assistant Professor, Department of Computer Science and Computer Engineering, 2020.
Pohl, Edward A., Ph.D., M.S.R.E. (University of Arizona), M.S.S.E. (Air Force Institute of Technology), M.S.E.M. (University of Dayton), B.S.E.E. (Boston University), Professor, Department of Industrial Engineering, Twenty-First Century Professorship in Engineering, 2004, 2013.
Rao, Raj R., Ph.D. (University of Georgia), M.S. (University of Texas), M.Sc., B.E. (Birla Institute of Technology and Sciences, India), Professor, Department of Biomedical Engineering, 2016.
Richardson, Vernon J., Ph.D. (University of Illinois-Urbana-Champaign), M.B.A., B.S. (Brigham Young University), Distinguished Professor, William Dillard Department of Accounting, G. William Glezen Jr. Endowed Chair in Accounting, 2005, 2016.
Ridge, Jason, Ph.D., M.A., B.A. (Oklahoma State University), Associate Professor, Department of Strategic, Entrepreneurship and Venture Innovation, 2015, 2017.
Robinson, Samantha, Ph.D., M.S., B.S. (University of Arkansas), Teaching Associate Professor, Department of Mathematical Sciences, Julia A. Hicks Chair, 2015, 2022.
Rosales, Claudia, Ph.D., M.S. (University of Cincinnati), B.S.
(Universidad Rafael Landivar), Assistant Professor, J.B. Hunt Transport Department of Supply Chain Management, 2021.
Rossetti, Manuel D., Ph.D., P.E., M.S.I.E. (The Ohio State University), B.S.I.E. (University of Cincinnati), University Professor, Department of Industrial Engineering, 1999, 2022.
Schubert, Karl, Ph.D. (University of Arkansas), M.S.Ch.E. (University of Kentucky), B.S.Ch.E (University of Arkansas), Professor of Practice, Department of Industrial Engineering, 2016.
Sullivan, Kelly M., Ph.D. (University of Florida), M.S.I.E., B.S.I.E.
(University of Arkansas), Associate Professor, Department of Industrial Engineering, 2012, 2019.
Wu, Xintao, Ph.D. (George Mason University), M.E. (Chinese Academy of Space Technology), B.S. (University of Science and Technology of China), Professor, Department of Computer Science and Computer Engineering, Charles D. Morgan/Acxiom Graduate Research Chair, 2014, 2019.

## Courses

DASC 1003. Introduction to Data Science. 3 Hours.
Introduction to Data Science is a course providing an overview of Data Science and preparation of Data Science First Year students for the Data Science program and for choosing one of the Data Science program concentrations. Corequisite: MATH 2554 or MATH 2554 C or MATH 2445. Prerequisite: Students must be a DTSCBS or DTSCFR major. (Typically offered: Fall)

## DASC 1003H. Honors Introduction to Data Science. 3 Hours.

Introduction to Data Science is a course providing an overview of Data Science and preparation of Data Science First Year students for the Data Science program and for choosing one of the Data Science program concentrations. Corequisite: MATH 2554 or MATH 2554C or MATH 2445. Prerequisite: Students must have honors standing and be a DTSCBS or DTSCFR major. (Typically offered: Fall) This course is equivalent to DASC 1003.

## DASC 1011. Success in Data Science Studies. 1 Hour.

This course provides preparation for Data Science First Year students for the Data Science program and for learning about University campus resources for students. This course is focused on students who are not MATH 2554 Calculus I or MATH 2445 Calculus I with Review ready. Prerequisite: Students must be a Data Science Major. (Typically offered: Fall)

## DASC 1104. Programming Languages for Data Science. 4 Hours.

Programming Languages for Data Science provides a semester-long introduction to basic concepts, tools, and languages for computer programming using Python and R , two powerful programming languages used by data scientists. This class will introduce students to computer programming and provide them with the basic skills and tools necessary to efficiently collect, process, analyze, and visualize datasets. Students will gain hands-on experience with de novo programming in R and Python, finding and utilizing packages, and working in both interactive (Jupyter and RStudio) and non-interactive (Unix) environments. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major. (Typically offered: Fall)
DASC 1204. Introduction to Object Oriented Programming for Data Science. 4 Hours.
Introduction to Object Oriented Programming for Data Science, introduces objectoriented programming in JAVA. It covers object-oriented programming elements and techniques in JAVA, such as primitive types and expressions, basic I/O, basic programming structures, abstract data type, object class and instance, Methods, Java File I/O, object inheritance, collections and composite objects, advanced input / output: streams and files, and exception handling. Students will gain hands-on programming experience using JAVA. Corequisite: Lab component. Prerequisite: DASC 1104 and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)

DASC 1223. Role of Data Science in Today's World. 3 Hours.
Role of Data Science in Today's World is a survey course providing an overview of the Data Science Curriculum and an introduction to the essential elements of data science: data collection and management; summarizing and visualizing data; basic ideas of statistical inference; predictive analytics and machine learning. Students will continue their hands-on experience using the Python and R programming languages and Jupyter notebooks.Prerequisite: DASC 1003 and DASC 1104 and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)
DASC 1223H. Honors Role of Data Science in Today's World. 3 Hours.
Role of Data Science in Today's World is a survey course providing an overview of the Data Science Curriculum and an introduction to the essential elements of data science: data collection and management; summarizing and visualizing data; basic ideas of statistical inference; predictive analytics and machine learning. Students will continue their hands-on experience using the Python and R programming languages and Jupyter notebooks. Prerequisite: DASC 1003, DASC 1104, honors standing and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)
This course is equivalent to DASC 1223.

DASC 188V. Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

DASC 188VH. Honors Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major, have honors standing and by instructor permission only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 188 V .

## DASC 2103. Data Structures \& Algorithms. 3 Hours.

Data Structures \& Algorithms focuses on fundamental data structures and associated algorithms for computing and data analytics. Topics include the study of data structures such as linked lists, stacks, queues, hash tables, trees, and graphs, recursion, their applications to algorithms such as searching, sorting, tree and graph traversals, divide-and-conquer, greedy algorithms, and dynamic programming, and the theory of NP-completeness. Students will gain hands-on experience using Python or Java. Prerequisite: DASC 1204 and must be a DTSCBS major. (Typically offered: Spring)

DASC 2113. Principles and Techniques of Data Science. 3 Hours.
Principles and Techniques in Data Science is an intermediate semester-long data science course that follows an overview of data science in today's world. This class bridges between introduction to data science and upper division data science courses as well as methods courses in other concentrations. This class equips students with essential basic elements of data science, ranging from database systems, data acquisition, storage and query, data cleansing, data wrangling, basic data summarization and visualization, and data estimation and modeling. Students will gain hands-on experience using Python and various packages in Python. Corequisite: Lab component. Prerequisite: MATH 2564 and student must be a DTSCBS major. (Typically offered: Fall)
DASC 2133. Data Privacy \& Ethics. 3 Hours.
Data Privacy and Ethics (DASC 2133) explores the intersection of ethics and contemporary (big) data analytics. In particular, we will discuss how data analytics impacts ethical issues like privacy, autonomy, transparency, discrimination, data ownership, and justice, while also investigating its impact on the cohesiveness of society and democracy. Pre- or Corequisite: DASC 1001 and must be a DTSCBS or DTSCFR major. (Typically offered: Fall)

DASC 2203. Data Management and Data Base. 3 Hours.
Data Management and Data Base focuses on the investigation and application of data science database concepts including DBMS fundamentals, database technology and administration, data modeling, SQL, data warehousing, and current topics in modern database management. Prerequisite: MATH 2564, DASC 1204 and students must be a DTSCBS major. (Typically offered: Spring)

## DASC 2213. Data Visualization and Communication. 3 Hours.

Data Visualization and Communication is a seminar providing an essential element of data science: the ability to effectively communicate data analytics findings using visual, written, and oral forms. Students will gain hands-on experience using data visualization software and preparing multiple formats of written reports (technical, social media, policy) that build a data literacy and communication toolkit for interdisciplinary work. In essence, this is a course emphasizing finding and telling stories from data, including the fundamental principles of data analysis and visual presentation conjoined with traditional written formats. Prerequisite: DASC 1104 and DASC 1222 and students must be a DTSCBS major. (Typically offered: Fall)

## DASC 2594. Multivariable Math for Data Scientists. 4 Hours.

Multivariable Mathematics for Data Scientists provides an in depth look at the multivariate calculus and linear algebra necessary for a successful understanding of modeling for data science. Students will gain an understanding of the mathematical and geometric concepts used in optimization and scientific computation using mathematical and computational techniques. At the end of the course, students will be equipped with the calculus and linear algebra skills and knowledge to be successful in courses in optimization and advanced data science methods. Corequisite: Lab component. Prerequisite: MATH 2564 and DASC 1104 and student must be a DTSCBS major. (Typically offered: Fall)

## DASC 290V. Special Topics in Data Science. 1-6 Hour.

Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

## DASC 290VH. Honors Special Topics in Data Science. 1-6 Hour.

Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Honors standing and students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 290 V .
DASC 3103. Cloud Computing and Big Data. 3 Hours.
Cloud Computing and Big Data covers: introduction to distributed data computing and management, MapReduce, Hadoop, cloud computing, NoSQL and NewSQL systems, Big data analytics and scalable machine learning, real-time streaming data analysis. Students will gain hands-on experience using Amazon AWS, MongoDB, Hive, and Spark. Prerequisite: DASC 2594 and DASC 2203 and student must be a DTSCBS major. (Typically offered: Fall)

## DASC 3103H. Honors Cloud Computing and Big Data. 3 Hours.

Cloud Computing and Big Data covers: introduction to distributed data computing and management, MapReduce, Hadoop, cloud computing, NoSQL and NewSQL systems, Big data analytics and scalable machine learning, real-time streaming data analysis. Students will gain hands-on experience using Amazon AWS, MongoDB, Hive, and Spark. Prerequisite: DASC 2594, DASC 2203, honors standing and student must be a DTSCBS major. (Typically offered: Fall) This course is equivalent to DASC 3103.

## DASC 3203. Optimization Methods in Data Science. 3 Hours.

Optimization Methods in Data Science is an advanced mathematical course providing the foundations and concepts of optimization that are essential elements of machine learning algorithms in data science, ranging from mathematical optimization to convex optimization to unconstrained and constrained optimization to nonlinear optimization to stochastic optimization. Students will gain hands-on experience using Python and various optimization packages in Python. Prerequisite: DASC 2113 and DASC 2594 and student must be a DTSCBS major. (Typically offered: Spring)

## DASC 3213. Statistical Learning. 3 Hours.

Statistical Learning is a course providing an in depth look at the theory and practice of applied linear modeling for data science: including model building, selection, regularization, classification and prediction. Students will gain hands-on experience using statistical software to learn from data using applied linear models. Prerequisite: DASC 1104 and ((MATH 3013 and STAT 3003) or (INEG 2314 and INEG 2323)) and student must be a DTSCBS major. (Typically offered: Spring)

DASC 3223. Cyber Crime and Cyber Terrorism. 3 Hours.
Cyber Crime and Cyber Terrorism (CCCT) is an overview of the study of cybercrime and cyber terrorism for students of data science, criminology, and law discussing crimes committed via Internet, ranging from various white-collar financial crimes to the spread of viruses, malicious code, stalking, bullying, and web-based exploitation. Criminological, social-psychological explanations will be examined and the investigative and legal strategies employed to combat cyber-crime and cyber terrorism will be discussed. Prerequisite: DASC 2113 and must be a DTSCBS major. (Typically offered: Fall)

## DASC 390V. Special Topics in Data Science. 1-6 Hour.

Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Student must be a DTSCBS or DTSCFR major and by Permission Only. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

DASC 390VH. Honors Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Student must have honors standing, be a DTSCBS or DTSCFR major and by permission only. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 390V
DASC 400VH. Honors Thesis in Data Science. 1-3 Hour.
Honors Thesis in Data Science (DASC 400VH) is a course to develop an Honors Thesis in Data Science. The Honors Thesis can be an independent thesis or can be related to the Data Science Practicum I and II Courses Project. Prerequisite Student must be a DTSCBS major, have honors standing, and by Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## DASC 4113. Machine Learning. 3 Hours.

Machine learning covers: logistic regression, ensemble methods, support vector machines, kernel methods, neural networks, Bayesian inference, reinforcement learning, learning theory, and their applications in text, image, and web data processing. Students will gain hands-on experience of developing machine learning algorithms using Python and scikit-learn. Prerequisite: DASC 2103 and DASC 3203 and student must be a DTSCBS major. (Typically offered: Fall)

DASC 4113H. Honors Machine Learning. 3 Hours.
Machine learning covers: logistic regression, ensemble methods, support vector machines, kernel methods, neural networks, Bayesian inference, reinforcement learning, learning theory, and their applications in text, image, and web data processing. Students will gain hands-on experience of developing machine learning algorithms using Python and scikit-learn. Prerequisite: DASC 2103, DASC 3203, honors standing and student must be a DTSCBS major. (Typically offered: Fall) This course is equivalent to DASC 4113.

DASC 4123. Social Problems in Data Science and Analytics. 3 Hours.
This course explores the ways data analytics and data science are impacted by or intersect with issues of social justice, poverty and economic inequality, racial and ethnic relations, gender, crime, education, health and healthcare, and other contemporary social problems. Prerequisite: DASC 1222 and student must be a DTSCBS major. (Typically offered: Fall)

DASC 4533. Information Retrieval. 3 Hours.
Information Retrieval is a course providing expertise in processing unstructured data as a key component of data science. It covers text processing, file structures, ranking algorithms, query processing, and web search. Students will gain handson experience developing their own search engine from scratch, using Python, C, C++, or Java on a Linux server and making their search engine web accessible. Note: Prior user-level knowledge of Linux for file and directory management and remote login is required for this course. Corequisite: Lab component. Prerequisite: DASC 2103 and student must be a DTSCBS major. (Typically offered: Irregular)

DASC 4892. Data Science Practicum I. 2 Hours
Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the first semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve realworld problems. Prerequisite: DASC 2113, DASC 2213, DASC 3203, ((STAT 3013 and STAT 3003) or (INEG 2314 and INEG 2323)), and student must be a DTSCBS major. Pre- or Corequisite: DASC 3213, DASC 4113, and DASC 4123. (Typically offered: Fall)

## DASC 4892H. Honors Data Science Practicum I. 2 Hours.

Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the first semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve realworld problems. Prerequisite: DASC 2113, DASC 2213, DASC 3203, ((STAT 3013 and STAT 3003) or (INEG 2314 and INEG 2323)), honors standing and the student must be a DTSCBS major. Pre- or Corequisite: DASC 3213, DASC 4113, and DASC 4123. (Typically offered: Fall)
This course is equivalent to DASC 4892.
DASC 490V. Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Students must be a DTSCBS major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

## DASC 490VH. Honors Special Topics in Data Science. 1-6 Hour.

Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Honors standing and students must be a DTSCBS major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 490 V .
DASC 4993. Data Science Practicum II. 3 Hours.
Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the second semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve real-world problems. Corequisite: Lab component. Prerequisite: DASC 4892 with a grade of C or better and student must be a DTSCBS major. (Typically offered: Spring)

## DASC 4993H. Honors Data Science Practicum II. 3 Hours.

Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the second semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve real-world problems. Corequisite: Lab component. Prerequisite: DASC 4892 with a grade of $C$ or better, and student must be a DTSCBS major, and have honors standing. (Typically offered: Spring)
This course is equivalent to DASC 4993.

## English Language and Cultural Studies (ELAC)

Christa Hestekin
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English Language and Cultural Studies Website (https://elac.uark.edu/)
A unit of the Graduate School and International Education, the English Language and Cultural Studies program supports international graduate and undergraduate students as well as visiting and exchange students/ scholars by providing supplementary English language and culture courses. Program faculty support student success and assist students transition to the University of Arkansas.

## Courses

ELAC 000V. University Connections Intensive English. 1-9 Hour.
This class is part of the Intensive English Program designed for students who are in their first semester of the University Connections three-semester program. Not for degree credit. Prerequisite: Language assessment required. (Typically offered: Irregular)

## ELAC 0011. Writing Workshop: Grammar through Editing. 1 Hour.

This class is designed to assist upper-intermediate to advanced non-native speakers of English improve their academic writing at the sentence level. Students' writing is analyzed for grammatical accuracy; students develop strategies for editing their writing more independently and learn to produce clearer, more grammatically correct writing. Not for degree credit. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / TOEFL Alternative. (Typically offered: Fall and Spring)

ELAC 0103. University Connections Intensive English Level I. 3 Hours.
Students new to English will be introduced to the letters and sounds of the alphabet, fundamental grammar structures for conversation and writing, and essential vocabulary on themes (relevant to community, individual and academic entities), and cultural distinctions in the American university system. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

## ELAC 0203. University Connections Intensive English Level II. 3 Hours.

Based on placement or successful completion of Level I (ELAC 0103) coursework, emerging learners continue to develop reading-for-learning and writing-forcommunication strategies; extend vocabulary on themes relating to community, individual and academic development, and cultural distinctions of the United States; and focus on advancing grammar structures for conversation and writing. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

## ELAC 0303. University Connections Intensive English Level III. 3 Hours.

 Based on placement or successful completion of Level II (ELAC 0203) coursework, intermediate learners extend reading-for-learning and writing-for-communication strategies to more academic contexts; extend vocabulary and word form knowledge (on themes relating to community, individual and academic development, and cultural distinctions of the United States); and focus on applying advanced grammar structures to conversation and writing. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)ELAC 0403. University Connections Intensive English Level IV. 3 Hours. Based on placement or successful completion of Level III (ELAC 0303) coursework, intermediate learners continue to develop strategies for comprehension and communication in all language skills; to extend vocabulary to concepts related to social, environmental and global themes in academics; and to explore the cultural distinctions of the United States. Advancing grammar structures for conversation and writing extend to sophisticated forms of support and persuasion. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

## ELAC 0503. University Connections Intensive English Level V. 3 Hours.

Based on placement or successful completion of Level IV (ELAC 0403) coursework, this course incorporates critical thinking and processing skills for improved reading and listening comprehension, and accuracy and efficacy in writing and speaking. Vocabulary development advances with social, environmental and global themes.
Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)
ELAC 0603. University Connections Intensive English Level VI. 3 Hours. Following placement or successful completion of Level V (ELAC 0503) coursework, highly effective writing skills and reading comprehension are solidified and integrated intensely at this advanced level. Through extended reading, writing and presentation assignments, students improve their ability to recognize and deliver main ideas, distinguish and produce persuasive support, and respond to content in a range of contexts. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

ELAC 1023. Academic Writing Across Disciplines. 3 Hours.
The class is designed to improve the academic writing and critical thinking skills for non-native speakers of English in all fields. Through focused instruction and extensive practice, students will improve their academic lexicon, grammatical accuracy, discourse organization and fluency in formal academic writing. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / TOEFL Alternative. (Typically offered: Fall and Spring)

## ELAC 1033. English Language through Mass Media. 3 Hours.

Students expand their communicative language skills through the study of news and media. By analyzing the messages and methods used in a variety of sources, students improve their listening, speaking, reading and writing skills. Students develop critical thinking skills as they evaluate and synthesize ideas from the texts. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / TOEFL Alternative. (Typically offered: Fall and Spring)
ELAC 2012. English Phonology for Non-Native Speakers. 2 Hours. In this course students study the basic principles of phonetics and phonology of English in order to develop their ability to produce the standard American accents. Not for degree credit in the Fulbright College of Arts and Sciences. (Typically offered: Fall and Spring)

## ELAC 2023. Business English Communications. 3 Hours.

This is a course for non-native English speakers to develop their oral communication skills for professional business settings. From informal dialogues to formal business presentations, students learn appropriate verbal and non-verbal communication strategies and develop confidence to communicate effectively and comprehensibly. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / TOEFL Alternative. (Typically offered: Fall and Spring)

ELAC 2043. Seminar in United States Culture, Communication, and Institutions. 3 Hours.
Through an in-depth study of American life, culture, communicative style and institutions, non-native speakers of English improve their oral and written communication skills. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / GRE Analytical Writing / GMAT Analytical Writing / TOEFL Alternative. (Typically offered: Fall and Spring)

## ELAC 2053. Academic Presentations. 3 Hours.

For advanced non-native speakers of English to build skills and strategies for delivering effective, clear presentations in academic and professional settings. Students learn about organization, best use of visual aids, connecting with an audience, facilitating questions and answers, and intercultural issues that affect perception and comprehensibility. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: At the request of an instructor or through TOEFL (iBT) exam, spoken portion of the International English Language Testing System (IELTS), or the University of Arkansas Spoken Language Proficiency Test (SLPT). (Typically offered: Fall and Spring)

## Nanotechnology (NANO)

Matthew B. Leftwich
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## Nanotechnology Minor Faculty Coordinators and Curriculum Committee

- Gregory Salamo, Distinguished Professor, Physics
- Min Zou, Professor, Mechanical Engineering
- Jin-Woo Kim, Professor, Biological and Agricultural Engineering
- Raj Rao, Professor, Biological and Agricultural Engineering
- Karthik Nayani, Assistant Professor, Chemical Engineering
- Jingyi Chen, Professor, Chemistry and Biochemistry
- Fisher Yu, Professor, Electrical Engineering
- Steve Tung, Professor, Mechanical Engineering
- Po-Hao Adam Huang, Associate Professor, Mechanical Engineering
- Keisha Bishop Walters, Department Head and Professor, Chemical Engineering

The Nanotechnology minor is an interdisciplinary program that provides students with foundational knowledge and skills related to the emerging field of nanotechnology, including hands-on experience in several major areas of nanotechnology, such as synthesis of nanomaterials, nanoscale imaging, nanostructure assembly and manipulation, device and system integration, and performance evaluation. The Nanotechnology minor draws faculty expertise and coursework from the College of Engineering and the Fulbright College of Arts and Sciences and utilizes state-of-the-art equipment and facilities at the Institute for Nanoscience and Engineering. The Nanotechnology minor is intended to prepare participating students for a career in which nanotechnology is playing an increasingly important role, and increase students' research competitiveness for graduate studies. The Nanotechnology minor is designed to be accessible to students majoring in engineering, physics, or chemistry and biochemistry. It is open to all students who have the necessary prerequisites to enroll in the courses that constitute the minor.

## Requirements for the Nanotechnology Minor

Students wishing to participate in the Nanotechnology minor must declare participation formally. The students are required to meet with the faculty
coordinator of an individual department who will help the student to develop a list of courses suitable for the minor and a schedule for taking those courses. Examples of model programs for each participating department are given below.

Students need to take a total of 15 credit hours, which includes 6 credit hours of required courses and 9 credit hours of elective courses and must earn a grade of " C " or better for all courses used to fulfill the requirements of the Nanotechnology minor.

## Required Research Courses

Nanotechnology Research (Independent Study or Honors Thesis in
nanotechnology)
Students can choose from the following courses:
BENG 450V Special Problems
BENG 451VH Honors Thesis
BMEG 450VH Honors Thesis
BMEG 460V Individual Study
or BMEG 460Ydthors Individual Study
CHEG 488V Special Problems
CHEM 400V Chemistry Research
or CHEM 400Vdthors Chemistry Research
ELEG 488V Special Problems
MEEG 4903H Honors Mechanical Engineering Research
MEEG 492V Individual Study in Mechanical Engineering or MEEG 49:Honors Individual Study in Mechanical Engineering
PHYS 306V Projects
PHYS 399VH Honors
PHYS 498V Senior Thesis

## Elective Courses

A minimum of 9 hours of elective courses selected from the following: 9
BENG 3113 Measurement and Control for Biological Systems
or BENG 31 •Honors Measurement and Control for Biological Systems
BENG 3733 Transport Phenomena in Biological Systems
BENG 4743 Food and Bio-Product Systems Engineering
BENG 4123 Biosensors \& Bioinstrumentation
BENG 4743 Food and Bio-Product Systems Engineering
BMEG 3634 Biomaterials
BMEG 3824 Biomolecular Engineering
BMEG 4243 Advanced Biomaterials and Biocompatibility
BMEG 4873
CHEG 3713 Chemical Engineering Materials Technology
CHEG 5043 Colloid and Interface Science
CHEM 4123 Advanced Inorganic Chemistry I
CHEM 4213 Instrumental Analysis
CHEM 4283 Energy Conversion and Storage
CHEM 5443 Physical Chemistry of Materials
ELEG 4203 Semiconductor Devices
ELEG 4303 Introduction to Nanomaterials and Devices
MEEG 4303 Materials Laboratory
MEEG 4313 Introduction to Tribology
MEEG 5263 Introduction to Micro Electro Mechanical Systems
MEEG 5343 Computational Material Science

| PHYS 3213 | Electronics in Experimental Physics |
| :--- | :--- |
| PHYS 3613 | Modern Physics |
| PHYS 4073 | Introduction to Quantum Mechanics |
| PHYS 4213 | Physics of Devices |
| PHYS 4713 | Solid State Physics |
| PHYS 4773 | Introduction to Optical Properties of Materials |
| or from other appropriate courses not on this list if approved first <br> by the Nanotechnology Minor Curriculum Committee and by the <br> course instructor. |  |

Total Hours
Below are model programs for students from different participating departments. Students also have the flexibility to design their own programs according to the stated requirements above.

## Model program for a student majoring in

 Biological Engineering

Total Hours
Model program for a student majoring in Biomedical Engineering

| Required Courses (6 hours) |  |  |
| :--- | :--- | ---: |
| BMEG 450VH | Honors Thesis | $1-4$ |
| BMEG 460V | Individual Study | $1-3$ |
| or BMEG 460V冊Honors Individual Study |  |  |
| Elective Courses (9 hours) |  |  |
| BMEG 3634 | Biomaterials |  |
| BMEG 3824 | Biomolecular Engineering |  |
| BMEG 4243 | Advanced Biomaterials and Biocompatibility |  |

## Total Hours

Model program for a student majoring in Chemical Engineering

```
Required Courses (6 hours)
CHEG 488V Special Problems
Elective Courses (9 hours)
\begin{tabular}{ll} 
CHEG 3713 & Chemical Engineering Materials Technology \\
CHEG5043 & Colloid and Interface Science \\
CHEM 4213 & Instrumental Analysis
\end{tabular}
```

Total Hours

## Model program for a student majoring in Chemistry

Required Courses (6 hours)

| or CHEM 401Honors Chemistry Research |
| :--- |
| Elective Courses (9 hours) |
| CHEM 4123 |
| Advanced Inorganic Chemistry I |
| CHEM 4213 |
| Instrumental Analysis |
| CHEM 4283 | Energy Conversion and Storage $\quad 9$

Total Hours

## Model program for a student majoring in Electrical Engineering

| Required Courses (6 hours) | 6 |  |
| :--- | :--- | :--- |
| ELEG 488V | Special Problems |  |
| Elective Courses (9 hours) | $\mathbf{9}$ |  |
| PHYS 4213 | Physics of Devices |  |
| ELEG 4203 | Semiconductor Devices |  |
| ELEG 4303 | Introduction to Nanomaterials and Devices |  |

Total Hours ..... 15
Model program for a student majoring in Mechanical EngineeringMEEG 492V Individual Study in Mechanical Engineeringor MEEG 492VIHonors Individual Study in Mechanical Engineering
MEEG 4903H Honors Mechanical Engineering Research ..... 3
Elective Courses ..... 9
MEEG 4303 Materials Laboratory
MEEG 4313 Introduction to Tribology
MEEG 5263 Introduction to Micro Electro Mechanical Systems
Total Hours ..... 15
Model program for a student majoring in Physics
PHYS 306V Projects ..... 1-3
PHYS 498V Senior Thesis ..... 1-6
or PHYS 399VHonors
Elective Courses (9 hours) ..... 9
PHYS 4073 Introduction to Quantum Mechanics
PHYS 4713 Solid State Physics
PHYS 4773 Introduction to Optical Properties of Materials
Total Hours
15
Urban and Regional Planning (PLAN)

Noah Billig, Landscape Architecture
WALK 304
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## Requirements for Urban and Regional Planning Minor

A student who is interested in the Urban and Regional Planning minor should notify either the Departments of Landscape Architecture or Political Science and consult with their academic advisor. The minor consists of 18 hours of required and elective courses and subdivided into three
tiers: core courses, tier-one electives and tier-two electives. The minor's required and elective courses include:

## Required Core Courses:

| PLSC 4103 | Introduction to Urban Planning | 3 |
| :---: | :---: | :---: |
| LARC 5493 | Environmental Land Use Planning | 3 |
| Tier-One Electives |  | 6-12 |
| Select 6-12 hours from the following: |  |  |
| LARC-approved design studio focused on planning (may only count once) |  |  |
| LARC Advocacy Module focused on planning |  |  |
| ANTH 5113 | Anthropology of the City |  |
| PLSC 4173 | Community Development |  |
| PLSC 390V | Special Topics |  |
| HDFS 4603 | Environmental Sociology |  |
| GEOS 4073 | Urban Geography |  |
| PLSC 3253 | Urban Politics |  |
| LARC 4753 | Incremental Sprawl Repair |  |
| LARC 402V | Special Studies |  |
| SOCI 3153 | Urban Sociology |  |

Tier-Two Electives (up to six hours of electives may come from 0-6 the following options)

| LARC 4033 | Landscape Architecture Theory |
| :--- | :--- |
| GEOS 3043 | Sustaining Earth |
| GEOS 4393 | American Public Lands \& Policy |
| GEOS 4693 | Environmental Justice |
| LARC 5053 | Historic Landscape Preservation |
| ANTH 4443 | Cultural Resource Management I |
| ANTH 4603 |  |
| ENSC 3223 | Ecosystems Assessment |
| ENSC 3221L | Ecosystems Assessment Laboratory |
| ENSC 3933 | Environmental Ethics |
| ENSC 3413 | Principles of Environmental Economics |
| PLSC 4283 | Federalism and Intergovernmental Relations |
| ARCH 5493 | History of Urban Form |
| SCMT 3443 | DELIVER: Transportation and Distribution |

## Total Hours

## Dale Bumpers College of Agricultural, Food and Life Sciences

## Mission and Vision

The vision of the Dale Bumpers College of Agricultural, Food and Life Sciences is to lead Arkansas and the world by delivering pre-eminent programs in agricultural, food and life sciences that produce leaders through education, research and outreach.

The mission of the Dale Bumpers College of Agricultural, Food and Life Sciences is to improve the quality of life for Arkansans by preparing students for successful careers, conducting impactful research, promoting an inclusive and diverse culture, and sharing knowledge to promote viable
food and agricultural systems, sustainable environments, healthy families and vibrant communities.

## History and Organization

As the state's land-grant university, the University of Arkansas has the responsibility for leadership in teaching, research, and service in the agricultural and human environmental sciences. This responsibility is shared with the Division of Agriculture.

The Bumpers College is an integral component of the University of Arkansas and addresses the teaching responsibility of the land-grant university. Its roots lie in the First Morrill Act of 1862, which created the land-grant system by providing a grant of land to each state for the establishment of a college "where the leading objective shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanical arts in such manner as the legislatures of the state may prescribe to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Agricultural sciences have been taught at the University of Arkansas almost from the beginning of the institution in 1872. The university conferred the first degrees in agriculture in 1904.

Early instruction and outreach efforts focused on improving rural life for men, women, and children. Farm wives were interested in beautifying the home, food preparation and safety, and gardening. Foods and nutrition, bacteriology, chemistry, and other related subjects held a common scientific interest for both agriculture and home economics, so it naturally evolved that studies in home economics should develop within the realm of agricultural education. Domestic science classes were offered as early as 1909, and a department of home economics was established in 1913. The department was elevated to school status in 1994, and its name was changed to the School of Human Environmental Sciences.

The passage of the Hatch Act in 1887 and subsequent legislation made possible the Agricultural Experiment Station, the research component of the Division of Agriculture. Most faculty who teach in the Bumpers College also hold appointments in the Experiment Station and are able to incorporate active research into their teaching.

The dissemination of university research in agriculture and human environmental sciences is carried out by personnel in the Cooperative Extension Service, created by the Smith-Lever Act of 1914. Many Extension specialists also hold adjunct faculty status and bring their expertise to the teaching program.

It is this blending of teaching, research, and service functions that create a unique learning environment in the college. As students learn to relate basic areas of science to human needs, they study in laboratory-based classes and are taught in research facilities supported by the Division of Agriculture. Similarly, students are encouraged to intern with professionals in industry and governmental agencies, including the Cooperative Extension Service.

In recognition of the land-grant mission of the university and its commitment to serve the entire state, the Dale Bumpers College of Agricultural, Food and Life Sciences has worked cooperatively with numerous community colleges to facilitate the "seamless" transfer of students to the Bumpers College. Coordinated advising, recruiting, and curricula development are working goals of the Bumpers College and students interested in transferring while enrolled at a community college
should contact a member of the student services team in the Waldrip Student Center at 479-575-2252 or aflsdean@uark.edu.

## Facilities and Resources

The Dale Bumpers College of Agricultural, Food and Life Sciences is composed of nine academic departments and the School of Human Environmental Sciences. The college offers both undergraduate and graduate level degrees.

The Agricultural, Food and Life Sciences Building houses the Dean's Office, the Department of Agricultural Education, Communications and Technology, and the Department of Animal Science and serves as the headquarters for the college academic functions. There are six other buildings on campus operated by the college including the Agriculture Building, Human Environmental Sciences Building, Rosen Center, Plant Science Building, Agricultural Annex, and the Center of Excellence for Poultry Science. Additionally, the Don Tyson Center for Agricultural Sciences, the Food Science Building, Altheimer Laboratory, Abernathy Agriscience and Technology Center, the Crop Science Research Center, the Pauline Whitaker Animal Science Arena, and the Dorothy E. King Equine Science facilities are located at the Research and Extension Center north of the main campus. These serve as additional teaching laboratories or classroom facilities. Also, the Jean Tyson Child Development Study Center is managed by the college to provide instructional training for the child development program.

Most classrooms are equipped with "class capture" technology to allow students to view lectures online and to aid distance education courses. Students can receive academic assistance through resources provided by the Waldrip Student Center located in the Agriculture Building in room 205. Students can also seek assistance through the campus-wide Cordia Harrington Center for Excellence.

## College Scholarships

In addition to the scholarships awarded by the university, there are a number of scholarships available to students in agricultural and human environmental sciences made possible by generous gifts from many firms and individuals. To be considered for a college scholarship, students must first be admitted to the university. Most scholarships require students to be enrolled full-time, at least 12 credit hours per semester. A college scholarship application, which serves as an application to all available scholarships offered by the college and/or individual departments, must be submitted each year. For additional information, please see the Bumpers College Scholarship website (https:// bumperscollege.uark.edu/future-students/scholarships.php). Students may also explore outside scholarship options and should reference the University of Arkansas' Guide to Outside Scholarships for guidance. In addition, outside scholarship opportunities are shared with students by the college and some departments periodically through email and newsletter communications. For more information on scholarships, send questions to bumpschl@uark.edu.

## Student Organizations

Agricultural Business Club provides opportunities to socialize and fosters academic achievements. Students of all majors are welcome to join.

Agricultural Communicators of Tomorrow (ACT) allows members to gain professional and personal experiences in the agricultural communications industry. Members will have the opportunity to showcase their work within the chapter and at national conferences, create relationships with leaders in the profession, and work with college faculty
to strengthen their skill set in communications. Members will also have the chance to participate in fundraisers, chapter functions, and monthly meetings. Students from all majors are welcome to join.

Agricultural Systems and Technology Club is primarily for Ag Systems students, although it's open to all students who have an interest in technical types of things. The purpose of the club is to learn about opportunities for careers and internships, assist in Ag Systems activities, and have fun while doing so.

Association for American Textile Chemists and Colorists (AATCC) is an organization open to all students interested in the fashion industry.

Cattlemen's Association at the University of Arkansas is a professional and social club that focuses on the promotion, education, and advocacy of the cattle industry in Arkansas. All majors are welcome.

Collegiate 4-H provides leadership and service through the 4-H organization. Members will develop leadership and personal qualities while giving volunteer assistance to the Cooperative Extension Service (CES) in Arkansas, local 4-H clubs, the surrounding communities and within schools. This organization promotes positive learning while serving others, providing opportunities for educational fellowship and assisting with departmental community involvement. No previous 4-H experience is required to be a part of this organization. All majors welcome.

Collegiate FFA prepares members for leadership and cooperative roles in their professional careers; open to all majors.

Collegiate Farm Bureau is an opportunity for students to serve as ambassadors for agriculture. The $U$ of $A$ chapter members serve as the voice of agriculture on campus and in surrounding Fayetteville by promoting agriculture through professional networking, civic engagement, and community service. Students of all majors are welcome to join.

Crop, Soil and Environmental Science Club promotes stewardship of soil, water, and vegetation and sponsors projects and hands-on activities in a "living laboratory" setting to strengthen academic learning.

Food Science Club is comprised primarily of food science undergraduate and graduate students, but it is open to all students across campus.

Horticulture Club is for those interested in horticulture including floriculture, ornamentals, turf, small fruits and vegetables.

Isely-Baerg Entomology Club is open to those who wish to stimulate interest in the field of entomology, perform outreach programs for the public and to promote and encourage professional exchange of ideas in the field of entomology.

## Minorities in Agriculture, Natural Resources Related Sciences

 (MANRRS) promotes and implements initiatives that foster inclusion and advancement of members of ethnic/cultural groups under-represented in the agricultural and natural sciences and related fields in all phases of career preparation and participation.Block and Bridle Club is for students who are interested in any phase of animal science. Students with interests in horses, cattle, sheep, dogs, cats, or swine will find this club a good place to become involved.

Phi Upsilon Omicron is the professional honor society for human environmental sciences students. To be eligible for invitation to membership, a student must rank in the upper 35 percent of the class and be recognized for character and leadership.

Plant Pathology Graduate Student Association (PPGSA) is open to graduate students interested in plant pathology or related fields.

Poultry Science Club is open to all students interested in any phase of the poultry industry or related fields.

Poultry Science Graduate Student Association is open to all graduate students interested in any phase of the poultry industry or related fields.

Pre-Vet Club is for students interested in veterinary medicine and is especially designed for those students in the pre-veterinary medicine curriculum.

Professional Convention Managers Association provides students an opportunity to network with fellow event-passionate students, gain valuable education and experience, and participate in the planning, coordination and execution of events.

Student Dietetic Association (SDA) is open to any student interested in the field of dietetics. Activities are designed to inform members of the field of dietetics and to spread information to the public. Membership provides an excellent opportunity to interact with dietetics professionals and a change to work with the community.

Turf Club is a student organization open to all students interested in turfgrass management.

There are also numerous general organizations on the university campus, and students of the Dale Bumpers College of Agricultural, Food and Life Sciences participate in most of them. These include fraternities, sororities, honor and scholarship organizations, religious and music groups, sports organizations, and others.

Alpha Tau Alpha is a national honorary professional fraternity for those preparing to become teachers of agricultural education. Its mission is to develop a true professional spirit in the teaching of agriculture, to help train teachers of agriculture who shall be leaders in their communities, and to foster a fraternal spirit among students in teacher training in agricultural education.

Gamma Sigma Delta is the honor fraternity for graduating seniors, graduate students, faculty, and alumni of the Dale Bumpers College of Agricultural, Food and Life Sciences. Seniors must rank in the upper 25 percent of their class to be eligible for membership, but not more than 15 percent of the class may be elected for membership. The highest-ranking sophomore and the highest-ranking senior are recognized annually by the society.

## Academic Advising

Bumpers College advising mission is to enhance the educational experience and maximize opportunities for students. Therefore, we are committed to a strong, effective academic advising program. Advising plays a significant role in the developmental process of educating students for lifelong learning. The advising relationship is a partnership between student and advisor and is dependent on effective communication and regular contact. This partnership has shared responsibilities which culminate in student.

## Selection of a Major

A student who elects to major in some area of study in the college should plan the program with a Bumpers College adviser. While exploring students are welcome, early selection of a major will permit better planning and proper sequencing of courses. The student and Bumpers College adviser work closely to ensure that curriculum requirements are
met in a timely fashion. A student uncertain about a major will be advised as an exploring major (EXPL) through the Bumpers College Student Services Office located in the Waldrip Student Center office (AGRI 205).

## Degrees Offered

All entering students (including freshmen, international and transfer students) admitted to the University of Arkansas, Fayetteville, are eligible to pursue a degree program in the Dale Bumpers College of Agricultural, Food and Life Sciences. Undergraduate degrees offered are as follows:

- The Bachelor of Science in Agricultural, Food and Life Sciences (B.S.A.)
- The Bachelor of Science in Human Environmental Sciences (B.S.H.E.S.)


## Graduate Studies

The Graduate School of the university, in cooperation with the Dale Bumpers College of Agricultural, Food and Life Sciences, offers the Master of Science degree in each of its nine departments and in the School of Human Environmental Sciences, and an interdisciplinary Master of Science degree across three departments. Five doctoral degrees across the College and in addition, two interdisciplinary doctoral degrees. More detailed information regarding individual programs may be obtained by contacting the administrative office of each department, or by consulting the Graduate School Catalog.

## Accreditations

The degree program in nutrition is accredited by the Accreditation Council for Education in Nutrition and Dietetics of the Academy of Nutrition and Dietetics. The Jean Tyson Child Development Study Center is accredited by the National Association for the Education of Young Children (NAEYC). The Bachelor of Science in Agricultural, Food and Life Sciences (B.S.A.) in food science is accredited by the Institute of Food Technologists. Teacher education programs in agriculture and family and consumer sciences are coordinated with educational programs in the College of Education and Health Professions and are accredited by the National Council for Accreditation of Teacher Education (NCATE).

## Study Abroad

An educational experience outside the U.S. has become an integral component for today's student in higher education. The ability to compete and perform in the global arena requires an understanding of world cultures, economic systems, religions, trends, governments and politics. Students in the Bumpers College are encouraged to engage in study abroad that will lead to life-long partnerships, cultural awareness and understanding of the global dimensions of their majors. The college years provide the best opportunity for students to gain this understanding and experience through faculty-led study tours; summer, semester or yearlong study abroad; and international internships or research experiences which closely relate to their career goals.

The mission of the International Programs Office is to provide structured international experiences that enhance the marketability of students for career and academic opportunities through faculty driven, sustainable initiatives. The office serves to support faculty, students, international partners, and university leadership to increase opportunities for students to engage in faculty-led programs, internships, exchange programs, and study abroad activities that include research. The International Programs Office works closely with the UA Study Abroad Office and seeks opportunities for students to engage in international career preparation and workforce ready development. In 2022-2023, the International

Programs Office provided $\$ 29,000$ to support students and faculty, and 120 Bumpers College students are scheduled to study abroad. For more information, visit our website at bumpersinternational.uark.edu (http:// bumpersinternational.uark.edu).

Graduate opportunities are available for study in agricultural economics, agribusiness and related subjects via the UA's TransAtlantic Master of Science program at Ghent University, Belgium. Second language capability is helpful, but not required.

Bumpers College students interested in a study abroad program or internships with full-time status usually can maintain their scholarships while abroad. Limited funding is available for travel grants through Bumpers and Honors colleges.

## College Admission Requirements

All students seeking admission to the Dale Bumpers College of Agricultural, Food and Life Sciences must meet the general requirements for admission to the university. Students transferring from other colleges at the University of Arkansas or from other institutions are expected to meet the same entrance standard.

## College Academic Requirements

## All students must satisfy the following

 university graduation requirements1. Complete a minimum of 120 semester hours.
2. Fulfill State Minimum Core of 35 hours. Go to the State Minimum Core page ( p .81 ) for a list of courses that meet the requirements. Check requirements for each major as some majors require specific core courses as prerequisites to upper level courses.
3. Earn a grade-point average of 2.00 ("C" average) on all work attempted at the University of Arkansas.
4. All students must meet the university enrollment requirements found on the Academic Regulations (p. 86) page.

## Specific Degree Requirements

1. To fulfill the residency requirements of the degree of Bachelor of Science in Agricultural, Food and Life Sciences, students must complete a minimum of 40 hours of courses at the 3000-level or above. In addition, a minimum of 9 hours of broadening electives (Bumpers College courses taken outside the departmental code) must be completed.
2. To fulfill the residency requirements of the degree of Bachelor of Science in Human Environmental Sciences, students must complete a minimum of 40 hours within the School of Human Environmental Sciences at the University of Arkansas.
3. In addition to university requirements students must meet other defined degree requirements specific to each major and concentration. Bumpers College courses outside of the major may be included in degree requirements.
4. General electives will vary by major. Electives may be selected to meet the requirements for a minor; however, all elective credits are subject to approval of the academic adviser.

## Rules Applying to Course Work Used for Degree Credit

1. No credit will be given for duplicate coursework.
2. A maximum of six hours of internship and six hours of special problems may be counted for degree credit.
3. A total of six semester hours of elective credits in university band, chorus, judging teams, drama, debate, physical education, etc., may be counted toward a degree.
4. All transfer course work to be applied toward the degree must be an approved course listed in the transfer equivalency guide maintained by the Registrar's office. For courses not listed in the guide, petitions can be submitted to the Registrar's office by the student and his or her academic adviser.
5. All study abroad courses must be approved in advance in the student's academic department and by the Study Abroad Office if the credits earned in the courses are to be applied toward a degree.
6. Former students of the college who are readmitted after an absence of one year may be expected to meet the curriculum requirements in effect at the time of their readmission. Students should consult their academic adviser for degree planning before registering for classes.
7. Students interested in earning an additional bachelor's degree should refer to the university requirements (p. 86).

## Honors and Scholars

After the end of each semester, all colleges and schools in the university publish an honor roll of the names of the undergraduate students who achieve a 3.75 to 4.00 grade-point average. Students are eligible for the honor roll if they are carrying at least 12 semester hours normally required for graduation by their college for their respective year. This honor roll is the Dean's List.

In addition, a Chancellor's List is published each semester to recognize those undergraduate students who achieve a 4.00 grade-point average. Students must also be carrying at least 12 semester hours normally required for graduation to be eligible for the chancellor's list.

## Requirements to Graduate with Honors

Students who have demonstrated exceptional academic performance in baccalaureate degree while completing the Honors Program in the Bumpers College will be recognized at graduation by the honors designations of cum laude, magna cum laude, or summa cum laude. To earn such designation, students must meet the following criteria:

1. Must have completed at least one-half of his or her degree work at the University of Arkansas.
2. Must have at least a 3.5 GPA on University of Arkansas course work, computed at graduation.
3. Must successfully complete the Bumpers College Honors Program, which includes a minimum of 9 hours of honors course work, 6 hours of honors thesis, and a completed honors capstone research or creative project culminating in a written thesis documenting the project.
4. For cum laude, the student must achieve a cumulative $U$ of $A$ GPA of 3.5 to 3.74 .
5. For magna cum laude, the student must achieve a cumulative $U$ of $A$ GPA of 3.75 to 3.89 .
6. For summa cum laude, the student must achieve a cumulative $U$ of $A$ GPA of 3.9 to 4.00 .

These criteria may be evaluated and changed periodically by the College of Agricultural, Food and Life Sciences.

## Requirements to Graduate with Distinction

Students who have not completed the Bumpers College Honors Program, but have demonstrated excellent academic performance in baccalaureate degree programs in the Bumpers College will be recognized at graduation
by the designation of "with distinction," "with high distinction," and "with highest distinction." To earn this designation, students must meet the following criteria:

1. Must have completed at least one-half of his or her degree work at the University of Arkansas.
2. Must have at least a 3.5 GPA on University of Arkansas course work, computed at graduation.
3. For "with distinction," the student must achieve a cumulative $U$ of $A$ GPA of 3.5 to 3.74 .
4. For "with high distinction," the student must achieve a cumulative $U$ of A GPA of 3.75 to 3.89 .
5. For "with highest distinction," the student must achieve a cumulative $U$ of A GPA of 3.9 to 4.00 .

These criteria may be evaluated and changed periodically by the College of Agricultural, Food and Life Sciences.

## Grading System

The Dale Bumpers College of Agricultural, Food and Life Sciences assigns numerical values to the different grades. These values are used for courses when grade-point averages are calculated.

The grading system assigns values as follows:

| Grade | Value |
| :--- | :--- |
| A | 4.00 |
| B | 3.00 |
| C | 2.00 |
| D | 1.00 |
| F | 0.00 |

Office of the Dean of the College
E-219 Agricultural, Food and Life Sciences Building, 479-575-2252

## Interim Dean

Jean-Francois Meullenet

## Associate Dean

Lona Robertson
Assistant Dean for Honors \& International Programs
Lisa Wood
Director of Student Records
Kaaron "Jody" Davis
Director of Curriculum Management and Distance Education
Vicky Watkins

## Director of Employer Relations

TBA

## Senior Advisor-Student Experience Coordinator

Lucas Simmons
Coordinator of Undergraduate Student Recruitment TBA

Project Specialist for Scholarships, Development and External

## Relations

Becky Alverson

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## Majors, Concentrations, and Minors <br> Agricultural, Food and Life Sciences

## B.S.A. Degree

## Majors and Concentrations

- Agricultural Business (p. 131) (AGBS)
- Agricultural Business Management and Marketing (ABMM)
- Agricultural Economics (AGEC)
- Pre-Law (PRLW)
- Agricultural Education, Communication and Technology (p. 144) (AECT)
- Agricultural Communications (ACOM)
- Agricultural Education (AGED)
- Agricultural Leadership (AGLE)
- Agricultural Systems Technology Management (ASTM)
- Animal Science (p. 158) (ANSC)
- Animal Enterprise (ANET)
- Equine Systems (EQSC)
- Pre-Professional Science (PPRF)
- Crop Science (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/ cropmanagementcpmg/) (CPSC)
- Environmental, Soil, and Water Science (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/ environmentalsoilandwaterscienceesws/) (ESWS)
- Food Science (p. 180) (FDSC)
- Food Science (FDSC)
- Food Technology (FDTN)
- Food and Culinary Sciences (FDCU)
- Horticulture, Landscape and Turf Sciences (p. 189) (HLTS)
- Poultry Science (p. 195) (POSC)


## Minors Offered

- Agricultural Business (p. 141) (AGBS-M)
- Agricultural Communications (p. 154) (ACOM-M)
- Agricultural Education (p. 154) (AGED-M)
- Agricultural Leadership (p. 154) (AGLE-M)
- Agricultural Systems Technology Management (p. 155) (ASTM-M)
- Animal Science (p. 166) (ANSC-M)
- Crop Biotechnology (p. 175) (CPBT-M)
- Crop Science (p. 175) (CPSC-M)
- Entomology (p. 178) (ENTO-M)
- Equine Science (p. 166) (EQSC-M)
- Food Science (p. 186) (FDSC-M)
- Horticulture (p. 192) (HORT-M)
- International Economic Development (p. 142) (INDV-M)
- Landscape Horticulture (p. 192) (LHRT-M)
- Natural Resources Management (p. 192) (NRMT-M)
- Pest Management (p. ) (PMGT-M)
- Plant Pathology (p. 178) (PLPA-M)
- Poultry Science (p. 199) (POSC-M)
- Soil Science (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/ environmentalsoilandwaterscienceesws/\#soilsciencetext) (SOIL-M)
- Turf Management (p. 192) (TURF-M)


## Undergraduate Certificates and Microcertificates

- Brewing Science (p. 187) (BREWCP)
- Equine Management (p. 166) (EQMGUM)
- Excellence in Poultry Science (p. 200) (POSCAC)


## School of Human Environmental Sciences

## B.S.H.E.S. Degree

## Majors and Concentrations

- Apparel Merchandising and Product Development (p. 212) (AMPD)
- Birth Through Kindergarten (p. 218) (BRKD)
- Food, Nutrition and Health (p. 221) (FNAH)
- Hospitality Management (p. 225) (HOSP)
- Human Development and Family Sciences (p. 227) (HDFS)
- Human Nutrition and Dietetics (p. 234) (HNAD)


## Minors Offered

- Apparel Merchandising and Product Development Global Experience (p. 215) (AMPD)
- Child Services (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/childservices/) (CDSV-M)
- Event Management (p. 225) (EVMG-M)
- Hospitality Management (p. 225) (HOSP-M)
- Human Development and Family Sciences (p. 227) (HDFS-M)
- Human Nutrition (p. 221) (NUTR-M)


## Minors in Other Colleges

Students in the Dale Bumpers College of Agricultural, Food and Life Sciences may pursue an academic minor in any other college at the University of Arkansas. These minors usually consist of 15 to 20 hours of course work. For requirements regarding minors, check the catalog under the department offering the minor. Students must notify the Bumpers College Dean's Office (AFLS E202) of their intention to pursue a minor.

## Special (Non-Degree Seeking) Students

While most students enrolled in the Dale Bumpers College of Agricultural, Food and Life Sciences work toward a degree, students who desire additional education of a specific nature but who do not wish to fulfill all requirements for a degree may enroll as special students. It is recommended that students declare a minor by the end of their sophomore year.

## Other Programs

## Pre-veterinary Medicine

Because Arkansas does not have a college of veterinary medicine, the Arkansas General Assembly has authorized funds for education in veterinary medicine at out-of-state institutions. The State Board of Higher

Education is the designated agent for the State of Arkansas, and the Student Loan Authority is authorized to administer the program. Terms and conditions prescribed by the Student Loan Authority are as follows: the grant will cover only out-of-state tuition, and the student will pay his or her own fees and expenses. Additional information regarding this program can be found at: www.adhe.edu (http://www.adhe.edu/)

Contracts have been negotiated with the Board of Control for Southern Regional Education for education in veterinary medicine at Louisiana State University and at Tuskegee University. Arrangements have also been made with the University of Missouri and Oklahoma State University. Under the provisions of the legislation, only citizens of Arkansas are eligible. They must enroll in and complete the pre-veterinary medicine curriculum to satisfy the admission requirements of these colleges of veterinary medicine.

Arkansas Act 881, passed in 2011, established a loan repayment program for Arkansas residents who attend Mississippi State University College of Veterinary Medicine. The loan repayment program will assist Arkansas residents with the repayment of federally funded student loans incurred while attending veterinary school at Mississippi State University. Beginning in April 2012, participants in the program will be required to practice in the state of Arkansas for up to five consecutive years with a minimum of 30 percent of their practice devoted to food or mixed animal medicine in rural areas of Arkansas. This may include corporate or private veterinary practice.

The pre-veterinary medicine program at the University of Arkansas is administered in the departments of Animal Science and Poultry Science of the Dale Bumpers College of Agricultural, Food and Life Sciences. There are faculty in these departments who help counsel and advise students regarding their pre-veterinary medicine program. There are also faculty veterinarians who provide some insight into the practice of veterinary medicine and are knowledgeable about many of the considerations encountered in establishing a practice upon graduation. Some of these veterinarians have been in private practice; others have been involved in full-time agricultural research since graduation from veterinary medicine and graduate school. Because there is a wide cross-section of experience among these faculty, students find their counsel valuable in planning a future in veterinary medicine.

While it is possible to complete requirements for admission to some colleges of veterinary medicine in two years, most students take three years or more to complete the requirements, and most complete a B.S. degree before being admitted. Students who carefully plan their work may complete a B.S. degree by transferring hours earned in the first two years at an accredited college of veterinary medicine back to the University of Arkansas, provided they complete certain degree requirements at the university prior to entering a school or college of veterinary medicine. These students must complete a minimum of 94 hours of a 120-hour program of prescribed courses. This will require three years and one or two 6 -week summer terms for most students. Therefore, students should inform their advisers early in their program that they wish to be in a prevet degree program.

The Bumpers College of Agricultural, Food and Life Sciences is ready to assist students in fulfilling their pre-veterinary medicine requirements whether they desire to complete them in a two-year span or over three or four years. The supporting departments at the university, including chemistry, English, and biological sciences, all offer quality courses that give a student an excellent background for the pursuit of a degree in veterinary medicine.

To earn the professional degree, a student must complete the preveterinary medicine requirements and the four-year prescribed curriculum in one of the colleges of veterinary medicine.

Required Examinations: All required examinations are given on campus and administered by testing services ( 97 N . Razorback Road, phone: 479-575-3948, email: testing@uark.edu). Exams must be taken by late summer of the year prior to entering vet school. Students interested in taking examinations should contact testing services to schedule an examination date. All contract schools accept the Graduate Records Exam (GRE), which is given frequently.

Applications: Students applying to Louisiana State University, Oklahoma State University, Tuskegee University, Mississippi State University and University of Missouri must fill out a Veterinary Medical College Application Service (VMCAS) form, available at their online site (www.aavmc.org (http://www.aavmc.org)). Students must complete the application and have it submitted by September 15th of the year prior to beginning studies. Since requirements for the various veterinary schools periodically change, it is important that students check with their advisers about specific school requirements as they progress through the preveterinary requirements.

All students should contact the Coordinator of Veterinary Medicine, Dale Bumpers College of Agricultural, Food, and Life Sciences, AFLS B114, University of Arkansas, Fayetteville, AR 72701, phone 479-575-4351 in the spring prior to making fall application for admission to a veterinary school to verify that they can complete the requirements for the school they wish to attend. Pre-professional requirements and specific requirements for admission to colleges of veterinary medicine at Louisiana State University, Oklahoma State University, University of Missouri, Mississippi State University and Tuskegee University are listed with information on the Web at www.aavmc.org.

## Bumpers College Honors Program

The mission of Bumpers College Honors Program is to provide students with opportunities to participate in academic, research and creative activities beyond the traditional undergraduate experience. This is accomplished through honors courses, completion of an undergraduate honors thesis, and other significant activities. Students must maintain a GPA of 3.50 and subscribe to the Statement of Ethical Standards to remain in the program.

## Statement of Ethical Standards:

"As a member of the Bumpers College Honors Program, I pledge to uphold the ethical standards of honesty and trustworthiness in all academic and research/creative activities. I recognize that it is a privilege to be a member of the University of Arkansas Honors College and will dedicate my efforts to ensure that the highest levels of ethical standards are maintained."

## Student Eligibility Requirements

There are several avenues by which qualified candidates can become eligible to participate in the Bumpers College Honors Program. Students will receive an invitation to participate in the Honors Program if they are incoming freshmen with an ACT of at least 28 or a high school GPA of at least 3.50. Transfer students will be invited if they transfer no more than 62 hours with a college GPA of at least 3.50 . Currently enrolled freshman and sophomore students who have completed less than 62 hours with a college GPA of 3.50 or greater may apply for admission to the Honors Program through the Honors College website (http://
honorscollege.uark.edu/). Students wishing to join the Honors Program after completing 62 hours of college credit may petition for admission by submitting a plan of study to the Bumpers College Honors Program Director documenting how they propose to incorporate the Honors Program requirements into their remaining degree requirements.

To be eligible for continued participation in the Honors Program, students must maintain a cumulative 3.5 GPA and actively work toward earning an Honors degree designation. Students will be considered academically ineligible when:

- A student's cumulative GPA is below 3.5 for two consecutive terms or
- A student's cumulative GPA is below 3.0 for one term.

Students are required to prepare a proposal for study and identify an honors mentor who mutually agrees to the topic proposed by the end of 90 hours of course credit completion.

## Honors Orientation

All entering freshman honors students are required to complete AFLS 1023H. This course will cover the requirements of UNIV 1001 and provides an overview of the Bumpers College Honors Program, program requirements, research and creative project requirements, and to introduce all honors students to potential undergraduate student mentors as a part of the Honors Mentor/Mentee program.

## Honors Curriculum

Graduation with Honors Distinction from the College requires that each student must complete 15 credit hours. Each student must complete at least 9 credit hours of Honors courses, three of which must include AFLS 3413H. In addition, each student must complete at least 3 credit hours of thesis hours with a faculty mentor on the student's honors committee and thesis culminating their program. In addition to honors courses taken within Bumpers College, students are also encouraged to take Honors courses in other colleges as well.

Students are encouraged to complete 6 credit hours of Honors courses during their freshman year. This will qualify students for research and international program funding from the Honors College.

## Honors Project

All honor students are required to develop and complete an honors thesis or creative project appropriate for their degree and interests to graduate from the Honors Program. Traditional research projects, such as laboratory and field studies and surveys are encouraged and welcomed in addition to novel methods of research that may be accomplished at sites other than on campus or on research stations. Creative projects are also allowed with the approval of the student's Honors Committee and a final written document is required. The thesis or creative project should consist of at least one semester of proposal preparation, one semester of data collection or creative design, and one semester of thesis preparation. Honors students are encouraged to develop proposals for funding of their projects, as well as to conduct and present their results.

The student's Honors Mentor and Honors Committee prior to graduation from the Honors Program will approve the honors thesis or creative project. Upon approval and graduation, an original copy of the honors document will be submitted to the University Library. Publication of the thesis in an appropriate venue is encouraged. Creative and research thesis project guidelines are available on the Bumpers College Honors Program website (http://bumpershonors.uark.edu/).

To support their research or creative projects, participants in the Honors Program are eligible to apply for undergraduate research grants from the Arkansas Student Undergraduate Research Fellowships (SURF) program awarded by the state, the University Honors College, and from the Bumpers College. The results of the student's original research or creative project can be published in Discovery, the undergraduate research journal of the Bumpers College or Inquiry: The University Journal of Undergraduate Research and Creative Activity. Honors students can also apply to the Honors College for Study Abroad and conference grants and to the Bumpers College Study Abroad program. Students who have fulfilled the requirements of the Bumpers College Honors Program will be recognized as graduating with Honors Program Distinction. The transcript and diploma will designate the student as an honors program graduate of the college. At the college commencement ceremony, each honors graduate will wear special regalia, have the title of his or her honors thesis and mentor's name listed in the graduation program, and be recognized separately as part of the Bumpers College Honors Program graduates.

## Honors Graduation

Honors students enrolled in the Honors Program will be expected to perform at very high levels of achievement, earning credentials beyond the classroom experiences. Therefore, they will be eligible for several privileges during commencement not accorded to other students in the College.

Bumpers College honors students will graduate as members of the Honors Program at the College Commencement each spring. Separate regalia consisting of appropriate honors hood, stole, braid, tassel, and/ or mortarboard will distinguish all students in the Honors Program. Students graduating from the Honors Program will be further distinguished from students receiving traditional College and University recognition of scholastic achievement (distinction, high distinction, or highest distinction) by graduating cum Laude with Honors Distinction, Magna cum Laude with Honors Distinction, or Summa cum Laude with Honors Distinction if cumulative grade point averages of 3.5 to $3.74,3.75$ to 3.89 , or above 3.9 are maintained, respectively.

Incentives for student participation in the Honors Program include:

- Transcripts of honors students will specify that they are graduates of the College Honors Program.
- Honors students may request project support by applying for a grant from Bumpers College Undergraduate Research and Creative Project Grant Program.
- Honors students have the benefit of working one-on-one with faculty members on research or creative projects.
- Honors students will be eligible to apply for competitive scholarships supporting undergraduate honors studies or research (i.e., SURF grants).
- Honors students will receive all other rights and privileges as outlined in the Honors College benefits.


## Courses

## AFLS 1023H. Bumpers College Honors Program Perspectives. 3 Hours.

This course is intended to meet the requirements of UNIV 1001 and provide Bumpers College Honors students with an overview of the Honors Program as well as provide insight into research and creative project development and expectations. Pre- or Corequisite: Honors standing. (Typically offered: Fall)

## AFLS 1600. Undergraduate Research Assistant. 0 Hours.

Undergraduate research. (Typically offered: Fall, Spring and Summer)

AFLS 2600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
AFLS 3413H. Honors Proposal Development and Research Methods. 3 Hours. This course will include creative process, ethics, proposal writing, literature review, qualitative and quantitative/experimental design, scientific theory and methods, data collection, and analysis. At the end if this course, students will have developed a proposal for their Honors thesis. The course also offers an opportunity for students to present their proposals orally as preparation for their proposal meeting. Prerequisite: Sophomore, junior or senior standing. (Typically offered: Fall and Spring)
AFLS 3600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
AFLS 3993. Professional Growth and Critical Career Skills. 3 Hours. The MERIT Profile will be utilized to identify students behavioral and character profiles so they may "know themselves" based upon strengths and tendencies. Throughout the term, students will be engaged in topics to help them identify their core values and strengths and develop their weaknesses. Course topics will include; adjusting to mistakes, cast off the negatives, verifying your values, scheduling priorities, building character, framing decisions/choices, personal improvement plans, and more. Upon course completion students should be able to utilize personal leadership approaches, strategic thinking and behavior, critical thinking and problem identification techniques and verbal and written communication to effectively convey their suitability specific feasible careers. Prerequisite: Junior standing. (Typically offered: Fall)

## AFLS 400VH. Honors Thesis. 1-6 Hour.

(Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## AFLS 401V. Special Topics in AFLS. 1-6 Hour.

Studies of selected topics not covered in other courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
AFLS 401VH. Honors Special Topics. 1-6 Hour.
Studies of selected topics not covered in other courses. Must be in the Honors program to register for this course. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to AFLS 401V.
AFLS 403V. Special Problems. 1-6 Hour.
Individual study or research for advanced undergraduates. Corequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
AFLS 403VH. Honors Special Problems. 1-6 Hour.
Individual study or research for advanced undergraduates. Corequisite: Instructor consent and honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to AFLS 403V.
AFLS 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

## Agricultural Economics and Agribusiness (AEAB)

John D Anderson<br>Department Head<br>217 Agriculture Building<br>479-575-2256

Department of Agricultural Economics and Agribusiness Website (http:// agribus.uark.edu/)

The Department of Agricultural Economics and Agribusiness offers a major with three concentrations that lead to a Bachelor of Science in Agriculture degree. The department also offers a minor in Agricultural Business and a minor in International Economic Development. The minor in Agricultural Business can be completed $100 \%$ online.

The agricultural business major provides education suited to career opportunities in farm management, agricultural business management, and agricultural marketing in both the domestic and international areas.

Managers of farms and agricultural businesses are continually required to make organizational and operational decisions. The basic skills and knowledge needed for making sound decisions are provided by the agricultural business curriculum. Students may elect to specialize in areas compatible with their personal objectives, depending on the extent of accounting and business orientation desired.

Students educated in agricultural business are in demand for positions in agricultural industries, farm operation, marketing agencies, agricultural service organizations, state and federal agencies, and numerous other positions. For those who go on to graduate school, teaching and research positions are available with land-grant colleges as well as with other institutions. Three concentrations are available to meet career objectives:

1. Agricultural Business Management and Marketing (ABMM)
2. Pre-Law, for students preparing to attend law school (PRLW)
3. Agricultural Economics, which emphasizes quantitative and analytical skills to prepare students for graduate school (AGEC).

## Requirements for B.S.A. in Agricultural Business with Agricultural Economics Concentration

## Requirements for a Major in Agricultural Business

State minimum core (p. 81) and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)

## University Requirements

UNIV 1001 University Perspectives $\quad 1$

Communications
Select English State Minimum Core Courses (6 hours unless exempt)
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) ${ }^{1}$

Select one of the following:
ACOM 3143 Communicating Agriculture to the Public
AGED 4003 Issues in Agriculture
ACOM 4343 Communication Campaigns in Agriculture
COMM 2303 Advanced Public Speaking
COMM 2323 Interpersonal Communication
COMM 2343 Introduction to Small-Group Communication
COMM 3383 Persuasion
CSES 3023 Crop, Soil, and Environmental Sciences Colloquium
ENGL 2003 Advanced Composition
ENGL 2013 Essay Writing
ENGL 3053 Technical and Professional Writing (ACTS Equivalency = ENGL 2023)
U.S. History or Government ..... 3
Select U.S. History or Government State Minimum Core Course Science ..... 8
Select 2 Courses from Science State Minimum Core (8 total hours)
Fine Arts and Humanities ..... 6-7
Select Fine Arts and Humanities State Minimum Core Courses
Social Sciences (3 hours) ..... 3Select one of the following:
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)
SOCI 2013 General Sociology (ACTS Equivalency = SOCI1013)
HDFS 2603 Rural Families and Communities
AEAB Requirements
Agribusiness Prerequisite Core ( 21 hours) ${ }^{2}$ ..... 21
MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) (or higher MATH course from the University Core excluding MATH 2183) ${ }^{3}$
AGEC 2403 Quantitative Tools for Agribusiness
or STAT 230Principles of Statistics (ACTS Equivalency $=$ MATH2103)
or BUSI 103:Data Analysis and Interpretation
AGEC 1103 Principles of Agricultural Microeconomics ${ }^{4}$or ECON 202Finciples of Microeconomics (ACTS Equivalency= ECON 2203)
AGEC 2103 Principles of Agricultural Macroeconomics ${ }^{4}$or ECON 20 Principles of Macroeconomics (ACTS Equivalency= ECON 2103)
AGEC 2143 Agribusiness Financial Recordsor ACCT 201Rccounting Principles
AGEC 2303 Introduction to Agribusiness
ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers or ISYS 112Business Application Knowledge - Computer Competency
Agribusiness Core (27 hours) ..... 27
AGEC 3303 Food and Agricultural Marketing
AGEC 3373 Futures and Options Markets
AGEC 3403 Farm Business Management
AGEC 3503 Agricultural Law I
AGEC 4143 Agricultural Finance
Choose 12 hours from MATH, STAT, AGEC or courses in WCOBor the Bumpers College.
Concentration Requirements ..... 18
Capstone Experience ..... 1-3
AGEC 401V Internship in Agribusiness
AGEC 4041 Agribusiness Capstone
General Electives ..... 18-20
Total Hours ..... 120
${ }^{1}$ Course is a Departmental Communications requirement.
2 For any student majoring in Agricultural Business, the 21 hours of Agribusiness Prerequisite Core courses must be completed before a student can enroll in upper division courses in the following
areas: Agribusiness Core, Concentration Requirements, and Capstone Experience.
${ }^{3}$ Satisfies 3 hours of State Minimum Core Mathematics.
${ }^{4}$ Satisfies 3 hours of State Minimum Core Social Sciences.

## Additional Requirements for Agricultural Economics Concentration (18 hours):

Complete the following three courses:


## Total Hours

18
The approved list of courses, check sheet, and degree program for all concentrations is available in the Agricultural Economics and Agribusiness departmental office.
${ }^{1}$ AGEC 4603 may only be used in one group (no duplicates)

## Agricultural Business B.S.A. with Agricultural Economics Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan in Agricultural Economics and Agribusiness should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. The Agricultural Economics and Agribusiness major has three concentrations: Agricultural Business Management and Marketing, PreLaw, and Agricultural Economics.

| First Year | Fall | Units Spring |
| :---: | :---: | :---: |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2043 Survey of Calculus (ACTS <br> Equivalency $=$ MATH 2203) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| U.S. History or Government State Minimum Core from (Satisfies General Education Outcome 4.2): <br> HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) <br> HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123) <br> PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) | 3 |  |
| Satisfies General Education Outcome 3.3: <br> AGEC 1103 Principles of Agricultural Microeconomics <br> or ECON 2023 Principles of Microeconomics (ACTS Equivalency $=$ ECON 2203) | 3 |  |
| UNIV 1001 University Perspectives <br> ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers or ISYS 1123 Business Application Knowledge Computer Competency | 1 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) |  | 3 |
| Satisfies General Education Outcome 3.3: <br> AGEC 2103 Principles of Agricultural Macroeconomics <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency $=$ ECON 2103) |  | 3 |
| AGEC 2303 Introduction to Agribusiness (Satisfies General Education Outcome 4.1) |  | 3 |
| AGEC 2143 Agribusiness Financial Records or ACCT 2013 Accounting Principles |  | 3 |
| Year Total: | 16 | 15 |
| Second Year | Fall | Units Spring |
| Select one from: <br> AGEC 2403 Quantitative Tools for Agribusiness <br> STAT 2303 Principles of Statistics (ACTS <br> Equivalency $=$ MATH 2103) <br> BUSI 1033 Data Analysis and Interpretation | 3 |  |
| MATH 2053 Finite Mathematics | 3 |  |
| Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{2,3}$ | 3 |  |
| General Electives ${ }^{4}$ | 3 |  |

Fall


| HDFS 2603 | Rural Families and Communities |
| :---: | :---: |
| AEAB Requirements |  |
| Agribusiness Prerequisite Core (21 hours) ${ }^{2}$ ( 21 |  |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) (or higher MATH course from the University Core excluding MATH 2183) ${ }^{3}$ |  |
| AGEC 2403 Quantitative Tools for Agribusiness or STAT 230Principles of Statistics (ACTS Equivalency $=$ MATH 2103) |  |
| or BUSI 103:Data Analysis and Interpretation |  |
| AGEC 1103 <br> or ECON | Principles of Agricultural Microeconomics ${ }^{4}$ <br> 023inciples of Microeconomics (ACTS Equivalency = ECON 2203) |
| AGEC 2103 or ECON | Principles of Agricultural Macroeconomics ${ }^{4}$ <br> 0 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) |
| AGEC 2143 or ACCT 2 | Agribusiness Financial Records 1Rccounting Principles |
| AGEC 2303 | Introduction to Agribusiness |
|  | Agricultural and Human Environmental Sciences Applications of Microcomputers |
| or ISYS 11 | BBusiness Application Knowledge - Computer Competency |
| Agribusiness C | ore (27 hours) 27 |
| AGEC 3303 | Food and Agricultural Marketing |
| AGEC 3373 | Futures and Options Markets |
| AGEC 3403 | Farm Business Management |
| AGEC 3503 | Agricultural Law I |
| AGEC 4143 | Agricultural Finance |
| Choose 12 hou or the Bumpe | urs from MATH, STAT, AGEC or courses in WCOB s College. |
| Concentration | Requirements 18 |
| Capstone Expe | rience 1-3 |
| AGEC 401V | Internship in Agribusiness |
| AGEC 4041 | Agribusiness Capstone |
| General Electiv | es 18-20 |
| Total Hours | 120 |
| ${ }^{1}$ Course is a Departmental Communications requirement. <br> ${ }^{2}$ For any student majoring in Agricultural Business, the 21 hours of Agribusiness Prerequisite Core courses must be completed before a student can enroll in upper division courses in the following areas: Agribusiness Core, Concentration Requirements, and Capstone Experience. |  |
| ${ }^{3}$ Satisfies 3 hours of State Minimum Core Mathematics. |  |

## Additional Requirements for Agribusiness Management and Marketing Concentration (18):

## Agribusiness Management and Marketing Concentration (18 hours)

Select 18 hours from the following three groups (students must select 18 a minimum of one course from each group):

## Policy Group

AGEC 3413
AGEC 3523
AGEC 4123
AGEC 4163
AGEC 4613
AGEC 4623
AGEC 4603 Food Economics and Health ${ }^{1}$
Marketing Group
AGEC 3313 Agribusiness Sales
AGEC 4113 Agricultural Prices and Forecasting
AGEC 4303 Agribusiness Marketing Management
AGEC 4373 Basis Trading: Applied Price Risk Management
AGEC 4383 Basis Trading: Case Study
AGEC 4603 Food Economics and Health ${ }^{1}$

## Management Group

AGEC 4243 Agribusiness Strategy

AGEC 4313 Agricultural Business Management
AGEC 4323 AgriBusiness Entrepreneurship
AGEC 4403 Advanced Farm Business Management
Total Hours
${ }^{1}$ AGEC 4603 may only be used in one group (no duplicates).

## Agricultural Business B.S.A. with Management and Marketing Concentration <br> Eight-Semester Degree Program

Students wishing to follow the degree plan in Agricultural Economics and Agribusiness should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. The Agricultural Economics and Agribusiness major has three concentrations: Agricultural Business Management and Marketing, PreLaw, and Agricultural Economics.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency = | 3 |  |
| ENGL 1013) (Unless Exempt) (Satisfies General |  |  |
| Education Outcome 1.1) | 3 |  |
| MATH 2043 Survey of Calculus (ACTS |  |  |
| Equivalency = MATH 2203) ((or higher math from |  |  |
| the State Minimum Core excluding MATH 2183) |  |  |
| (Satisfies General Education Outcome 2.1) |  |  | | U.S. History or Government State Minimum Core |
| :--- |
| from (Satisfies General Education Outcome 4.2): |
| HIST 2003 History of the American People to |
| 1877 (ACTS Equivalency = HIST 2113) |

AGEC 1103 Principles of Agricultural
Microeconomics
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
General Elective
UNIV 1001 University Perspectives
ENGL 1023 Composition II (ACTS Equivalency =
ENGL 1023) (Unless Exempt (Satisfies General Education Outcome 1.1)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1)
AGEC 2103 Principles of Agricultural
Macroeconomics (Satisfies General Education
Outcome 3.3)
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
AGEC 2303 Introduction to Agribusiness (Satisfies
General Education Outcome 4.1)
ASTM 2903 Agricultural and Human Environmental
Sciences Applications of Microcomputers
or ISYS 1123 Business Application Knowledge -
Computer Competency
Year Total:
Second Year
Fall

3
AGEC 2403 Quantitative Tools for Agribusiness
STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
WCOB 1033
Fine Arts or Humanities State Minimum Core
Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{2,3}$

Science State Minimum Core Elective (Satisfies
4
General Education Outcome 3.4)
AGEC 2143 Agribusiness Financial Records
3
or ACCT 2013 Accounting Principles
General Elective ${ }^{4}$
3
Select one of the following (Satisfies General
Education Outcome 3.3):
HDFS 2603 Rural Families and Communities
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103)
SOCI 2013 General Sociology (ACTS
Equivalency = SOCI 1013)
Science State Minimum Core Elective (Satisfies
General Education Outcome 3.4)
AGEC 3303 Food and Agricultural Marketing
Communication Intensive Elective
General Elective ${ }^{4}$
Year Total:
16

Units
Fall

| University Requirements |  |  |
| :---: | :---: | :---: |
| UNIV 1001 | University Perspectives | 1 |
| Communications |  | 12 |
| Select English State Minimum Core Courses (6 hours unless exempt) |  |  |
| COMM 1313 | $\begin{aligned} & \text { Public Speaking (ACTS Equivalency }=\text { SPCH } \\ & 1003)^{1} \end{aligned}$ |  |
| Select one of the following: |  |  |
| ACOM 3143 | Communicating Agriculture to the Public |  |
| AGED 4003 | Issues in Agriculture |  |
| ACOM 4343 | Communication Campaigns in Agriculture |  |
| COMM 2303 | Advanced Public Speaking |  |
| COMM 2323 | Interpersonal Communication |  |
| COMM 2343 | Introduction to Small-Group Communication |  |
| COMM 3383 | Persuasion |  |
| CSES 3023 | Crop, Soil, and Environmental Sciences Colloquium |  |
| ENGL 2003 | Advanced Composition |  |
| ENGL 2013 | Essay Writing |  |
| ENGL 3053 | Technical and Professional Writing (ACTS Equivalency = ENGL 2023) |  |
| U.S. History or Government |  | 3 |
| Select U.S. History or Government State Minimum Core Course |  |  |
| Science |  | 8 |
| Select 2 Courses from Science State Minimum Core (8 total hours) |  |  |
| Fine Arts and Humanities |  | 6-7 |
| Select Fine Arts and Humanities State Minimum Core Courses |  |  |
| Social Sciences (3 hours) |  | 3 |
| Select one of the following: |  |  |
| $\begin{array}{ll}\text { PSYC } 2003 & \text { General Psychology (ACTS Equivalency = } \\ & \text { PSYC 1103) }\end{array}$ |  |  |
| SOCI 2013 General Sociology (ACTS Equivalency = SOCI |  |  |
| HDFS 2603 Rural Families and Communities |  |  |
| AEAB Requirements |  |  |
| Agribusiness Prerequisite Core (21 hours) ${ }^{2}$ |  | 21 |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) (or higher MATH course from the University Core excluding MATH 2183) ${ }^{3}$ |  |  |
| AGEC 2403 Quantitative Tools for Agribusiness or STAT 230Principles of Statistics (ACTS Equivalency $=$ MATH 2103) <br> or BUSI 103: Data Analysis and Interpretation |  |  |
| AGEC 1103 Principles of Agricultural Microeconomics ${ }^{4}$ or ECON 20³inciples of Microeconomics (ACTS Equivalency = ECON 2203) |  |  |
| AGEC 2103 Principles of Agricultural Macroeconomics ${ }^{4}$ or ECON 20 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) |  |  |
| AGEC 2143 Agribusiness Financial Records or ACCT 201Accounting Principles |  |  |
| AGEC 2303 | Introduction to Agribusiness |  |
| ASTM 2903 | Agricultural and Human Environmental Sciences Applications of Microcomputers |  |

or ISYS 112Business Application Knowledge - Computer Competency
Agribusiness Core (27 hours) 27
AGEC 3303 Food and Agricultural Marketing
AGEC 3373 Futures and Options Markets
AGEC 3403 Farm Business Management
AGEC 3503 Agricultural Law I
AGEC 4143 Agricultural Finance
Choose 12 hours from MATH, STAT, AGEC or courses in WCOB or the Bumpers College.
Concentration Requirements 18
Capstone Experience 1-3
AGEC 401V Internship in Agribusiness
AGEC 4041 Agribusiness Capstone
General Electives

## Total Hours

${ }^{1}$ Course is a Departmental Communications requirement.
${ }^{2}$ For any student majoring in Agricultural Business, the 21 hours of Agribusiness Prerequisite Core courses must be completed before a student can enroll in upper division courses in the following areas: Agribusiness Core, Concentration Requirements, and Capstone Experience.
${ }^{3}$ Satisfies 3 hours of State Minimum Core Mathematics.
${ }^{4}$ Satisfies 3 hours of State Minimum Core Social Sciences.

## Additional Requirements for Pre-Law Concentration (18 hours):

AGEC 3523 Environmental and Natural Resources Law
or AGEC 4123 Legal Issues in Animal Agriculture
Select 15 hours from at least two of the following areas:
Area 1
BLAW 2013 The Legal Environment of Business (ACTS Equivalency $=$ BLAW 2003)
BLAW 3033 Commercial Law
Area 2
COMM 2303 Advanced Public Speaking
COMM 3383 Persuasion
COMM 3443 Introduction to Rhetorical Theory
COMM 4113 Legal Communication
Area 3
PHIL 2003 Introduction to Philosophy (ACTS Equivalency = PHIL 1103)
PHIL 2103 Introduction to Ethics (ACTS Equivalency = PHIL 1003)

PHIL 2203 Logic (ACTS Equivalency = PHIL 1003)
PHIL 3103 Ethics and the Professions
PHIL 4143 Philosophy of Law
Area 4
PLSC 3103 Public Administration
PLSC 4153 Public Policy
PLSC 3243 The Judicial Process
PLSC 4193 Administrative Law
PLSC 4253 The U.S. Constitution I

PLSC 4263 The U.S. Constitution II
Area 5
AGEC (any upper level)

## Total Hours

${ }^{1}$ AGEC courses in the Policy Group are strongly recommended. Policy Group courses include: AGEC 3413, AGEC 3523, AGEC 4123,
AGEC 4163, AGEC 4603, AGEC 4613, and AGEC 4623.

## 3/3 Program - Agriculture

Exceptional students in the pre-law concentration in the Dale Bumpers College of Agricultural, Food and Life Sciences may enroll in the School of Law in their fourth year provided that all requirements have been met. Students must have:

- Completed all university, college, and major course requirements for the pre-law concentration;
- Completed 12 hours in the specialization list for pre-law;
- Earned a cumulative GPA of at least 3.50 without grade renewal; and
- Received an LSAT score of at least 159.

A student admitted to this program may substitute School of Law course work for the remaining total hours required for the bachelor's degree in agricultural business.

It is a requirement of the School of Law's accrediting standards that no student be admitted to the School of Law until they have completed at least three-fourths of the work necessary for the baccalaureate degree. The requirements embodied in the $3 / 3$ programs satisfy this requirement.

## Agricultural Business B.S.A. with Pre-Law Concentration

## Eight-Semester Degree Program

Students wishing to follow the degree plan in Agricultural Economics and Agribusiness should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. The Agricultural Economics and Agribusiness major has three concentrations: Agricultural Business Management and Marketing, PreLaw, and Agricultural Economics.

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 3 |  |
| MATH 2043 Survey of Calculus (ACTS |  |  |
| Equivalency = MATH 2203) (or higher MATH |  |  |
| course from the State Minimum Core excluding |  |  |
| MATH 2183 (Satisfies General Education Outcome |  |  |
| 2.1) |  |  |
| U.S. History or Government State Minimum Core |  |  |
| from (Satisfies General Education Outcome 4.2): |  |  |
| HIST 2003 History of the American People to |  |  |
| 1877 (ACTS Equivalency = HIST 2113) |  |  |
| HIST 2013 History of the American People, |  |  |
| 1877 to Present (ACTS Equivalency = HIST |  |  |
| 2123) |  |  |
| PLSC 2003 American National Government |  |  |
| (ACTS Equivalency = PLSC 2003) |  |  |

## Satisfies General Education Outcome 3.3:

AGEC 1103 Principles of Agricultural Microeconomics
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
General Elective
UNIV 1001 University Perspectives 1
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1)
Satisfies General Education Outcome 3.3:
AGEC 2103 Principles of Agricultural
Macroeconomics
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
AGEC 2303 Introduction to Agribusiness (Satisfies
General Education Outcome 4.1)
ASTM 2903 Agricultural and Human Environmental
Sciences Applications of Microcomputers
or ISYS 1123 Business Application Knowledge -
Computer Competency
Year Total: 16

| Second Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| Communication Intensive Elective | 3 |  |
| Select one from: | 3 |  |

AGEC 2403 Quantitative Tools for Agribusiness
STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
Fine Arts or Humanities State Minimum Core
Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{2,3}$
Science State Minimum Core Elective (Satisfies General Education Outcome 3.4)
AGEC 2143 Agribusiness Financial Records
or ACCT 2013 Accounting Principles
Social Sciences State Minimum Core from
(Satisfies General Education Outcome 3.3):
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103)
HDFS 2603 Rural Families and Communities
SOCI 2013 General Sociology (ACTS
Equivalency = SOCI 1013)
Science State Minimum Core Elective (Satisfies 4
General Education Outcome 3.4)
AGEC 3303 Food and Agricultural Marketing 3
General Electives 6
Year Total: 16



## Additional Requirements for Agribusiness Risk Management Concentration (18 hours):

Complete each of the following courses:

| AGEC 4113 | Agricultural Prices and Forecasting | 3 |
| :--- | :--- | ---: |
| AGEC 4373 | Basis Trading: Applied Price Risk Management | 3 |
| ECON 3033 | Microeconomic Theory | 3 |
| FINN 3053 | Financial Markets and Institutions | 3 |
| FINN 3623 | Risk Management | 3 |
| FINN 3703 | International Finance | 3 |
| Total Hours |  | $\mathbf{1 8}$ |

The approved list of courses, check sheet, and degree program for all concentrations is available in the Agricultural Economics and Agribusiness departmental office.

## Agricultural Business B.S.A. with Agribusiness Risk Management Concentration

## Eight-Semester Degree Program

Students wishing to follow the degree plan in Agricultural Economics and Agribusiness should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.
First Year
ENGL 1013 Composition I (ACTS Equivalency =
ENGL 1013) (Unless Exempt) (Satisfies General
Education Outcome 1.1)
MATH 2043 Survey of Calculus (ACTS
Spring
Equivalency = MATH 2203) ((or higher math from
the State Minimum Core excluding MATH 2183)
(Satisfies General Education Outcome 2.1)
U.S. History or Government State Minimum Core
from (Satisfies General Education Outcome 4.2):
HIST 2003 History of the American People to
1877 (ACTS Equivalency = HIST 2113)
HIST 2013 History of the American People,
1877 to Present (ACTS Equivalency = HIST
2123)
PLSC 2003 American National Government
(ACTS Equivalency = PLSC 2003)
Satisfies General Education Outcome 3.3:
AGEC 1103 Principles of Agricultural
Microeconomics
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
General Elective
UNIV 1001 University Perspectives

ENGL 1023 Composition II (ACTS Equivalency = 3
ENGL 1023) (Unless Exempt (Satisfies General Education Outcome 1.1)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1)
Satisfies General Education Outcome 3.3:
AGEC 2103 Principles of Agricultural
Macroeconomics
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
AGEC 2303 Introduction to Agribusiness (Satisfies 3
General Education Outcome 4.1)
ASTM 2903 Agricultural and Human Environmental
Sciences Applications of Microcomputers
or ISYS 1123 Business Application Knowledge -
Computer Competency
Year Total: 16

| Second Year | Units <br> Spring |
| :--- | ---: | ---: |
| Select one from: | 3 |

STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
BUSI 1033 Data Analysis and Interpretation
Fine Arts or Humanities State Minimum Core
Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{2,3}$
Science State Minimum Core Elective (Satisfies
General Education Outcome 3.4)
AGEC 2143 Agribusiness Financial Records
or ACCT 2013 Accounting Principles
General Elective ${ }^{4}$
Select one of the following (Satisfies General
Education Outcome 3.3):
HDFS 2603 Rural Families and Communities
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103)
SOCI 2013 General Sociology (ACTS
Equivalency = SOCI 1013)
Science State Minimum Core Elective (Satisfies
General Education Outcome 3.4)
AGEC 3303 Food and Agricultural Marketing
Communication Intensive Elective
General Elective ${ }^{4}$
Year Total:
Third Year Fall

AGEC 3373 Futures and Options Markets 3
AGEC 3403 Farm Business Management 3
AGEC 3503 Agricultural Law I 3
General Elective ${ }^{4} 6$
Fine Arts or Humanities State Minimum Core
Elective (Satisfies General Education Outcome 3.1
or 3.2) ${ }^{2,3}$
ABRM Concentration Electives
Agribusiness Core Directed Electives
General Elective ${ }^{4}$
Year Total: 15
Fourth Year Fall

AGEC 4143 Agricultural Finance 3
ABRM Concentration Electives 6
Agribusiness Core Directed Electives 3
General Elective ${ }^{4} 3$
ABRM Concentration Elective
Agribusiness Core Directed Electives
Capstone Experience (Satisfies General Education
Outcome 6.1)
Year Total:

15
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 1203 or MATH 1313.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, ENGL 2023, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
${ }^{4}$ Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

## Minor in Agricultural Business (AGBS-M)

The Agricultural Business Minor will consist of 21 semester hours to include:

## Core Requirements (9 hours) ${ }^{1}$

| AGEC 1103 | Principles of Agricultural Microeconomics | 3 |
| :---: | :---: | :---: |
| or ECON 2023 | Principles of Microeconomics (ACTS Equivalency = ECON 2203) |  |
| AGEC 2303 | Introduction to Agribusiness | 3 |
| or AGEC 2103 | Principles of Agricultural Macroeconomics |  |
| or ECON 2013 | Principles of Macroeconomics (ACTS Equivalency = ECON 2103) |  |
| ASTM 2903 | Agricultural and Human Environmental Sciences Applications of Microcomputers | 3 |
| or ISYS 1123 | Business Application Knowledge - Computer Competency |  |

Select two of the following Core Electives (6 hours): 6
AGEC 2143 Agribusiness Financial Records or ACCT 201Accounting Principles
AGEC 2403 Quantitative Tools for Agribusiness
or STAT 230 Brinciples of Statistics (ACTS Equivalency $=$ MATH 2103)
or BUSI 103Data Analysis and Interpretation
AGEC 3303 Food and Agricultural Marketing
AGEC 3313 Agribusiness Sales
AGEC 3373 Futures and Options Markets
AGEC 3403 Farm Business Management
AGEC 3503 Agricultural Law I
AGEC 4143 Agricultural Finance
Select two of the following Controlled Electives (6 hours): 6
Any upper division AGEC course not already used
POSC 4213 Integrated Poultry Management Systems
Approved substitutions ${ }^{2}$
Total Hours
${ }^{1}$ For any student minoring in Agricultural Business, all 9 hours of Core Requirements must be completed before enrolling in upper division Core Elective or Controlled Elective courses.
2 Additional upper-division courses in the Sam M. Walton College of Business may be substituted with approval, provided prerequisites for those courses have been satisfied outside the minor. A minimum of six hours of upper-division AGEC courses without substitution is required for the minor.

A student planning to minor in Agricultural Business should contact the program adviser for consultation and more detailed information.

## Minor in International Economic Development (INDV-M)

## Course Requirements

| Successfully complete four of the following five courses: | 12 |  |
| :--- | :--- | :--- |
| AGEC 4163 | Agricultural and Rural Development |  |
| AGEC 4623 | International Agricultural Trade and Commercial <br> Policy |  |
| ECON 3843 | Economics of the Developing World |  |
| ECON 3853 | Emerging Markets |  |
| ECON 4633 | International Trade |  |
| Take a minimum of 3 hours of pre-approved study abroad experience | 3 |  |

Total Hours

## Faculty

Ahrendsen, Bruce L., Ph.D., M.S. (North Carolina State University), B.S. (lowa State University), Professor, 1990, 2007.
Anderson, John D., Ph.D. (Oklahoma State University), M.S. (Arkansas State University), B.S. (College of the Ozarks), Professor, 2020.
Cochran, Mark J., Ph.D., M.S. (Michigan State University), B.S. (New Mexico State University), Professor, 1982, 1991.
Durand-Morat, Alvaro, Ph.D., M.S. (University of Arkansas), B.S.E. (National University of Entre Rios), Assistant Professor, 2016.
Fang, Di, Ph.D., W.P. (Arizona State University), B.A. (Nankai University), Assistant Professor, 2015.
Huang, Quiqiong, Ph.D. (University of California-Davis), B.S. (Remin University of China), Professor, 2013, 2018.
Kemper, Nathan, Ph.D., M.S. (University of Arkansas), B.S. (Missouri State University), Clinical Professor, 2014.
Kovacs, Kent F., Ph.D. (University of California-Davis), B.A. (Vassar College), Associate Professor, 2012, 2018.
Lawson, Connor, Ph.D., M.E. (North Carolina State University), B.A. (Macalester College), Assistant Professor, 2022.
McKenzie, Andrew Malcolm, Ph.D. (North Carolina State University), M.Sc. (Stirling University), B.Admin. (University of Dundee), Professor, 1998, 2010.
Mitchell, James, Ph.D. (Kansas State University), M.S., B.S. (Oklahoma State University), Extension Assistant Professor, 2020.
Nalley, Lawton Lanier, Ph.D. (Kansas State University), M.S.
(Mississippi State University), B.S. (The Ohio State University), Professor, 2008, 2018.
Popp, Jennie Sheerin, Ph.D., M.S. (Colorado State University), B.S. (University of Scranton), Professor, 1998, 2010.
Popp, Michael P., Ph.D. (Colorado State University), M.B.A. (University of Colorado-Boulder), B.Comm. (University of Manitoba), Professor, 1998, 2006.

Rainey, Daniel V., Ph.D., M.S. (Purdue University), B.S.A. (University of Arkansas), Associate Professor, 2000, 2006.
Rainey, Ronald L., Ph.D., M.S., B.S.A. (University of Arkansas), Professor, 1993, 2012.
Rumley, Rusty W., J.D. (University of Oklahoma), Research Assistant Professor, 2009.
Shew, Aaron M., Ph.D., M.S., M.A. (University of Arkansas), B.S., B.A. (Middle Tennessee State University), Assistant Professor, 2021.
Tester, Colson, M.S., B.S. (University of Arkansas), Instructor, 2020.
Thomsen, Michael R., Ph.D. (University of Minnesota-Morris), M.S., B.S.
(Utah State University), Professor, 1998, 2015.
Watkins, Kenton Bradley, Ph.D. (Oklahoma State University), M.S., B.A. (University of Arkansas), Professor, 2002, 2014.

## Courses

AGEC 1103. Principles of Agricultural Microeconomics. 3 Hours.
Introduction to agricultural economics, including a survey of the role and characteristics of agriculture businesses in our economic system. Basic economic concepts concerning price determination, profit maximization, and resource use are emphasized. The use of economic principles as applied to the production and marketing decisions made by managers of agricultural firms is demonstrated. Credit will be allowed for only one of AGEC 1103 or ECON 2023 or ECON 2023H. Pre- or Corequisite: MATH 1203. (Typically offered: Fall, Spring and Summer) This course is cross-listed with ECON 2023.

AGEC 1103H. Honors Principles of Agricultural Microeconomics. 3 Hours. Introduction to agricultural economics, including a survey of the role and characteristics of agriculture businesses in our economic system. Basic economic concepts concerning price determination, profit maximization, and resource use are emphasized. The use of economic principles as applied to the production and marketing decisions made by managers of agricultural firms is demonstrated. Credit will be allowed for only one of AGEC 1103 or ECON 2023 or ECON 2023H. Pre- or Corequisite: MATH 1203. (Typically offered: Fall and Spring)
This course is cross-listed with ECON 2023, AGEC 1103.
AGEC 2103. Principles of Agricultural Macroeconomics. 3 Hours.
Applications of economics principles to problems of agricultural production, distribution, and income; including a study of the interrelationship between agriculture and other segments of the economy; and the dynamic forces in the economy which affect agriculture. Credit will be allowed for only one of AGEC 2103 or AGEC 2103H or ECON 2013 or ECON 2013H. Pre- or Corequisite: MATH 1203. (Typically offered: Fall and Spring)
This course is cross-listed with ECON 2013.

## AGEC 2103H. Honors Principles of Agricultural Macroeconomics. 3 Hours.

Applications of economics principles to problems of agricultural production, distribution, and income; including a study of the interrelationship between agriculture and other segments of the economy; and the dynamic forces in the economy which affect agriculture. Credit will be allowed for only one of AGEC 2103 or AGEC 2103H or ECON 2013 or ECON 2013H. Pre- or Corequisite: MATH 1203. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is cross-listed with ECON 2013, AGEC 2103.
AGEC 2143. Agribusiness Financial Records. 3 Hours.
Principles of small agricultural business management accounting practices are taught to allow students to gain hands-on experience with financial record keeping for a business. Resulting financial statements are analyzed to determine opportunities for enhancing financial efficiency. Prerequisite: (ASTM 2903 or ISYS 1123) and (AGEC 1103 or ECON 2023 or ECON 2143). (Typically offered: Fall)

## AGEC 2303. Introduction to Agribusiness. 3 Hours.

Introduction to agribusiness issues as they relate to the food processing, wholesale and retail sectors of the agricultural industry. Coverage of methods and tools agribusiness managers use to evaluate business opportunities. Case studies serve to communicate concepts of product distribution, design, promotion and pricing in the development of a marketing plan. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Fall, Spring and Summer)

## AGEC 2403. Quantitative Tools for Agribusiness. 3 Hours.

Introduction to quantitative methods used in agricultural economics and agribusiness with an emphasis on skills and techniques that will enhance the ability of students to perform in upper division coursework. Provides an overview of statistical and optimization methods used in research problems, economic theory, and applied decision making activities. Prerequisite: (AGEC 1103 or ECON 2023 or ECON 2143) and MATH 2043 (or higher MATH course from the University Core excluding MATH 2183). (Typically offered: Fall)

## AGEC 3303. Food and Agricultural Marketing. 3 Hours.

Surveys consumer trends in food markets and the marketing activities of the food and fiber system. Emphasizes marketing concepts for both commodities and differentiated food products. Topics include applied consumer and price theory; marketing management; structure and performance of the food system; and current agricultural marketing topics. Prerequisite: AGEC 1103 or ECON 2023 or ECON 2143. (Typically offered: Fall, Spring and Summer)

## AGEC 3313. Agribusiness Sales. 3 Hours.

Principles of professional sales and sales management techniques used in food and agricultural firms; develop a professional sales presentation; study current agribusiness industry professional sales persons and sales practices and techniques. Prerequisite: AGEC 1103 or AGEC 2103 or ECON 2013 or ECON 2023 or ECON 2143 or equivalent. (Typically offered: Spring)

## AGEC 3373. Futures and Options Markets. 3 Hours.

Theory and mechanics of commodity futures and options markets including trading, margin, fees, etc. Price relationships between cash, futures and options. Fundamental and technical price analysis. Price risk management strategies for producers and users of agricultural commodity marketing plan. Speculative and hedging simulation exercises. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Fall)

## AGEC 3403. Farm Business Management. 3 Hours.

Application of economic principles for the profitable organization and operation of the farm business. Focuses upon agricultural production management decision-making tools: budgeting techniques (enterprise, partial, cash flow), balance sheet, income statement, cash flow, investment analysis and risk management. Recommended: AGEC 1103 (or ECON 2023), AGEC 2143, and ASTM 2903. (Typically offered: Fall, Spring and Summer)

## AGEC 3413. Principles of Environmental Economics. 3 Hours.

An introductory, issues-oriented course in the economics of the environment. The course will focus on what is involved in how society makes decisions about environmental quality. The environmental issues important to the State of Arkansas and the United States will be emphasized. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Spring)
This course is cross-listed with ENSC 3413.

## AGEC 3413H. Honors Principles of Environmental Economics. 3 Hours.

 An introductory, issues-oriented course in the economics of the environment. The course will focus on what is involved in how society makes decisions about environmental quality. The environmental issues important to the State of Arkansas and the United States will be emphasized. Corequisite: Drill component. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Spring) This course is cross-listed with AGEC 3413, ENSC 3413.AGEC 3503. Agricultural Law I. 3 Hours.
Examination of those areas of law especially applicable to agriculture. Fundamentals of contract law, torts law, and property law will accompany discussion of major areas of agricultural law; acquisition and disposal of farmland; farm tenancies; rights and limitations in the use and ownership of farmland; water law; environmental protection; protection of the productivity of agricultural land; and the law of sales and secured transactions in an agricultural context. (Typically offered: Fall)
AGEC 3523. Environmental and Natural Resources Law. 3 Hours.
Principles of environmental and natural resources law relevant to agriculture, food and the environmental sciences; legal principles relating to regulation of water, air, hazardous substances, land, wildlife, livestock, and water rights. Principles of civil and criminal liabilities and other developing legal and regulatory issues relating to agriculture and natural resources. (Typically offered: Spring Even Years)
AGEC 400V. Special Problems. 1-6 Hour.
Special studies and readings conducted under the direct supervision of staff members to satisfy the requirements of individual students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
AGEC 401V. Internship in Agribusiness. 1-6 Hour.
A supervised practical work experience in an agribusiness firm or a governmental or industrial organization having direct impact on agriculture in order to gain professional competence and insight to employment opportunities. Prerequisite: junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.
AGEC 402V. Special Topics. 1-3 Hour.
Studies of selected topics in agricultural economics not available in other courses. (Typically offered: Irregular) May be repeated for degree credit.

## AGEC 4041. Agribusiness Capstone. 1 Hour.

The purpose of this course is to provide students with an opportunity to apply and integrate knowledge from previous coursework in general education and agribusiness. This course is designed for students to demonstrate mastery of a number of subjects within the agribusiness discipline. Students will provide evidence of integrated knowledge through a variety of means including oral presentations, creation of a 1250-word reflective essay, and applying problem solving and critical thinking skills. Prerequisite: Senior standing. (Typically offered: Fall and Spring)

## AGEC 4113. Agricultural Prices and Forecasting. 3 Hours.

Price theory and techniques for predicting price behavior of general economy and price behavior of individual agricultural products will be analyzed. Provides practice in the application of economics and statistics to agricultural price analysis. Prerequisite: ((AGEC 1103 or ECON 2023) and (AGEC 2403 or STAT 2303 or BUSI 1033) and (MATH 2043 or higher, excluding MATH 2183)). (Typically offered: Spring)

## AGEC 4123. Legal Issues in Animal Agriculture. 3 Hours.

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation from local to state to federal, depending on the issue will be studied and discussed. (Typically offered: Spring Odd Years)
This course is cross-listed with ANSC 4123, POSC 4123.

## AGEC 4143. Agricultural Finance. 3 Hours.

Methods and procedures whereby agricultural firms acquire and utilize funds required for their successful operation. Emphasis is placed upon role of finance and financial planning and consideration is given to an understanding of financial firms serving agriculture. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013) and (AGEC 2143 or ACCT 2013). (Typically offered: Fall)

## AGEC 4163. Agricultural and Rural Development. 3 Hours.

Examination of agricultural and rural development issues in less developed countries. Alternative agricultural production systems are compared, development theories examined, and consideration given to the planning and implementation of development programs. Prerequisite: AGEC 1103 (or ECON 2023). (Typically offered: Fall)

AGEC 4163H. Honors Agricultural and Rural Development. 3 Hours.
Examination of agricultural and rural development issues in less developed countries. Alternative agricultural production systems are compared, development theories examined, and consideration given to the planning and implementation of development programs. Prerequisite: AGEC 1103 (or ECON 2023) and honors standing. (Typically offered: Fall)
This course is equivalent to AGEC 4163.
AGEC 4243. Agribusiness Strategy. 3 Hours.
Addresses problems of strategy formulation in agribusiness emphasizing current problems and cases in agriculture. Surveys modern and classic perspectives on strategy with applications to agribusiness. Examines the development of firm level strategies within the structure and competitive environment of agricultural firms and industries. Prerequisite: MATH 2043 and (AGEC 1103 or ECON 2023 or ECON 2143) and (AGEC 3403 or AGEC 2143 or ACCT 2013). (Typically offered: Spring)

## AGEC 4303. Agribusiness Marketing Management. 3 Hours.

Marketing concepts will be developed and applied to the global food and fiber system. The course will use both commodity and product marketing principles and economic theory to analyze varied marketing situations. Case studies will be used to demonstrate the role that demand analysis and consumer behavior play in market management. Prerequisite: AGEC 2303 and AGEC 3303. (Typically offered: Fall and Summer)

AGEC 4313. Agricultural Business Management. 3 Hours.
The planning, organizing, leading and controlling functions of management as they relate to agricultural business firms. Marketing of value-added products, budgeting, organizational structure, cost control, financial statements, capital budgeting and employee supervision and motivation. Case studies are used to teach communication and decision-making skills. Senior standing recommended. Prerequisite: (AGEC 2143 or ACCT 2013) and AGEC 2303. (Typically offered: Fall)

AGEC 4323. AgriBusiness Entrepreneurship. 3 Hours.
Agribusiness entrepreneurship is the process of bringing food or rural-based products and services from conceptualization to market. The course presents the opportunities, problems and constraints facing individuals and firms operating in rural or isolated markets while emphasizing the steps in conceptualization, development, marketing, and delivery-selling of agribusiness rural products. Prerequisite: AGEC 1103 or equivalent. (Typically offered: Spring)

AGEC 4373. Basis Trading: Applied Price Risk Management. 3 Hours. This course provides students an opportunity to gain a detailed working knowledge of how basis trading concepts and practices are applied to agricultural markets and to develop a skill set that can be put immediately into practice in any basis trading operation. Prerequisite: AGEC 3373 or consent of instructor. (Typically offered: Spring and Summer)

AGEC 4383. Basis Trading: Case Study. 3 Hours.
This course provides an opportunity to apply principles learned in AGEC 4373 to grain merchandising using the case study approach. The course will involve in-class meetings supplemented with faculty-directed group-based learning experiences involving professional grain merchandisers. Group activities will follow the traditional case study method. Prerequisite: AGEC 4373. (Typically offered: Fall)

AGEC 4403. Advanced Farm Business Management. 3 Hours.
Principles and procedures of decision making as applied to the allocation of resources in the farm business for profit maximization. Emphasis is placed on use of principles of economics and their application to the decision making process. Includes exercises on the application of principles to specific farm management problems. Senior standing recommended. Prerequisite: AGEC 3403 and (ASTM 2903 or equivalent) and (AGEC 2143 or ACCT 2013). (Typically offered: Fall)

AGEC 4403H. Honors Advanced Farm Business Management. 3 Hours. Principles and procedures of decision making as applied to the allocation of resources in the farm business for profit maximization. Emphasis is placed on use of principles of economics and their application to the decision making process. Includes exercises on the application of principles to specific farm management problems. Senior standing recommended. Prerequisite: AGEC 3403, (ASTM 2903 or equivalent), (AGEC 2143 or ACCT 2013) and honors standing. (Typically offered: Fall)
This course is equivalent to AGEC 4403.
AGEC 4603. Food Economics and Health. 3 Hours.
This course provides an advanced overview of selected topics in food economics, food and nutrition policy and the interface between nutrition programs and health policy. Students will develop an understanding of economic and policy concepts of food, nutrition, and health. The course emphasizes analytical tools that can be applied to study issues in food, nutrition, and health facing the US and world populations. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2403 or BUSI 1033 or STAT 2303 or MATH 2043 or MATH 3083 or MATH 3013). (Typically offered: Spring)

AGEC 4613. Political Economy of Agriculture and Food. 3 Hours. Agricultural and food policies are studied from domestic and international perspectives. Laws, regulations, decisions and actions by governments and other institutions are examined in terms of rationale, content, and consequences. Economic and political frameworks are used to assess policies in terms competitive structure, operation, and performance of farming and food systems. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013) and (PSYC 2003 or SOCI 2013 or HDFS 2603). (Typically offered: Fall)

AGEC 4623. International Agricultural Trade and Commercial Policy. 3 Hours. Analysis of agricultural market competition and performance in a global economy. The impact of domestic and international agricultural policies on domestic and international markets and welfare. Economic principles applied to the interaction of economic events in the world food economy. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013). (Typically offered: Spring)

# Agricultural Education, Communications and Technology (AECT) 

George W. Wardlow<br>Head of the Department<br>E108 Agricultural Food and Life Sciences Building<br>479-575-2035

Agricultural Education, Communications and Technology Website (http:// aeed.uark.edu/)

The department of agricultural education, communications and technology offers a degree program with four concentrations that lead to a Bachelor of Science in Agriculture. Students may choose one of four areas of concentration, or, with adviser's approval, select courses from more than one concentration area.

- The Agricultural Education concentration is designed for students who wish to receive initial teacher licensure to teach agricultural science in public schools.
- The Agricultural Communications concentration is designed to produce graduates with both technical knowledge about the food and fiber industry and the communication skills needed to convey the story of agriculture to consumers, policy makers, and the public. Interpersonal and group communication, public relations, graphic design, electronic communication, communications campaign planning, and writing for the media are emphasized in this program.
- The Agricultural Systems Technology Management concentration is for students who are planning a professional career related to technical operations and management in the agricultural industry. Graduates assume positions of leadership and responsibility in such areas as agricultural services and sales, agricultural management, agricultural production systems, product service, product testing, and service management. The program focuses on preparing students as problem solvers in the application, management and/or marketing of agricultural technology.
- The Agricultural Leadership concentration incorporates interdisciplinary coursework that focuses on leadership and ethics in food and fiber systems, with courses offered from multiple disciplines. Interdisciplinary courses benefit students by offering different insights to problem solving, fostering collaboration with students from other majors, and reinforcing the importance of teamwork.

Students with this major are in constant demand due to the rapidly changing educational needs of the agricultural and natural resources industries. Graduates with this degree have a broad knowledge of agricultural disciplines. They are prepared as agricultural technology transfer specialists to enter a variety of careers in formal and nonformal teaching roles in either the public or private sector as agricultural educators, extension agents, industry-based trainers, information specialists, or technology-management specialists.

The department also offers programs for four minors: Agricultural Education, Agricultural Communications, Agricultural Systems Technology Management, and Agricultural Leadership.

## Requirements for a Major in Agricultural Education, Communication and Technology (AECT)

The state minimum core (p. 81) and discipline specific general education (p. 72) requirements:
(Course work that meets state minimum core requirements is in bold.)
University Perspectives 1
UNIV 1001 University Perspectives
Communications 6
Select English Core Courses
U.S. History or Government

Select U.S. History or Government Core Courses

## Mathematics

MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher excluding MATH 1313)

## Science

| BIOL 1543 |
| :--- |$\quad$| Principles of Biology (ACTS Equivalency = |
| :--- |
| \& BIOL 1541L |
| BIOL 1014 Lecture) |
| and Principles of Biology Laboratory (ACTS |
|  |
| Equivalency = BIOL 1014 Lab) |


| CHEM 1073 | Fundamentals of Chemistry (ACTS Equivalency |
| :--- | :--- |

\& CHEM 1071L= CHEM 1214 Lecture)
and Fundamentals of Chemistry Laboratory
(ACTS Equivalency = CHEM 1214 Lab)

Science or Math Elective (3 hours)

## Fine Arts/Humanities

Choose from 3 hours Fine Arts and 3 hours Humanities from State Minimum Core
Social Science
AGEC 1103 Principles of Agricultural Microeconomics or AGEC 21 Principles of Agricultural Macroeconomics
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)
Choose 3 hours Social Science from State Minimum Core
AECTBS Requirements
ASTM 1613 Fundamentals of Agricultural Systems Technology
ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers
AGED 3133 Instructional and Presentation Strategies
ACOM 3143 Communicating Agriculture to the Public
or ACOM 3148 sthors Communicating Agriculture to the Public
AGLE 3153 Leadership Development in Agriculture or AGLE 315Honors Leadership Development in Agriculture AGED 4003 Issues in Agriculture
Choose 3 hours from the following:**
AGED 475V Internship in Agricultural Education (3 hours) or ACOM 475thernship in Ag Communications
or AGLE 475Niternship in Ag Leadership
or ASTM 475lbxternship in Ag Systems
Choose 9 hours from the following:
ANSC 1033 Introductory Animal Sciences
ENSC 1003 Environmental Science
ENTO 1023 Insects, Science and Society
HORT 2003 Principles of Horticulture
POSC 2343 Poultry Production
FDSC 2603 The Science of Cooking
PLPA 3003 Principles of Plant Pathology
21-24 hours from concentration requirements (AGED, ACOM, 21-24
ASTM, AGLE)
Electives
Total Hours
**Internship choice should coincide with concentration declared
Requirements for a Major in Agricultural Education, Communication and Technology (AECT) with an Agricultural Communications (ACOM) Concentration
ACOM Concentration Requirements ( 21 plus 3 practicum hours) 24 JOUR 1033 Media Writing

| ACOM 2143 | Introduction to Agricultural Communications and <br> Leadership |
| :--- | :--- |
| ACOM 3243 | Ag Reporting and Feature Writing |
| ACOM 3943 | Professional Development in Agricultural <br> Communications and Leadership |
| ACOM 4143 | Electronic Communications in Agriculture |
| ACOM 4243 | Graphic Design in AFLS |
| ACOM 4343 | Communication Campaigns in Agriculture |
| ACOM 4543 | Ag Publications |

Total Hours

## Agricultural Education, Communication

 \& Technology B.S.A. with Agricultural Communications Concentration NineSemester Degree Program| First Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| UNIV 1001 University Perspectives | 1 |  |  |
| ASTM 1613 Fundamentals of Agricultural Systems Technology | 3 |  |  |
| Satisfies General Education Outcome 3.4: |  |  |  |
| BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) \& BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency $=\mathrm{BIOL}$ 1014 Lab) | 4 |  |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |  |
| Elective | 3 |  |  |
| ACOM 2143 Introduction to Agricultural Communications and Leadership |  | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |  |
| JOUR 1033 Media Writing |  | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103) (or higher) (Satisfies General Education Outcome 2.1) |  | 3 |  |
| ACOM 3143 Communicating Agriculture to the Public (Satisfies General Education Outcome 1.2) or ACOM 3143H Honors Communicating Agriculture to the Public |  | 3 |  |
| Year Total: | 14 | 15 |  |
| Second Year |  |  | Units |
|  | Fall | Spring | Summer |

[^1]3.3:

AGEC 1103 Principles of Agricultural
Microeconomics
or AGEC 2103 Principles of Agricultural Macroeconomics
ASTM 2903 Agricultural and Human 3
Environmental Sciences Applications of Microcomputers
Satisfies General Education Outcome 3.4:

CHEM 1073 Fundamentals of
Chemistry (ACTS Equivalency = CHEM
1214 Lecture)
\& CHEM 1071L Fundamentals
of Chemistry Laboratory (ACTS
Equivalency = CHEM 1214 Lab)
Fine Arts or Humanities State Minimum
Core Elective (Satisfies General
Education Outcome 3.1 or 3.2) ${ }^{1,2}$
AECTBS Core Elective
Satisfies General Education Outcome 4.2:

HIST 2003 History of the American
People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 2013 History of the American
People, 1877 to Present (ACTS
Equivalency = HIST 2123)
or PLSC 2003 American National
Government (ACTS Equivalency = PLSC 2003)
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies
General Education Outcome 3.3)
Electives 6
AECTBS Core Elective 3
Year Total: 16

| Third Year | Fall | Units <br> Spring <br> Summer |
| :--- | ---: | ---: |
| Fine Arts or Humanities State Minimum | 3 |  |
| Core Elective (Satisfies General |  |  |
| Education Outcome 3.1 or 3.2) |  |  |
| Elective | 6 |  |
| AECTBS Core Elective | 3 |  |
| ACOM 3243 Ag Reporting and Feature | 3 |  |



## Requirements for a Major in Agricultural Education, Communication and Technology (AECT)

The state minimum core (p. 81) and discipline specific general education (p. 72) requirements:
(Course work that meets state minimum core requirements is in bold.)

| University Perspectives |  |
| :---: | :---: |
| UNIV 1001 | University Perspectives |
| Communications |  |
| Select English Core Courses |  |
| U.S. History or Government |  |
| Select U.S. History or Government Core Courses |  |
| Mathematics |  |
| MATH 1203 | College Algebra (ACTS Equivalency $=$ MATH 1103) (or higher excluding MATH 1313) |
| Science |  |
| BIOL 1543 \& BIOL 1541L | Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) |
| CHEM 1073 <br> \& CHEM 1071L | Fundamentals of Chemistry (ACTS Equivalency L= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) |

Science or Math Elective (3 hours)
Fine Arts/Humanities
6
Choose from 3 hours Fine Arts and 3 hours Humanities from State Minimum Core
Social Science 9

AGEC 1103 Principles of Agricultural Microeconomics or AGEC 21 Principles of Agricultural Macroeconomics
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)
Choose 3 hours Social Science from State Minimum Core
AECTBS Requirements
ASTM 1613 Fundamentals of Agricultural Systems Technology
ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers
AGED 3133 Instructional and Presentation Strategies
ACOM 3143 Communicating Agriculture to the Public
or ACOM 3148bthors Communicating Agriculture to the Public
AGLE 3153 Leadership Development in Agriculture or AGLE 315Honors Leadership Development in Agriculture
AGED 4003 Issues in Agriculture
Choose 3 hours from the following:**
AGED 475V Internship in Agricultural Education (3 hours)
or ACOM 474hternship in Ag Communications
or AGLE 475Niternship in Ag Leadership
or ASTM 475lxternship in Ag Systems
Choose 9 hours from the following:
ANSC 1033 Introductory Animal Sciences
ENSC 1003 Environmental Science
ENTO 1023 Insects, Science and Society

| HORT 2003 | Principles of Horticulture |  |
| :--- | :--- | ---: |
| POSC 2343 | Poultry Production |  |
| FDSC 2603 | The Science of Cooking |  |
| PLPA 3003 | Principles of Plant Pathology |  |
| $\mathbf{2 1 - 2 4}$ hours from concentration requirements (AGED, ACOM, | $\mathbf{2 1 - 2 4}$ |  |
| ASTM, AGLE) | $\mathbf{2 7 - 3 0}$ |  |
| Electives | $\mathbf{1 2 0}$ |  |

**Internship choice should coincide with concentration declared

## Additional Requirements for the Agricultural Education Concentration

Complete an evaluation for internship. Students must also meet the following criteria to be cleared for the internship:

1. Obtain a " $C$ " or better in the following pre-education core courses: AGED 1123, CIED 3023/CIED 4023, and CIED 3033.
2. Obtain a " $C$ " or better in concentration education courses: AGED 3133, ACOM 3143, AGED 4213, AGED 4233, and AGED 4843L .
3. Complete and submit the online application to teacher education through the university-wide Office of Teacher Education and pay the Teacher Education Application Fee (http://catalog.uark.edu/undergraduatecatalog/feeandcosts/ othergeneralfees/). Apply to the Office of Teacher Education (https:// teacher-education.uark.edu/) by Jan. 15 prior to the fall semester of the junior year. For more information, contact the Teacher Education Office in GRAD 336. Complete degree with a cumulative GPA of 2.5 or higher. The degree must be posted to your University of Arkansas transcript at the Registrar's Office prior to certification. For more information, please contact the Office of Teacher Education in Peabody Hall (PEAH) 109.
4. Obtain departmental clearance for GPA requirements, course work requirements, an interview, and/or other requirements. Obtain clearance through an Arkansas Department of Education background check. Note: Another background check will be required prior to graduation in order to be eligible for licensure.
5. Student is aware that he/she is responsible for meeting enrollment requirements for any scholarships received and is responsible for enrolling in the proper number of hours to meet graduation requirements.

## Other Certification Requirements

A. Pass Pedagogy Assessment during Internship (Minimum: Average of 2.0 or better on each Danielson (TESS) Domain)
B. Subject Matter Test Agriculture

- Test Code 0700 — Minimum Score: 150
C. Criminal Background Check

AGED Concentration Requirements ( 21 plus 3 practicum hours)

| AGED 1123 | Foundations of Agricultural Education | 3 |
| :--- | :--- | :---: |
| AGED 3162 | Curriculum Development and Assessment <br> Techniques in AGED | 2 |
| AGED 3161L | Curriculum Development and Assessment <br> Techniques in Career and Technical Education <br> Laboratory | 1 |
| AGED 4213 | Teachers as Professionals | 3 |


| AGED 4233 | Program Development | 3 |
| :--- | :--- | ---: |
| AGED 475V | Internship in Agricultural Education (3 hours - <br> Criminal background check is required prior to <br> student internship) | 3 |
| CIED 3023 | Survey of Exceptionalities |  |
| or CIED 4023 | Teaching in Inclusive Secondary Settings | 3 |
| AGED 4843L | Methods in Agricultural Laboratories | $\mathbf{3}$ |
| CIED 3033 | Classroom Learning Theory | $\mathbf{3}$ |
| Total Hours |  | $\mathbf{2 4}$ |

## Agricultural Education, Communication \& Technology B.S.A. with Agricultural Education Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight Semester Degree Policy (p. 67) for university requirements of the program. (*See degree audit in UAConnect for complete course list.)

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| UNIV 1001 University Perspectives | 1 |  |
| AGED 1123 Foundations of Agricultural Education | 3 |  |
| ASTM 1613 Fundamentals of Agricultural Systems Technology | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Unless Exempt) (Satisfies General Education Outcome 1.1) | 3 |  |
| AECTBS Core Elective | 3 |  |
| Electives | 3 |  |
| Satisfies General Education Outcome 3.4: |  |  |
| BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory <br> (ACTS Equivalency = BIOL 1014 Lab) |  | 4 |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Unless Exempt) (Satisfies General Education Outcome 1.1) |  | 3 |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher) (Satisfies General Education Outcome 2.1) |  | 3 |
| PSYC 2003 General Psychology (ACTS <br> Equivalency = PSYC 1103) (Satisfies General <br> Education Outcome 3.3) |  | 3 |
| Electives |  | 3 |
| Year Total: | 16 | 16 |
| Second Year | Fall | Units Spring |
| Satisfies General Education Outcome 3.3: |  |  |
| AGEC 1103 Principles of Agricultural Microeconomics or AGEC 2103 Principles of Agricultural Macroeconomics | 3 |  |
| ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers | 3 |  |


| Satisfies General Education Outcome 3.4: |  |  |
| :---: | :---: | :---: |
| CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) \& CHEM 1071L Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) | 4 |  |
| Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,2}$ | 3 |  |
| Electives ${ }^{4}$ | 3 |  |
| ACOM 3143 Communicating Agriculture to the Public <br> or ACOM 3143H Honors Communicating Agriculture to the Public |  | 3 |
| Satisfies General Education Outcome 4.2: |  |  |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) or PLSC 2003 American National Government (ACTS Equivalency $=$ PLSC 2003) |  | 3 |
| AECTBS Core Elective |  | 3 |
| Science or Math Elective |  | 3 |
| Electives |  | 3 |
| Year Total: | 16 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| AGED 3133 Instructional and Presentation Strategies (Satisfies General Education Outcome 1.2) | 3 |  |
| AGLE 3153 Leadership Development in Agriculture or AGLE 3153H Honors Leadership Development in Agriculture | 3 |  |
| Social Science State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and $4.1)^{3}$ | 3 |  |
| Electives | 6 |  |
| CIED 3023 Survey of Exceptionalities or CIED 4023 Teaching in Inclusive Secondary Settings |  | 3 |
| AGED 3162 Curriculum Development and Assessment Techniques in AGED |  | 2 |
| Electives ${ }^{4}$ |  | 3 |
| AECTBS Core Elective |  | 3 |
| AGED 4233 Program Development |  | 3 |
| Year Total: | 15 | 14 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| CIED 3033 Classroom Learning Theory | 3 |  |
| AGED 4003 Issues in Agriculture (Satisfies General Education Outcome 5.1) | 3 |  |
| AGED 3161L Curriculum Development and Assessment Techniques in Career and Technical Education Laboratory | 1 |  |
| Electives ${ }^{4}$ | 6 |  |

Fine Arts or Humanities State Minimum Core 3 Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,2}$
AGED 4843L Methods in Agricultural Laboratories
AGED 475V Internship in Agricultural Education 6
(Satisfies General Education Outcome 6.1) or ACOM 475V Internship in Ag Communications or AGLE 475V Internship in Ag Leadership or ASTM 475V Internship in Ag Systems
3 AGED 4213 Teachers as Professionals
Year Total: 16

Total Units in Sequence:
${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
2 The Humanities Elective courses which satisfy General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or Intermediate-level world language (usually 2003-level).
${ }^{3}$ The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include:
ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{4}$ Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

## Requirements for a Major in Agricultural Education, Communication and Technology (AECT)

The state minimum core (p. 81) and discipline specific general education (p. 72) requirements:
(Course work that meets state minimum core requirements is in bold.)

| University Perspectives | $\mathbf{1}$ |
| :--- | :---: |
| UNIV $1001 \quad$ University Perspectives |  |
| Communications | $\mathbf{6}$ |
| $\quad$ Select English Core Courses | $\mathbf{3}$ |
| U.S. History or Government |  |
| $\quad$ Select U.S. History or Government Core Courses |  |
| Mathematics | $\mathbf{3}$ |

MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher excluding MATH 1313)

Science

BIOL 1543 Principles of Biology (ACTS Equivalency $=$
\& BIOL 1541L BIOL 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency \& CHEM 1071L= CHEM 1214 Lecture)
and Fundamentals of Chemistry Laboratory
(ACTS Equivalency = CHEM 1214 Lab)
Science or Math Elective (3 hours)
Fine Arts/Humanities
Choose from 3 hours Fine Arts and 3 hours Humanities from
Minimum Core
Social Science
AGEC 1103 Principles of Agricultural Microeconomics
or AGEC 21 Principles of Agricultural Macroeconomics

PSYC 2003 | General Psychology (ACTS Equivalency = |
| :--- |
|  |
| PSYC 1103) |

Choose 3 hours Social Science from State Minimum Core

| AECTBS Requirements |
| :--- |
| ASTM 1613 Fundamentals of Agricultural Systems Technology |
| ASTM 2903 |
|  |
| Agricultural and Human Environmental Sciences |
| Applications of Microcomputers |

21-24 hours from concentration requirements (AGED, ACOM, 21-24
ASTM, AGLE)
Electives 27-30

Total Hours 120

[^2]
# Requirements for a Major in Agricultural Education, Communication and Technology (AECT) with an Agricultural Leadership (AGLE) Concentration 

| AGLE Concentration Requirements (21 hours) | $\mathbf{2 1}$ |  |
| :---: | :--- | :--- |
| AGLE 2143 | Introduction to Agricultural Communications and <br> Leadership |  |
| AGLE 3943 | Professional Development in Agricultural <br> Communications and Leadership |  |
| AGLE 4153 | Survey of Leadership Theory in Agriculture |  |
| AGLE 4163 | Leadership Analysis Through Film |  |
| AGED 4443 | Principles of Technological Change |  |
| COMM 1313 | Public Speaking (ACTS Equivalency = SPCH <br> 1003) |  |
| AFLS 3993 | Professional Growth and Critical Career Skills |  |
| Total Hours |  | $\mathbf{2 1}$ |

## Agricultural Education, Communication \& Technology B.S.A. with Agricultural Leadership Concentration Nine-Semester Degree Program

| First Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| UNIV 1001 University Perspectives | 1 |  |  |
| ASTM 1613 Fundamentals of Agricultural Systems Technology | 3 |  |  |
| AGLE 2143 Introduction to Agricultural Communications and Leadership | 3 |  |  |
| Satisfies General Education Outcome 3.4: |  |  |  |
| BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) \& BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) | 4 |  |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |  |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) |  | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) |  | 3 |  |
| Satisfies General Education Outcome 4.2: |  |  |  |

HIST 2003 History of the American
People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 2013 History of the American
People, 1877 to Present (ACTS
Equivalency $=$ HIST 2123)
or PLSC 2003 American National
Government (ACTS Equivalency =
PLSC 2003)
Social Science Core Elective (Satisfies
General Education Outcomes 3.3 and
4.1) ${ }^{1}$

Year Total:
14

Second Year
AECTBS Core Elective
ASTM 2903 Agricultural and Human
Environmental Sciences Applications o
Microcomputers
Satisfies General Education Outcome
3.3. 3.3:

AGEC 1103 Principles of Agricultural
Microeconomics
or AGEC 2103 Principles of Agricultural
Macroeconomics
Satisfies General Education Outcome

## 3.4:

CHEM 1073 Fundamentals of

Core Elective (Satisfies General
Education Outcome 3.1 or 3.2$)^{2,3}$
AECTBS Core Elective
Satisfies General Education Outcome 1.2

ACOM 3143 Communicating Agriculture

## to the Public

or ACOM 3143H Honors
Communicating Agriculture to the Public
Fine Arts or Humanities State Minimum
Core Elective (Satisfies General
Education Outcome 3.1 or 3.2$)^{2,3}$
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies
General Education Outcome 3.3)
Science or Math Elective
Year Total:
Fall
3

Chemistry (ACTS Equivalency $=$ CHEM
1214 Lecture)
\& CHEM 1071L Fundamentals
of Chemistry Laboratory (ACTS
Equivalency = CHEM 1214 Lab)
Fine Arts or /Humanities State Minimum

Units
Spring Summer

| Third Year |  | Units <br> Sall | Spring |
| :--- | :---: | ---: | :--- |
| Summer |  |  |  |

MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C,
PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or Intermediate-level world language (usually 2003-level).
${ }^{3}$ The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include:
ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123,
HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813,
INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{4}$ Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

## Requirements for a Major in Agricultural Education, Communication and Technology (AECT)

The state minimum core (p. 81) and discipline specific general education (p. 72) requirements:
(Course work that meets state minimum core requirements is in bold.)
University Perspectives 1

UNIV 1001 University Perspectives
Communications
Select English Core Courses
U.S. History or Government

Select U.S. History or Government Core Courses

## Mathematics

MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher excluding MATH 1313)

Science
BIOL 1543 Principles of Biology (ACTS Equivalency =
\& BIOL 1541L BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency \& CHEM 1071L= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)
Science or Math Elective (3 hours)
Fine Arts/Humanities
6
Choose from 3 hours Fine Arts and 3 hours Humanities from State Minimum Core
Social Science
AGEC 1103 Principles of Agricultural Microeconomics or AGEC 21 Principles of Agricultural Macroeconomics
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)
Choose 3 hours Social Science from State Minimum Core
AECTBS Requirements
30
ASTM 1613 Fundamentals of Agricultural Systems Technology
ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers

| AGED 3133 | Instructional and Presentation Strategies |  |
| :---: | :---: | :---: |
| ACOM 3143 Communicating Agriculture to the Public or ACOM 3148 thors Communicating Agriculture to the Public |  |  |
| AGLE 3153 Leadership Development in Agriculture or AGLE 315Honors Leadership Development in Agriculture |  |  |
| AGED 4003 Issues in Agriculture |  |  |
| Choose 3 hours from the following:** |  |  |
| AGED 475V Internship in Agricultural Education (3 hours) or ACOM 475thernship in Ag Communications or AGLE 475Nikternship in Ag Leadership or ASTM 4751xternship in Ag Systems |  |  |
| Choose 9 hours from the following: |  |  |
| ANSC 1033 Introductory Animal Sciences |  |  |
| ENSC 1003 Environmental Science |  |  |
| ENTO 1023 Insects, Science and S |  |  |
| HORT 2003 Principles of Horticulture |  |  |
| POSC 2343 Poultry Production |  |  |
| FDSC 2603 The Science of Cooking |  |  |
| PLPA 3003 Principles of Plant Pathology |  |  |
| 21-24 hours from concentration requirements (AGED, ACOM, 21-24 ASTM, AGLE) |  |  |
| Electives 27-30 |  |  |
| Total Hours 120 |  |  |
| **Internship choice should coincide with concentration declared |  |  |
| Requirements for a Major in Agricultural Education, Communication and Technology (AECT) with an Agricultural Systems Technology Management (ASTM) Concentration <br> ASTM Concentration Requirements (21 hours) |  |  |
|  |  |  |
| ASTM 3102 Small Power Units/Turf Equipment |  |  |
| ASTM 3101L Small Power Units/Turf Equipment Laboratory |  |  |
| ASTM 3173 Electricity in Agriculture |  |  |
| ASTM 4203 Mechanized Systems Management |  |  |
| AGEC 2303 Introduction to Agribusiness |  |  |
| AGEC 3303 Food and Agricultural Marketing |  |  |
| AGEC 4303 Agribusiness Marketing Management |  |  |
| Choose 3 credits from: |  |  |
| ASTM 1611L Fundamentals of Agricultural Systems Technology Laboratory |  |  |
| ASTM 2123 | Metals and Welding |  |
| ASTM 3153 | Surveying in Agriculture and Forestry |  |
| ASTM 402V | Special Topics in Agricultural Mechanization |  |
| ASTM 4973 | Irrigation |  |
| ENSC 3603 | GIS for Environmental Science |  |
| GEOS 3543 | Geospatial Applications and Information Science |  |
| GEOS 4593 | Introduction to Global Positioning Systems and Global Navigation Satellite Systems |  |

Agricultural Education, Communication \& Technology B.S.A. with Agricultural Systems Technology Management Concentration
Nine-Semester Degree Program

| First Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| UNIV 1001 University Perspectives | 1 |  |  |
| ASTM 1613 Fundamentals of Agricultural Systems Technology | 3 |  |  |
| AECTBS Core Elective | 3 |  |  |
| Satisfies General Education Outcome 3.4: |  |  |  |
| BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) \& BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) | 4 |  |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |  |
| Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,2}$ |  | 3 |  |
| Satisfies General Education Outcome 4.2: |  |  |  |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) (or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123) (Sp, $\mathrm{Su}, \mathrm{Fa}$ ) <br> or PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) |  | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher) (Satisfies General Education Outcome 2.1) |  | 3 |  |
| PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3) |  | 3 |  |
| Year Total: | 14 | 15 |  |
| Second Year |  |  | Units |
|  | Fall | Spring | Summer |

Satisfies General Education Outcome 3.3:

AGEC 1103 Principles of Agricultural Microeconomics
or AGEC 2103 Principles of Agricultural Macroeconomics

ASTM 2903 Agricultural and Human
Environmental Sciences Applications of Microcomputers
Satisfies General Education Outcome 3.4:

CHEM 1073 Fundamentals of
Chemistry (ACTS Equivalency $=$ CHEM
1214 Lecture)
\& CHEM 1071L Fundamentals
of Chemistry Laboratory (ACTS
Equivalency = CHEM 1214 Lab)
AECTBS Core Elective
General Elective 3
AGEC 2303 Introduction to
Agribusiness
Satisfies General Education Outcome
1.2:

ACOM 3143 Communicating Agriculture 3
to the Public
or ACOM 3143H Honors
Communicating Agriculture to the Public
AECTBS Core Elective
Math/Science Elective 3
General Elective 3
Year Total: 16

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: | ---: |
| Summer |  |  |

Presentation Strategies (Satisfies
General Education Outcome 1.2)
General Elective $^{4}$
Social Science State Minimum Core 3
Elective (Satisfies General Education Outcome 3.3 and 4.1) ${ }^{3}$
Fine Arts or Humanities State Minimum 3
Core Elective (Satisfies General
Education Outcomes 3.1 or 3.2$)^{1,2}$
AGEC 3303 Food and Agricultural
Marketing
AGLE 3153 Leadership Development in
Agriculture
or AGLE 3153H Honors Leadership
Development in Agriculture
ASTM 3102 Small Power Units/Turf
Equipment
\& ASTM 3101L Small Power Units/Turf
Equipment Laboratory
ASTM 3173 Electricity in Agriculture
General Elective ${ }^{4} 3$

ASTM 475V Internship in Ag Systems or AGED 475V Internship in Agricultural Education
or ACOM 475V Internship in Ag
Communications
or AGLE 475V Internship in Ag
Leadership
(AGED 475V Satisfies General
Education Outcome 6.1)
Year Total:
15
15
3

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: | ---: |
| Summer |  |  |

## Total Units in Sequence:

${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H,
MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
2 The Humanities Elective courses which satisfy General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233,
DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123,
HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013,
MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C,
PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or Intermediate-level world language (usually 2003-level).
${ }^{3}$ The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include:
ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123,
HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813,
INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{4}$ Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

## Minor in Agricultural, Food and Life Sciences Communications (ACOM-M)

The Agricultural, Food and Life Sciences Communications Minor will consist of 18 hours to include the following:

| ACOM 2143 | Introduction to Agricultural Communications and <br> Leadership | 3 |
| :--- | :--- | :--- |
| ACOM 3143 | Communicating Agriculture to the Public |  |
| or ACOM 3143 Honors Communicating Agriculture to the Public |  |  |$\quad 3$

## Minor in Agricultural Education (AGED-M)

The Agricultural Education Minor will consist of 20 hours to include the following:

| AGED 3162 | Curriculum Development and Assessment <br> Techniques in AGED | 2 |
| :--- | :--- | ---: |
| AGED 3161L | Curriculum Development and Assessment <br> Techniques in Career and Technical Education <br> Laboratory | 1 |
| AGED 4233 | Program Development | 3 |
| AGED 4213 | Teachers as Professionals | 3 |
| CIED 3033 | Classroom Learning Theory | 3 |
| CIED 4023 | Teaching in Inclusive Secondary Settings | 3 |
| AGED 475V | Internship in Agricultural Education | 2 |
| AGED 4843L | Methods in Agricultural Laboratories | 3 |
| Total Hours |  | $\mathbf{2 0}$ |

Teacher Education Requirements: To gain teacher certification, students must apply during the Fall semester of their sophomore year. We recognize not all programs can follow this timeline, but applying early will allow ample time to complete the requirements for clearance through Teacher Education.

## Minor in Agricultural Leadership (AGLE-M)

The Agricultural Leadership Minor will consist of 18 semester hours to include:

| AGLE 2143 | Introduction to Agricultural Communications and <br> Leadership | 3 |
| :--- | :--- | :--- |
| AGLE 3153 | Leadership Development in Agriculture |  |

Select 9 hours from the following:
AGEC 3313 Agribusiness Sales
AGLE 4163 Leadership Analysis Through Film
AGED 3133 Instructional and Presentation Strategies

| AGLE 3943 | Professional Development in Agricultural <br> Communications and Leadership |
| :--- | :--- |
| AGED 4443 | Principles of Technological Change |
| EXED 4183 |  |

A student planning to minor in Agricultural Leadership should contact the program adviser for consultation and more detailed information.

## Minor in Agricultural Systems Technology Management (ASTM-M)

The Agricultural Systems Technology Management Minor will consist of 18 hours to include the following:

| ASTM 1613 | Fundamentals of Agricultural Systems Technology | 3 |
| :---: | :---: | :---: |
| ASTM 2903 | Agricultural and Human Environmental Sciences Applications of Microcomputers | 3 |
| Select 12 hours from the following: |  | 12 |
| ASTM 1611L | Fundamentals of Agricultural Systems Technology Laboratory |  |
| ASTM 2123 | Metals and Welding |  |
| ASTM 3153 | Surveying in Agriculture and Forestry |  |
| ASTM 3102 <br> \& ASTM 3101 | Small Power Units/Turf Equipment and Small Power Units/Turf Equipment Laboratory |  |
| ASTM 3173 | Electricity in Agriculture |  |
| ASTM 4203 | Mechanized Systems Management |  |
| ASTM 4973 | Irrigation |  |
| ENSC 3603 | GIS for Environmental Science |  |

## Total Hours

A student planning to minor in Agricultural Systems Technology Management must notify the program adviser for consultation and more detailed information.

## Faculty

Cox, Casandra Kay, M.S., B.S. (University of Arkansas), Instructor, 2003.
Doss, Will, Ph.D. (Texas Tech University), M.S., B.S., (Texas A\&M University), Assistant Professor, 2022.
Estepp, Chris, Ph.D. (University of Florida), M.Ed., B.S. (Texas A\&M University), Associate Professor, 2019.
Estes, Hanna, M.S., B.S. (University of Arkansas), Instructor, 2014. Estes, Stuart, M.S., B.S. (University of Arkansas), Instructor, 2021. Graham, Donna Lucas, Ph.D. (University of Maryland-College Park), M.Ed., B.S. (University of Arkansas), University Professor, 1985, 2017.

Johnson, Donald M., Ph.D. (University of Missouri-Columbia), M.A., B.S. (Western Kentucky University), University Professor, 1993, 2021.

Koparan, Cengiz, Ph.D., M.S. (Clemson University), M.B.M. (Cambridge College), B.S. (Ankara University), Assistant Professor, 2023.

Miller, Jefferson Davis, Ph.D., M.A. (Oklahoma State University), B.A. (Northeastern State University), Professor, 2001, 2012.
Rice, Lanny, M.S. (University of Arkansas), Instructor, 2012.
Rucker, Kathryn Jill, Ph.D., M.B.A., B.S. (Oklahoma State University), Associate Professor, 2013, 2018.

Vehige, Grace, M.S. (Texas Tech University), B.S. (University of Arkansas), Instructor, 2023.
Wardlow, George W., Ph.D. (The Ohio State University), M.Ed., B.S. (University of Missouri-Columbia), Professor, 1992, 1998.

Whitehead, Isabel M., M.S. (University of Arkansas), B.S. (Sul Ross State University), Instructor, 2018.

## Agricultural Communications Courses

ACOM 2143. Introduction to Agricultural Communications and Leadership. 3 Hours.
A survey of agricultural communications and leadership theories and practices for students in the ACOM and AGLE concentrations and minors and anyone seeking a basic understanding of these disciplines. The course provides an overview of the history, philosophy, and theories of the disciplines and introduces students to career options, skills and practical competencies required of agricultural communicators and leaders. (Typically offered: Fall)
This course is cross-listed with AGLE 2143.

## ACOM 3143. Communicating Agriculture to the Public. 3 Hours.

An overview of public communications theory and practices in the agricultural, food, and life sciences with a particular focus on technical writing, public relations and media relations writing, campaign planning, public speaking, and various mass media communication techniques, including print, broadcast, electronic, and social media. (Typically offered: Fall, Spring and Summer)
ACOM 3143H. Honors Communicating Agriculture to the Public. 3 Hours. An overview of public communications theory and practices in the agricultural, food, and life sciences with a particular focus on technical writing, public relations and media relations writing, campaign planning, public speaking, and various mass media communication techniques, including print, broadcast, electronic, and social media. Prerequisite: Honors standing. (Typically offered: Fall, Spring and Summer) This course is equivalent to ACOM 3143.

ACOM 3243. Ag Reporting and Feature Writing. 3 Hours.
This course will provide students an exposure to writing, interviewing, and editing news on agricultural issues in agricultural industry publications. Students will gain practical experience with journalistic interviewing, news writing, feature writing, digital photography, and writing for broadcast on agricultural issues. This course is designed for students with at least six hours of upper division courses. Pre- or Corequisite: JOUR 1033 and lab component. (Typically offered: Fall Odd Years)

ACOM 3943. Professional Development in Agricultural Communications and Leadership. 3 Hours.
Overview of professional and technical skills needed to succeed in internships and jobs in the field of agricultural communications. (Typically offered: Fall Even Years) This course is cross-listed with AGLE 3943.

ACOM 400V. Special Problems in Agricultural Communications. 1-6 Hour. Individual study or research for advanced undergraduates in the field of agricultural communication. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AGED 400V, AGLE 400V.
ACOM 401V. Special Topics. 1-4 Hour.
Studies of selected topics in agricultural communications not covered in other courses. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

ACOM 4143. Electronic Communications in Agriculture. 3 Hours.
An overview of communication technology in the agricultural, food and life sciences. (Typically offered: Spring Even Years)

ACOM 4243. Graphic Design in AFLS. 3 Hours.
This course provides students with graphic design and software skills specific to industries in Agriculture, Food, and Life Sciences. Students will learn to use industry-standard software (InDesign, Photoshop, Illustrator, Microsoft Excel, etc.) to prepare text and graphics and package them for use in print production. Prerequisite: ASTM 2903 or ISYS 1123 or equivalent. (Typically offered: Fall, Spring and Summer)

## ACOM 4343. Communication Campaigns in Agriculture. 3 Hours.

Students will develop understanding of the principles, practices and applications of social marketing, integrated marketing communications, advertising and public relations as they pertain to developing communication campaign strategies for the agricultural industry. Students will develop a communication campaign for an agricultural company and/or entity focused on a specific product or service. Prerequisite: Junior standing or higher, ACOM 4243, ACOM 3243, ACOM 3143, and (ACOM 2143 or AGLE 2143), or instructor permission. (Typically offered: Spring Odd Years)

## ACOM 4543. Ag Publications. 3 Hours.

Students produce a magazine through classroom study mirroring a professional magazine staff and are provided an opportunity for their writing, advertisements, photographs and artwork to be published in the magazine. By using computer applications, students integrate various skills including writing, editing and layout in agricultural publications. Prerequisite: JOUR 1033. (Typically offered: Spring Even Years)

## ACOM 4643. Agricultural Video Production. 3 Hours.

The goal of this course is for students to develop a practical understanding of video production with an emphasis on short-form videos commonly used in education and marketing in the agricultural, food and life sciences industry. The course content covers both theory and practical application and will include training with industrystandard video equipment and editing software. (Typically offered: Spring Even Years)

## ACOM 475V. Internship in Ag Communications. 1-6 Hour.

A supervised practical work experience in ag communications which is designed to give the student an insight into the role of ag communications employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit. This course is cross-listed with AGLE 475V, ASTM 475V, EXED 475V.

## Agricultural Education Courses

AGED 1123. Foundations of Agricultural Education. 3 Hours.
A preparatory course evaluating the historical foundations of agricultural education with an introduction to the psychological, sociological and philosophical foundations of education. This course will encourage reflective practice through understanding of educational trends, classroom environment creation and utilization, and effective program planning. (Typically offered: Fall)

AGED 3111. Student Management. 1 Hour.
To guide students in the development of realistic, proactive classroom management strategies that establish a safe culture of student learning and academic success. Prerequisite: Instructor Consent. (Typically offered: Spring)

## AGED 3133. Instructional and Presentation Strategies. 3 Hours.

Methods and techniques in teaching agriculture at the secondary level. Lecture/ laboratory 4 hours per week. Corequisite: Lab component. (Typically offered: Spring)

AGED 3161L. Curriculum Development and Assessment Techniques in Career and Technical Education Laboratory. 1 Hour.

To supply students with opportunities to apply skills in creating curricula, lesson plans, and assessment strategies for courses in career and technical education. Materials created as a result of this course will apply principles learned in AGED 3162, and will align with anticipated courses to be taught by the student during his/her teaching internship. Pre- or Corequisite: AGED 3162. (Typically offered: Fall)

AGED 3162. Curriculum Development and Assessment Techniques in AGED. 2 Hours.
To supply students with the necessary information and skills to select and apply appropriate teaching techniques, curricula, resources, and assessment strategies when designing a course in career and technical education. (Typically offered: Fall)

AGED 4003. Issues in Agriculture. 3 Hours.
Lecture and discussion on local, regional, national and international issues related to agricultural policy, ethics, environment, society, and science. Designed for students with at least six hours of upper division agricultural science courses. Prerequisite: Junior standing. (Typically offered: Fall)

AGED 400V. Special Problems in Agricultural and Extension Education. 1-6 Hour.

Individual study or research for advanced undergraduates in the field of agricultural and extension education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AGLE 400V, ACOM 400V.

## AGED 401V. Special Topics. 1-3 Hour.

Studies of selected topics in agricultural or extension education not covered in other courses. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

## AGED 4113. Undergraduate Researchers Improving Student Experience. 3

 Hours.To engage students in the social sciences in action research that serves to solve a problem or answer a question within the student's academic field through scientific inquiry. All students will work with professionals, commonly outside of the university, within their discipline to conduct their action research in order to solve a problem experienced by that professional. Students may work in teams or individually to complete the overall purpose of the course. (Typically offered: Spring)

AGED 4213. Teachers as Professionals. 3 Hours.
To expose students to the roles and responsibilities of professional teachers. Students will understand the characteristics common to professionals and apply these to the teaching setting. Real-world examples of "grey-area" situations will allow students to evaluate issues holistically and determine appropriate solutions following the ethical and professional guidelines of the teaching discipline. This course will also guide students in the development of realistic, proactive classroom management strategies that establish a safe culture of student learning and academic success, a major component of teacher professionalism. Additionally, students will prepare resumes and engage in mock interviews to enhance their professional dispositions as they consider employment opportunities. Prerequisite: Instructor consent. (Typically offered: Spring)

AGED 4233. Program Development. 3 Hours.
Teachers of agricultural education need an understanding of the skills needed to successfully manage leadership and experiential learning components of the agricultural education model. This course is designed to teach principles and concepts of leadership, program organization, youth organization management, supervised agricultural experience, and advisory committees. This course is a portion of pre-professional studies required for certification in agricultural education. Prerequisite: AGED 3133 and instructor consent. (Typically offered: Spring)

## AGED 4443. Principles of Technological Change. 3 Hours.

This course introduces a structured approach for dealing with the organizational and human aspects of technology transition, including the key concepts of resistance and change management, organizational change, communications, and processes by which professional change agents influence the introduction, adoption, and diffusion of technological change. This course may be offered as a web-based course. Prerequisite: Junior standing. (Typically offered: Fall Odd Years)

## AGED 475V. Internship in Agricultural Education. 1-6 Hour.

Scheduled practical field experiences under the supervision of a professional practitioner in off-campus secondary school systems. Emphasis includes classroom preparation, teaching, and student evaluation. Successful completion of a criminal background check required before a student can begin internship. Prerequisite: Admission into Clinical Practice. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## AGED 4843L. Methods in Agricultural Laboratories. 3 Hours.

Methods and management techniques in all types of agricultural laboratories that may be in a secondary agricultural science program. Emphasis on management of students and facilities, equipment, and materials. Laboratory 6 hours per week. (Typically offered: Spring)

## Agricultural Leadership Courses

AGLE 2143. Introduction to Agricultural Communications and Leadership. 3 Hours.
A survey of agricultural communications and leadership theories and practices for students in the ACOM and AGLE concentrations and minors and anyone seeking a basic understanding of these disciplines. The course provides an overview of the history, philosophy, and theories of the disciplines and introduces students to career options, skills and practical competencies required of agricultural communicators and leaders. (Typically offered: Fall)
This course is cross-listed with ACOM 2143.

## AGLE 3153. Leadership Development in Agriculture. 3 Hours.

Identification of styles and roles of leadership; development of leadership techniques and skills required in working with organizations; dynamics of group action; methods of resolving conflict; ethical considerations for leaders; and personal skills development. (Typically offered: Fall, Spring and Summer)

## AGLE 3153H. Honors Leadership Development in Agriculture. 3 Hours.

Identification of styles and roles of leadership; development of leadership techniques and skills required in working with organizations; dynamics of group action; methods of resolving conflict; ethical considerations for leaders; and personal skills development. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to AGLE 3153.

## AGLE 3943. Professional Development in Agricultural Communications and

 Leadership. 3 Hours.Overview of professional and technical skills needed to succeed in internships and jobs in the field of agricultural communications. (Typically offered: Fall Even Years) This course is cross-listed with ACOM 3943.

AGLE 400V. Special Problems in Agricultural Leadership. 1-6 Hour. Individual study or research for advanced undergraduates in the field of agricultural and extension education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AGED 400V, ACOM 400V.

## AGLE 401V. Special Topics. 1-4 Hour.

Studies of selected topics in agricultural or extension education not covered in other courses. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

## AGLE 4153. Survey of Leadership Theory in Agriculture. 3 Hours.

An interdisciplinary analysis of current issues in the practice of leadership in a contemporary and changing society, particularly as they affect agricultural organizations and issues. Discussions of leadership theory, roles of leaders, skills for effective leadership, diversity issues, and followership will challenge students to think critically about leadership, enhance personal leadership performance and potential, and prepare for or expand leadership roles, and to become innovative and productive in dealing with challenges facing agricultural organizations today. Prerequisite: AGLE 3153. (Typically offered: Fall)

AGLE 4163. Leadership Analysis Through Film. 3 Hours.
Clemens (1999) stated, "Films are a catalyst." They make you laugh, cry, cheer, and think. Flaum (2002) stated leadership is best learned in the leadership moment. Moreover, the principles of Andragogy advocate adult learners best learning when there is a practical application of the learning subject. Therefore, this course builds upon the study of leadership theory by allowing students to analyze, reflect, synthesize, and apply leadership theories, models and concepts in the context of film. The course materials encourage students to reflect, synthesize, analyze, and apply the information learned from major leadership theories and apply them to various scenarios and situations demonstrated in selected films. Prerequisite: AGLE 3153 or AGLE 4153 or graduate standing or instructor consent. (Typically offered: Spring and Summer)

## AGLE 475V. Internship in Ag Leadership. 1-6 Hour.

A supervised practical work experience in Ag Leadership which is designed to give the student an insight into the role of ag leadership employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with ACOM 475V, ASTM 475V, EXED 475V.

## Agricultural Systems Technology Management Courses

ASTM 1611L. Fundamentals of Agricultural Systems Technology Laboratory. 1 Hour.
Study of basic mathematical and physical science concepts important in the mechanization of agriculture. Laboratory required for agricultural education, communication and technology majors enrolled in ASTM 1613, optional for others enrolled in ASTM 1613. Corequisite: ASTM 1613. (Typically offered: Fall)

ASTM 1613. Fundamentals of Agricultural Systems Technology. 3 Hours. Introduction to basic physical concepts important in agricultural technical systems: applied mechanics, power and machinery management, structures and electrification, and soil and water conservation. Lecture 3 hours per week. (Typically offered: Fall)
ASTM 2123. Metals and Welding. 3 Hours.
An introduction to agricultural mechanics shop work to include hot and cold metal work, arc welding, and gas welding and cutting. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. (Typically offered: Fall and Spring)

## ASTM 2903. Agricultural and Human Environmental Sciences Applications of Microcomputers. 3 Hours.

Lecture and laboratory assignments covering the contemporary use of microcomputers in agricultural, food and life sciences. Emphasis placed on learning to use selected, appropriate Microsoft (Windows, Word, Excel, PowerPoint and Access), email/Internet, and collaboration software packages. (Typically offered: Fall, Spring and Summer)

## ASTM 3101L. Small Power Units/Turf Equipment Laboratory. 1 Hour.

Testing, evaluation, and maintenance of engines, hydrostatic power transmission systems, and equipment commonly used in the turf and landscaping industries. Corequisite: ASTM 3102. Prerequisite: MATH 1203 or higher. (Typically offered: Spring)
ASTM 3102. Small Power Units/Turf Equipment. 2 Hours.
Principles of operation, adjustment, repair, maintenance, and trouble shooting of small air-cooled engines and power units, including various engine systems, service and maintenance of turf equipment and machinery. Lecture 2 hours per week. Corequisite: ASTM 3101L. Prerequisite: MATH 1203 or higher. (Typically offered: Spring)

ASTM 3153. Surveying in Agriculture and Forestry. 3 Hours.
Techniques and procedures normally used in determining areas and characterizing the topography of agricultural and forest lands. Includes basic concepts of surveying; use and care of level, transit, distance measuring equipment; topographic mapping and public land surveys. (Typically offered: Fall)

ASTM 3173. Electricity in Agriculture. 3 Hours.
Principles of electricity; wiring of home, farmstead and other agricultural structures; selection of electric motors and their care and application in the broad field of agriculture; lighting and special uses of electricity such as heating and electrical controls. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)

## ASTM 400V. Special Problems. 1-6 Hour.

Individual research or study in electrification, irrigation, farm power, machinery, or buildings. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

ASTM 402V. Special Topics in Agricultural Mechanization. 1-4 Hour.
Topics not covered in other courses or a more intensive study of special topics in agricultural mechanization. (Typically offered: Irregular) May be repeated for degree credit.

## ASTM 4203. Mechanized Systems Management. 3 Hours.

Selection, sizing, and operating principles of agricultural machinery systems, including power sources. Cost analysis and computer techniques applied to planning and management of mechanized systems. Corequisite: Lab component. Prerequisite: MATH 1203 or higher. (Typically offered: Fall Even Years)

## ASTM 475V. Internship in Ag Systems. 1-6 Hour.

A supervised practical work experience in Ag Systems Technology Management which is designed to give the student an insight into the role of ag systems employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with ACOM 475V, AGLE 475V, EXED 475V.

## ASTM 4973. Irrigation. 3 Hours.

Methods of applying supplemental water to soils to supply moisture essential for plant growth, sources of water, measurement of irrigation water, pumps, conveyance structure, economics, and irrigation for special crops. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)

## Extension Education Courses

## EXED 475V. Internship in Extension. 1-6 Hour.

A supervised practical work experience in Cooperative Extension which is designed to give the student an insight into the role of Extension employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with ACOM 475 V , AGLE 475 V , ASTM 475 V .

## Animal Science (ANSC)

Michael L. Looper
Head of the Department
B114 Agricultural, Food, and Life Sciences Building
479-575-4351
Animal Science Website (http://animal-science.uark.edu/)
The animal science major offers three areas of concentration designed to provide the scientific and technical education to prepare students for positions of leadership and responsibility. Students gain valuable experience pertaining to the production of beef and dairy cattle, swine, horses, sheep, and companion animals. In addition, extensive study is
offered in the specialized areas of animal health, breeding and genetics, meat science, nutrition, and physiology.

Students majoring in animal science are prepared for a variety of careers. Pre-veterinary, pre-medical, and pre-professional course requirements may be fulfilled while meeting degree requirements. Specific career opportunities include positions and services related to the production, merchandising, processing and distribution of meat, milk, and related products. Additional opportunities include field persons, farm and herd managers, and other agribusiness-related positions. With additional academic training, animal science majors may become extension livestock specialists, nutritionists, geneticists, and physiologists.

The Animal Enterprise Concentration is a science-based degree program designed for students desiring a broader general background in animal science and offers students the greatest degree of flexibility in adapting their degree program to a wide variety of career paths. It offers a larger list of elective classes and opportunity to minor in other disciplines.

The Pre-Professional Science Concentration is designed primarily for students who intend to compete for admission to professional schools, advanced post-graduate degree programs, or other career paths that require a strong background and understanding of basic and applied sciences.

The Equine Systems Concentration is designed for students who desire a sound science-based background in Animal Science, but desire a more intense study of equine management and equine science.

Students should consult an animal science adviser for specific course selections in the elective areas. With appropriate advising, students have an opportunity to complete at least one minor within the 120-hour degree program.

## Requirements for B.S.A. in Animal Science with Animal Enterprise Concentration <br> Requirements for a Major in Animal Science

State minimum core (p.81) and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)
University Requirements
UNIV $1001 \quad$ University Perspectives
Communications

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) |
| :--- | :--- |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) |
| Communication Intensive Electives (6 hrs) (See student degree |  |
| audit for approved course list) COMM 1313 is required for most |  |
| Schools of Veterinary Medicine; Recommend AGED 3143, |  |
| AGED 4003, or COMM 1313 to fulfill Learning Outcome 1.2. |  |
| Recommend AGED 4003 or COMM 1313 to fulfill Learning |  |
| Outcome 5.1. |  |

## U.S. History or Government

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201'History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)
or PLSC 200American National Government (ACTS Equivalency = PLSC 2003)

| MATH 1203 | $\begin{aligned} & \text { College Algebra (ACTS Equivalency = MATH } \\ & \text { 1103) } \end{aligned}$ |  |
| :---: | :---: | :---: |
| Biological Scien | S | 8 |
| BIOL 1543 Principles of Biology (ACTS Equivalency = \& BIOL 1541L BIOL 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) |  |  |
| BIOL 2013 General Microbiology (ACTS Equivalency $=\mathrm{BIOL}$ <br> \& BIOL 2011L 2004 Lecture) <br> and General Microbiology Laboratory (ACTS <br> Equivalency = BIOL 2004 Lab) <br> or ANSC 241ßomestic Animal Microbiology <br> \& ANSC 241 abd Domestic Animal Microbiology Laboratory |  |  |
| Chemical and $P$ | sical Sciences | 8 |
| CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency <br> \& CHEM 1071L= CHEM 1214 Lecture) <br> and Fundamentals of Chemistry Laboratory <br> (ACTS Equivalency = CHEM 1214 Lab) <br> or CHEM 110Bniversity Chemistry I (ACTS Equivalency = CHEM \& CHEM 11014414 Lecture) <br> and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) |  |  |
| Select 4 hours from the following: |  |  |
| CHEM 1123 <br> \& CHEM 112 | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |  |
| CHEM 2613 <br> \& CHEM 2611L | Organic Physiological Chemistry (ACTS <br> Equivalency = CHEM 1224 Lecture) <br> and Organic Physiological Chemistry Laboratory <br> (ACTS Equivalency = CHEM 1224 Lab) |  |
| CHEM 3603 \& CHEM 360 | Organic Chemistry I Land Organic Chemistry I Laboratory |  |
| ENTO 1023 <br> \& ENTO 1021L | Insects, Science and Society and Insects, Science and Society Lab |  |
| ENSC 1003 <br> \& ENSC 1001 | Environmental Science Land Environmental Science Laboratory |  |
| PHYS 2013 <br> \& PHYS 2011L | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` |  |
| Fine Arts and H | umanities | 6 |
| Select 3 hours Minimum Core | Fine Arts and 3 hours Humanities from State (see student degree audit for course list). |  |
| Social Sciences |  | 9 |
| Select 9 hours (see student de | Social Sciences courses from State Minimum Core egree audit for course list). |  |
| Animal Science Core Requirements (31 hours) |  |  |
| ANSC 1033 | Introductory Animal Sciences | 3 |
| ANSC 1781 | Career Preparation and Development |  |
| ANSC 2113 <br> \& ANSC 2111L | Introduction to Animal Evaluation and Handling and Introduction To Animal Evaluation and Handling Lab | 4 |
| ANSC 3123 or ANSC 3133 | Principles of Genetics <br> Animal Breeding and Genetics | 3 |
| ANSC 3143 <br> \& ANSC 3141L | Principles of Animal Nutrition and Animal Nutrition Laboratory | 4 |

ANSC 3213 Behavior of Domestic Animals 3
ANSC 3033 Animal Physiology 3
ANSC 3433 Fundamentals of Reproductive Physiology 3
ANSC 4993 Animal Science Capstone 3
Select 4 hours from the following: 4
ANSC 4252 Cow-Calf Management
ANSC 4262 Swine Production
ANSC 4272 Sheep Production
ANSC 4282 Horse Production
ANSC 4452 Milk Production
ANSC 4482 Companion Animal Management
ANSC 4652 Stocker-Feedlot Cattle Management
ANSC 4662 Comparative Studies in Panamanian and US Agricultural Practices
$\begin{array}{ll}\text { ANSC 410V } & \begin{array}{l}\text { Special Topics in Animal Sciences ((Study Abroad } \\ \text { to New Zealand or Australia)) }\end{array}\end{array}$

## Concentration Requirements

20-21
General Electives - Students may need to take up to 12 hours of 18-19 additional 3000 or above level courses to fulfill the 40 hour upper division requirements.
Total Hours

## Requirements for Animal Enterprise Concentration

## Animal Enterprise (21 hours)

ANSC 3072 Equine Selection and Evaluation ((ANSC 3761L - 2 Ranch Horse Randing must be taken twice to fulfill this requirement))
or ANSC 3282 Livestock Judging and Selection
or ANSC 3761LRanch Horse Riding
ANSC 4163 Companion Animal Nutrition 3
or ANSC 4553 Forage-Ruminant Relations
AGEC 3303 Food and Agricultural Marketing 3
or ANSC 3723 Horse and Livestock Merchandising
ANSC 2333 Introduction to Animal Health 3
or ANSC 3003 Applied Animal Parasitology
or ANSC 3013 Parasitisms of Domesticated Non-Herbivores
or ANSC 3333 Diseases of Livestock
or ANSC 3613 Meat Science
Select 4 hours from the following 4
ANSC 4252 Cow-Calf Management
ANSC 4262 Swine Production
ANSC 4272 Sheep Production
ANSC 4282 Horse Production
ANSC 4452 Milk Production
ANSC 4482 Companion Animal Management
ANSC 4652 Stocker-Feedlot Cattle Management
ANSC 4662 Comparative Studies in Panamanian and US Agricultural Practices
ANSC 410V Special Topics in Animal Sciences ((Study Abroad to New Zealand or Australia))
Select 6 hours from the following:

| AGEC 2143 | Agribusiness Financial Records |
| :--- | :--- |
| AGEC 3403 | Farm Business Management |
| CSES 1203 | Introduction to Plant Sciences |
| ASTM 2903 | Agricultural and Human Environmental Sciences <br> Applications of Microcomputers |
| FDSC 2523 | Sanitation and Safety in Food Processing <br> Operations |

Total Hours

## Animal Science B.S.A. with Animal Enterprise Concentration

## Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight Semester Degree Policy (p. 67) for university requirements of the program. (*See degree audit in UAConnect for complete course list.)

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| UNIV 1001 University Perspectives | 1 |  |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)
ANSC 1033 Introductory Animal Sciences
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
(Satisfies General Education Outcome 3.4)
MATH 1203 College Algebra (ACTS Equivalency
3
= MATH 1103) (Satisfies General Education Outcome 2.1)
ANSC 1781 Career Preparation and Development
1
CHEM 1073 Fundamentals of Chemistry (ACTS
Equivalency = CHEM 1214 Lecture)
\& CHEM 1071L Fundamentals of Chemistry
Laboratory (ACTS Equivalency = CHEM 1214 Lab)
(Satisfies General Education Outcome 3.4)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1)
ANSC 2113 Introduction to Animal Evaluation and Handling
\& ANSC 2111L Introduction To Animal Evaluation
and Handling Lab
General Elective
Fine Arts or Humanities State Minimum Core
Elective (Satisfies General Education Outcome 3.1
or $3.2 \& 5.1)^{2,3}$
Year Total:
15

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| BIOL 2013 General Microbiology (ACTS | 4 |  |
| Equivalency = BIOL 2004 Lecture) |  |  |
| \& BIOL 2011L General Microbiology Laboratory |  |  |
| (ACTS Equivalency = BIOL 2004 Lab) |  |  |
| or ANSC 2413 and ANSC 2411L |  |  |
| Choose 1-3 hours from the following: | $1-3$ |  |


| Third Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| General Elective | 3 |  |
| ANSC 3433 Fundamentals of Reproductive Physiology | 3 |  |
| ANSC 3143 Principles of Animal Nutrition \& ANSC 3141L Animal Nutrition Laboratory | 4 |  |
| ANSC 3123 Principles of Genetics (OR ANET Concentration Elective) ${ }^{\text {must take ANSC } 3123 \text { if not }}$ planning to take ANSC 3133 in Spring Year 3 | 3 |  |
| ANSC 3723 Horse and Livestock Merchandising | 3 |  |
| Social Science State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and $4.1)^{4}$ |  | 3 |
| Communication Intensive Elective (Satisfies General Education Outcome 5.1) ${ }^{1}$ |  | 3 |
| ANSC 3033 Animal Physiology |  | 3 |
| ANSC 3133 Animal Breeding and Genetics (OR ANET Concentration Elective ) must take ANSC 3133 if ANSC 3123 not taken in Fall Year 3 |  | 3 |

ANET Concentration Elective and/or General Elective
Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ANSC Core Elective and/or General Elective | 4 |  |
| ANSC 4553 Forage-Ruminant Relations (OR | 3 |  |
| ANET Concentration Elective) |  |  |

${ }^{1}$ Recommend COMM 1313 or AGED 4003 to satisfy General Education Outcomes 1.2 and 5.1. See academic adviser for complete list of Communication Intensive courses. COMM 1313 is required for most Schools of Veterinary Medicine.The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{2}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 100 MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include:
 or PHIL 2103C.
${ }^{4}$ The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ Must take ANSC 3282 or ANSC 3761L if not planning to take ANSC 3072 or ANSC 3761L in Spring Year 2
${ }^{6}$ Must take ANSC 3282 or ANSC 3761L if Fine Arts/Humanities taken in Fall Year 2
${ }^{7}$ Only choose ANSC 3761L if 1st hour taken in Fall Year 2
${ }^{8}$ Must take ANSC 4553 if not planning to take ANSC 4163 in Spring Year 4

4 Requirements for B.S.A. in Animal Science with Pre-Professional Science Concentration Requirements for a Major in Animal Science

State minimum core (p. 81) and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)
University Requirements
UNIV 1001 University Perspectives
Communications
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
Communication Intensive Electives (6 hrs) (See student degree audit for approved course list) COMM 1313 is required for most Schools of Veterinary Medicine; Recommend AGED 3143,
AGED 4003, or COMM 1313 to fulfill Learning Outcome 1.2.
Recommend AGED 4003 or COMM 1313 to fulfill Learning Outcome 5.1.
U.S. History or Government 3

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201‘History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
or PLSC 200American National Government (ACTS Equivalency = PLSC 2003)
Mathematics
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)

Biological Sciences
BIOL 1543 Principles of Biology (ACTS Equivalency =
\& BIOL 1541L BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
BIOL 2013 General Microbiology (ACTS Equivalency $=$ BIOL
\& BIOL 2011L 2004 Lecture)
and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)
\& ANSC 241 thd Domestic Animal Microbiology Laboratory

## Chemical and Physical Sciences

## CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency

\& CHEM 1071L= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)
or CHEM 110 Rhiversity Chemistry I (ACTS Equivalency = CHEM \& CHEM 11011414 Lecture)
and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)
Select 4 hours from the following:
CHEM 1123 University Chemistry II (ACTS Equivalency =
\& CHEM 1121LCHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)

CHEM 2613 Organic Physiological Chemistry (ACTS \& CHEM 2611LEquivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)
CHEM 3603 Organic Chemistry I
\& CHEM 3601Land Organic Chemistry I Laboratory
ENTO 1023 Insects, Science and Society \& ENTO 1021L and Insects, Science and Society Lab ENSC 1003 Environmental Science \& ENSC 1001L and Environmental Science Laboratory PHYS 2013 College Physics I (ACTS Equivalency = PHYS \& PHYS 2011L 2014 Lecture)
and College Physics I Laboratory (ACTS
Equivalency = PHYS 2014 Lab)
Fine Arts and Humanities
Select 3 hours Fine Arts and 3 hours Humanities from State
Minimum Core (see student degree audit for course list).
Social Sciences
Select 9 hours Social Sciences courses from State Minimum Core (see student degree audit for course list).
Animal Science Core Requirements (31 hours)

| ANSC 1033 | Introductory Animal Sciences | 3 |
| :--- | :--- | :--- |
| ANSC 1781 | Career Preparation and Development | 1 |
| ANSC 2113 | Introduction to Animal Evaluation and Handling | 4 |
| \& ANSC 2111L | and Introduction To Animal Evaluation and <br>  <br>  <br> Handling Lab |  |
| ANSC 3123 | Principles of Genetics | 3 |
| or ANSC 3133 Animal Breeding and Genetics |  |  |
| ANSC 3143 | Principles of Animal Nutrition |  |
| \& ANSC 3141L | and Animal Nutrition Laboratory |  |
| ANSC 3213 | Behavior of Domestic Animals | 4 |
| ANSC 3033 | Animal Physiology | 3 |
| ANSC 3433 | Fundamentals of Reproductive Physiology | 3 |
| ANSC 4993 | Animal Science Capstone | 3 |

Select 4 hours from the following:

| ANSC 4252 | Cow-Calf Management |
| :--- | :--- |
| ANSC 4262 | Swine Production |
| ANSC 4272 | Sheep Production |
| ANSC 4282 | Horse Production |
| ANSC 4452 | Milk Production |
| ANSC 4482 | Companion Animal Management |
| ANSC 4652 | Stocker-Feedlot Cattle Management |
| ANSC 4662 | Comparative Studies in Panamanian and US |
|  | Agricultural Practices |

ANSC 410V Special Topics in Animal Sciences ((Study Abroad to New Zealand or Australia))
Concentration Requirements
General Electives - Students may need to take up to 12 hours of
additional 3000 or above level courses to fulfill the 40 hour upper division requirements.

## Total Hours

## Requirements for Pre-Professional Science Concentration

|  |  |  |
| :---: | :---: | :---: |
| CHEM 3613 <br> \& CHEM 3611L | Organic Chemistry II and Organic Chemistry II Laboratory | 4 |
| CHEM 3813 | Elements of Biochemistry | 3 |
| BIOL 1603 \& BIOL 1601L | ```Principles of Zoology (ACTS Equivalency = BIOL 1054 Lecture) and Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab)``` | 3-4 |
| or BIOL 2533 | Cell Biology |  |
| PHYS 2013 <br> \& PHYS 2011L | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` | 4 |
| PHYS 2033 <br> \& PHYS 2031L | ```College Physics II (ACTS Equivalency = PHYS 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)``` | 4 |
| Select 2 hours f core requiremen | m the following (In addition to those taken for the | 2 |


| ANSC 4252 | Cow-Calf Management |
| :--- | :--- |
| ANSC 4262 | Swine Production |
| ANSC 4272 | Sheep Production |
| ANSC 4282 | Horse Production |
| ANSC 4452 | Milk Production |
| ANSC 4482 | Companion Animal Management |
| ANSC 4652 | Stocker-Feedlot Cattle Management |
| ANSC 4662 | Comparative Studies in Panamanian and US <br> Agricultural Practices |
| ANSC 410V | Special Topics in Animal Sciences (Study Abroad <br> to New Zealand or Australia) |

## Total Hours

## Animal Science B.S.A. with PreProfessional Science Concentration <br> Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight Semester Degree Policy (p.67) for university requirements of the program. (*See degree audit in UAConnect for complete course list.)

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| UNIV 1001 University Perspectives | 1 |  |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 3 |  |
| ANSC 1033 Introductory Animal Sciences | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency |  |  |
| $=$ MATH 1103) (Satisfies General Education | 4 |  |
| Outcome 2.1) <br> BIOL 1543 Principles of Biology (ACTS |  |  |
| Equivalency = BIOL 1014 Lecture) |  |  |
| \& BIOL 1541L Principles of Biology Laboratory |  |  |
| (ACTS Equivalency = BIOL 1014 Lab) |  |  |

(Satisfies General Education Outcome 3.4)
ANSC 1781 Career Preparation and Development
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1)
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3)
ANSC 2113 Introduction to Animal Evaluation and Handling
\& ANSC 2111L Introduction To Animal Evaluation and Handling Lab
General Elective (recommended ANSC 1062 Sustainable Integrated Small Animal Farming)
CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I Laboratory
(ACTS Equivalency = CHEM 1414 Lab)
(Satisfies General Education Outcome 3.4)
Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| Communication Intensive Elective (Satisfies <br> General Education Outcomes 1.2 and 5.1) |  |  |
| CHEM 1123 University Chemistry II (ACTS <br> Equivalency = CHEM 1424 Lecture) | 3 |  |
| \& CHEM 1121L University Chemistry II Laboratory |  |  |
| (ACTS Equivalency = CHEM 1424 Lab) | 4 |  |
| ANSC 3213 Behavior of Domestic Animals |  |  |
| BIOL 2013 General Microbiology (ACTS | 3 |  |
| Equivalency = BIOL 2004 Lecture) <br> \& BIOL 2011L General Microbiology Laboratory <br> (ACTS Equivalency = BIOL 2004 Lab) <br> or ANSC 2413 and ANSC 2411L <br> General Elective | 4 |  |

U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)

General Elective (Recommend MATH 1213)
Social Sciences Core Elective (Satisfies General Education Outcome 3.3)
Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or $3.2 \& 5.1)^{2,3}$
CHEM 3603 Organic Chemistry I
\& CHEM 3601L Organic Chemistry I Laboratory
Year Total:


CHEM 3613 Organic Chemistry II 4

Equivalency = BIOL 1054 Lecture)
\& BIOL 1601L Principles of Zoology Laboratory
(ACTS Equivalency = BIOL 1054 Lab)
or BIOL 2533 Cell Biology
PHYS 2013 College Physics I (ACTS Equivalency
= PHYS 2014 Lecture)
\& PHYS 2011L College Physics I Laboratory
(ACTS Equivalency $=$ PHYS 2014 Lab)
ANSC 4993 Animal Science Capstone (Satisfies
General Education Outcome 6.1)
General Electives (Recommend STAT 2303) 3-4
PHYS 2033 College Physics II (ACTS Equivalency 4
= PHYS 2024 Lecture)
\& PHYS 2031L College Physics II Laboratory
(ACTS Equivalency = PHYS 2024 Lab)
Year Total:
15
11
${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
4 The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H,

PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Requirements for B.S.A. in Animal Science with Equine Systems Concentration <br> Requirements for a Major in Animal Science

State minimum core (p. 81) and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)


Select 4 hours from the following:
CHEM 1123 University Chemistry II (ACTS Equivalency =
\& CHEM 1121LCHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
CHEM 2613 Organic Physiological Chemistry (ACTS

\& CHEM 2611LEquivalency = CHEM 1224 Lecture)
and Organic Physiological Chemistry Laboratory
(ACTS Equivalency = CHEM 1224 Lab)

CHEM 3603 Organic Chemistry I

\& CHEM 3601Land Organic Chemistry I Laboratory

ENTO 1023 Insects, Science and Society

\& ENTO 1021L and Insects, Science and Society Lab

ENSC 1003 Environmental Science

\& ENSC 1001L and Environmental Science Laboratory

PHYS 2013 College Physics I (ACTS Equivalency = PHYS

\& PHYS 2011L 2014 Lecture)

and College Physics I Laboratory (ACTS
Equivalency = PHYS 2014 Lab)

Fine Arts and Humanities
Select 3 hours Fine Arts and 3 hours Humanities from State Minimum Core (see student degree audit for course list).

## Social Sciences

9
Select 9 hours Social Sciences courses from State Minimum Core (see student degree audit for course list).
Animal Science Core Requirements (31 hours)
ANSC 1033 Introductory Animal Sciences 3
ANSC 1781 Career Preparation and Development 1
ANSC 2113 Introduction to Animal Evaluation and Handling 4
\& ANSC 2111L and Introduction To Animal Evaluation and Handling Lab
ANSC 3123 Principles of Genetics 3
or ANSC 3133 Animal Breeding and Genetics
ANSC 3143 Principles of Animal Nutrition 4
\& ANSC 3141L and Animal Nutrition Laboratory
ANSC 3213 Behavior of Domestic Animals 3
ANSC 3033 Animal Physiology 3
ANSC 3433 Fundamentals of Reproductive Physiology 3
ANSC 4993 Animal Science Capstone 3
Select 4 hours from the following: 4

| ANSC 4252 | Cow-Calf Management |
| :--- | :--- |
| ANSC 4262 | Swine Production |
| ANSC 4272 | Sheep Production |
| ANSC 4282 | Horse Production |
| ANSC 4452 | Milk Production |
| ANSC 4482 | Companion Animal Management |
| ANSC 4652 | Stocker-Feedlot Cattle Management |
| ANSC 4662 | Comparative Studies in Panamanian and US |
|  | Agricultural Practices |

$\begin{array}{ll}\text { ANSC 410V } & \begin{array}{l}\text { Special Topics in Animal Sciences ((Study Abroad } \\ \text { to New Zealand or Australia)) }\end{array}\end{array}$

## Concentration Requirements

20-21
General Electives - Students may need to take up to 12 hours of $18-19$ additional 3000 or above level courses to fulfill the 40 hour upper division requirements.
Total Hours

## Requirements for Equine Systems Concentration

| Equine System Concentration (21 hours) |  |  |
| :--- | :--- | ---: |
| ANSC 2003 | Introduction to Equine Industry | 3 |
| ANSC 3723 | Horse and Livestock Merchandising | 3 |
| ANSC 4282 | Horse Production | 2 |
| ANSC 2333 | Introduction to Animal Health | 3 |
| or ANSC 3003 | Applied Animal Parasitology |  |
| or ANSC 3333 | Diseases of Livestock |  |
| Select 10 hours from the following: | 10 |  |
| ANSC 2303L | Introduction to Horsemanship |  |
| ANSC 3072 | Equine Selection and Evaluation |  |
| ANSC 3753 | Equine Assisted Activities and Therapies |  |
| ANSC 3761L | Ranch Horse Riding |  |
| ANSC 4123 | Legal Issues in Animal Agriculture |  |
| ANSC 4163 | Companion Animal Nutrition |  |
| ANSC 4173 | Thoroughbred Horse Industry |  |
| ANSC 4303 | Comparative Veterinary Anatomy |  |
| ANSC 4553 | Forage-Ruminant Relations |  |

## Total Hours

## Animal Science B.S.A. with an Equine Systems Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight Semester Degree Policy (p. 67) for university requirements of the program. (*See UAConnect Degree Audit for complete course list.)

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| UNIV 1001 University Perspectives | 1 |  |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| ANSC 1033 Introductory Animal Sciences | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency | 3 |  |
| = MATH 1103) (Satisfies General Education |  |  |
| Outcome 2.1) |  |  |
| BIOL 1543 Principles of Biology (ACTS |  |  |
| Equivalency = BIOL 1014 Lecture) |  |  |
| \& BIOL 1541L Principles of Biology Laboratory |  |  |
| (ACTS Equivalency = BIOL 1014 Lab) |  | 3 |
| (Satisfies General Education Outcome 3.4) |  | 3 |
| ANSC 1781 Career Preparation and Development |  |  |
| ANSC 2003 Introduction to Equine Industry |  |  |
| ENGL 1023 Composition II (ACTS Equivalency |  |  |
| = ENGL 1023) (Satisfies General Education |  | 4 |
| Outcome 1.1) |  |  |
| General Elective |  |  |
| ANSC 2113 Introduction to Animal Evaluation and |  |  |
| Handling |  |  |
| \& ANSC 2111L Introduction To Animal Evaluation |  |  |
| and Handling Lab |  | 4 |


| CHEM 1073 Fundamentals of Chemistry (ACTS |  |  |
| :---: | :---: | :---: |
| Equivalency = CHEM 1214 Lecture) |  |  |
| \& CHEM 1071L Fundamentals of Chemistry |  |  |
| (Satisfies General Education Outcome 3.4) |  |  |
| Year Total: | 15 | 16 |
| Second Year |  | Units |
|  | Fall | Spring |
| BIOL 2013 General Microbiology (ACTS | 4 |  |
| Equivalency = BIOL 2004 Lecture) |  |  |
| \& BIOL 2011L General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) or ANSC 2413 and ANSC 2411L |  |  |
| ANSC 3213 Behavior of Domestic Animals | 3 |  |
| U.S. History or Government State Minimum Core | 3 |  |
| Elective (Satisfies General Education Outcome |  |  |
| 4.2) |  |  |
| Equine Systems Elective* and/or General Elective | 3 |  |
| (Satisfies General Education Outcome 3.3 and $4.1)^{4}$ |  |  |
| Communication Intensive Elective (Satisfies <br> General Education Outcomes 1.2 and 5.1) ${ }^{1}$ |  |  |
| Fine Arts or Humanities State Minimum Core |  | 3 |
| Elective (Satisfies General Education Outcome 3.1 or 3.2 \& 5.1$)^{2,3}$ |  |  |
| Equine Systems Elective* and/or General Elective 3 |  |  |
| Chemistry or Physical Science Elective* 4 |  |  |
| General Elective 3 |  |  |
| Year Total: | 16 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| ANSC 3433 Fundamentals of Reproductive <br> Physiology |  |  |
|  |  |  |
| ANSC 3143 Principles of Animal Nutrition | 4 |  |
| \& ANSC 3141L Animal Nutrition Laboratory |  |  |
| Fine Arts or Humanities State Minimum Core | 3 |  |
| Elective (Satisfies General Education Outcome 3.1 or $3.2 \& 5.1)^{2.3}$ |  |  |
| ANSC 3723 Horse and Livestock Merchandising | 3 |  |
| Equine Systems Elective* | 3 |  |
| Social Sciences State Minimum Core Elective <br> (Satisfies General Education Outcome 3.3) |  |  |
| ANSC 3133 Animal Breeding and Genetics (OR <br> Social Sciences Core Elective (Satisfies General Education Outcome 3.3) ${ }^{4,6}$ |  |  |
|  |  |  |
| ANSC 3033 Animal Physiology 3 |  |  |
| ANSC 4282 Horse Production |  |  |
| Communication Intensive Elective (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{1}$ |  |  |
|  |  |  |
| Year Total: | 16 | 14 |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ANSC Core Elective* | $2-4$ |  |
| General Elective | $5-7$ |  |
| ANSC 3123 Principles of Genetics (OR Social | 3 |  |
| Sciences State Minimum Core Elective (Satisfies |  |  |
| General Education Outcomes 3.3 and 4.1) |  |  |


| ANSC 401V | Internship in Animal Sciences |  |
| :--- | :--- | :--- |
| ANSC 4123 | Legal Issues in Animal Agriculture |  |
| ANSC 4173 | Thoroughbred Horse Industry |  |
| Total Hours |  | $\mathbf{2 0}$ |

## Minor in Animal Science (ANSC-M)

A minor in Animal Science prepares students for jobs in the animal industries. A student planning to minor in animal science must consult with an Animal Science adviser. The minor consists of 20 hours to include the following:

| Category $\mathbf{1}$ (6 hours) |  |  |
| :--- | :--- | :--- |
| ANSC 1033 | Introductory Animal Sciences | 3 |
| ANSC 2113 | Introduction to Animal Evaluation and Handling | 3 |
| Category 2 |  | 6 |

${ }^{1}$ Recommend COMM 1313 or AGED 4003 to satisfy General Education Outcomes 1.2 and 5.1. See academic adviser for complete list of Communication Intensive courses. COMM 1313 is required for most Schools of Veterinary Medicine.
2 The Fine Arts elective courses which satisfy General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 100
MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include:
CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 200 or PHIL 2103C.
${ }^{4}$ The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ ANSC 3123 must be taken if ANSC 3133 not taken in Spring Year 3
${ }^{6}$ ANSC 3133 must be taken if ANSC 3123 will not be taken in Fall Year 4

## Minor in Equine Science (EQSC-M)

A minor in Equine Science prepares students for jobs in the equine industry. A student planning to minor in Equine Science should meet with an Animal Science adviser for more information. The Equine Science minor is only available to students outside of the ANSC major.

The minor consists of 20hours to include the following:

| Core Requirements | 14 |
| :--- | :--- |
| ANSC 1033 | Introductory Animal Sciences |
| ANSC 3033 | Animal Physiology |
| ANSC 3133 | Animal Breeding and Genetics |
| or ANSC 34 iffundamentals of Reproductive Physiology |  |
| ANSC 3143 | Principles of Animal Nutrition |
| ANSC 4282 | Horse Production |
| Core Equine Electives: |  |
| ANSC 2303L | Introduction to Horsemanship |
| ANSC 3072 | Equine Selection and Evaluation |
| ANSC 3723 | Horse and Livestock Merchandising | 9 hours of online content based on research and best practices in equine care and management. It is designed to provide undergraduate students with a microcertificate in specific equine knowledge areas - general equine care and management, successful equine sales options, and equine behavior. This microcertificate will be open to undergraduates pursuing an Animal Science degree, those outside of the field of Animal Science but with an interest in horses and county extension agents.

Requirements: To receive the undergraduate Equine Management Microcertificate, students are required to take 9 hours of coursework in Animal Science within the Bumpers College of Agricultural, Food and Life Sciences. There are no prerequisites for enrolling in the Equine Management Microcertificate courses.

## Required Courses:

| ANSC 2003 | Introduction to Equine Industry | 3 |
| :--- | :--- | :--- |
| ANSC 3723 | Horse and Livestock Merchandising | 3 |
| ANSC 3773 | Equine Behavior | 3 |
| Total Hours |  | 9 |

## Faculty

Coffey, Ken, Ph.D. (University of Missouri-Columbia), M.S. (University of Kentucky), B.S. (University of Tennessee), Professor, 1996, 2003.
Gadberry, M. Shane, Ph.D., M.S., B.S. (University of Arkansas), Professor, 2006, 2019.
Huang, Yan, Ph.D. (University of Wyoming), M.S. (Dankook University), B.S. (China Agricultural University), Assistant Professor, 2015.

Jennings, John A., Ph.D. (University of Missouri), M.S. (University of Arkansas), B.S. (Southwest Missouri State University), Professor, 1998.
Kegley, Beth, Ph.D., M.S. (North Carolina State University), B.S. (Virginia Polytech Institute and State University), Professor, 1996, 2007.
Kutz, Bryan Richard, M.S. (Western Kentucky University), B.S.
(Oklahoma State University), A.S. (Northern Oklahoma College), Instructor, 1997.
Littlejohn, Brittni P., Ph.D. (Texas A\&M University), Assistant Professor, 2019.

Looney, Charles R., Ph.D. (Louisiana State University), Professor, 2019. Looper, Michael L., Ph.D. (Oklahoma State University), M.S., B.S. (University of Arkansas), Professor, 2011.
Maxwell, Charles, Ph.D. (University of Wisconsin-Madison), M.S., B.S. (University of Georgia), Professor, 1996.
Philipp, Dirk, Ph.D. (Texas Tech University), M.S., B.S. (University of Leizig, Germany), Associate Professor, 2007, 2015.
Pohlman, Fred W., Ph.D. (Kansas State University), M.S. (University of Tennessee), B.S. (University of Missouri-Columbia), Professor, 1997, 2009.

Powell, Jeremy G., Ph.D. (University of Arkansas), D.V.M. (Oklahoma State University), B.S. (University of Arkansas), Professor, 2009, 2013.
Rivera, Daniel J., Ph.D. (New Mexico State University), M.S. (West Texas A\&M University), Associate Professor, 2021.
Rorie, Rick, Ph.D. (Louisiana State University), M.S., B.S. (University of Arkansas), Professor, 1989, 2003.
Rumley, Elizabeth R., LL.M. (University of Arkansas), J.D. (University of Toledo), B.A. (Michigan State University), Instructor, 2012.
Russell, Mark, Ed.D. (Texas Tech University), M.S., B.S. (Colorado State University), Assistant Professor, 2010.
Thomas, Lauren, D.V.M. (Oklahoma State University), B.S. (University of Arkansas), Teaching Assistant Professor, 2016.
Vierck, Kelly, Ph.D. (Texas Tech University), M.S. (Kansas State University), B.S. (Oklahoma State University), Assistant Professor, 2020.
Ward, Heidi, Ph.D. (University of Oklahoma), D.V.M. (Oklahoma State University), B.S. (University of Oklahoma), Assistant Professor, 2015.
Yazwinski, Tom, Ph.D. (North Carolina State University), M.S. (University of Maine), B.S. (University of Vermont), University Professor, 1977, 2004.
Zhao, Jiangchao, Ph.D. (University of Wisconsin-Madison), M.S., B.S.
(China Agricultural University), Associate Professor, 2015, 2019.

## Courses

ANSC 1001L. Introductory to Animal Sciences Laboratory. 1 Hour.
Study of facilities used in production, processing, and management in animal agriculture. Identification, selection evaluation and testing of livestock, meat, and milk. Laboratory 3 hours per week. (Typically offered: Fall and Spring)

ANSC 1033. Introductory Animal Sciences. 3 Hours.
Students will be introduced to biological sciences associated with modern systems of care and management of livestock. Foundation sciences include topics in genetics, nutrition, reproduction, and animal health. The importance of livestock, equine, and companion animals and their allied industries will also be discussed. (Typically offered: Fall and Spring)

ANSC 1033H. Honors Introductory Animal Sciences. 3 Hours.
Students will be introduced to biological sciences associated with modern systems of care and management of livestock. Foundation sciences include topics in genetics, nutrition, reproduction, and animal health. The importance of livestock, equine, and companion animals and their allied industries will also be discussed. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ANSC 1033.
ANSC 1062. Sustainable Integrated Small Animal Farming. 2 Hours.
Practical information on small scale animal production, including practical strategies for farm planning, issues of economic and environmental sustainability, best management practices, biosecurity, disease prevention, and farm safety will be presented. (Typically offered: Spring)
This course is cross-listed with POSC 1062.
ANSC 1781. Career Preparation and Development. 1 Hour.
Course will cover concepts necessary for preparing for a career in the animal sciences and allied industries. Concepts of goal setting, effective written and verbal communications, interpersonal skills, professional behaviors, presentation skills, portfolio and resume development will be presented. (Typically offered: Fall)
ANSC 2003. Introduction to Equine Industry. 3 Hours.
Examination of careers and business opportunities in the equine industry. Students will gain the opportunity to identify high quality horses through evaluation of conformation and locomotion. Students will also gain skill at oral presentation and be knowledgeable of costs and responsibilities associated with horse ownership. (Typically offered: Spring)
ANSC 2111L. Introduction To Animal Evaluation and Handling Lab. 1 Hour. Laboratory component stressing fundamental concepts of animal structure, composition, and behavior, and animal handling as they relate to animal production, safety, well-being, and handler safety. One 3-hour lab weekly. Corequisite: ANSC 2113 (only for students majoring in Animal Science). Pre- or Corequisite: ANSC 1033. (Typically offered: Fall and Spring)

ANSC 2113. Introduction to Animal Evaluation and Handling. 3 Hours.
Fundamental concepts of the interrelationship of animal growth, structure, function, and animal handling as they relate to animal production, safety, well-being, and handler safety. Corequisite: ANSC 2111L (only for students majoring in Animal Science). Pre- or Corequisite: ANSC 1033. (Typically offered: Fall and Spring)
ANSC 2252L. Introduction to Livestock and Meat Evaluation. 2 Hours.
Develop an understanding between live animal evaluation and carcass composition. Comparative judging including meat evaluation, classification and selection of beef cattle, sheep and swine. (Typically offered: Spring)

ANSC 2303L. Introduction to Horsemanship. 3 Hours.
A study of modern horsemanship training techniques involving the psychology and ethology (reason for the behavior) of equine social behavior and how it pertains to learning patterns; application of fundamental behavioral concepts in training of horses, and modification of desirable and undesirable behavioral patterns. Prerequisite: Instructor consent. (Typically offered: Fall and Spring)

## ANSC 2333. Introduction to Animal Health. 3 Hours.

This course will cover the fundamental principles of animal health and disease prevention. Course discussion will include sanitation, disinfection, immunization, nutrition, housing and husbandry, causes of diseases, parasitism, clinical signs of disease, prevention and treatment options for diseases. Prerequisite: BIOL 1543 and sophomore standing. (Typically offered: Fall)

## ANSC 2411L. Domestic Animal Microbiology Laboratory. 1 Hour

This course is designed for students working on their Poultry Science, Anima Science, and/or Food Science degrees. Students enrolled in this course will learn how to collect samples aseptically from live birds and meat samples, transport samples, and culture samples on a variety of different microbiological media. In addition, students will have the opportunity to visit one of the microbiology labs in the local poultry production facilities. Students will learn how to handle samples, stain bacterial cells, and identify unknown bacteria from field samples. A lab period will be assigned to teaching students on how to use bacteria in food production by teaching students how to prepare and sample yogurt. Corequisite: ANSC 2413. (Typically offered: Fall)
This course is cross-listed with POSC 2411L.

## ANSC 2413. Domestic Animal Microbiology. 3 Hours.

Basic concepts of domestic animal and poultry microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology.

Corequisite: ANSC 2411L. Prerequisite: (BIOL 1543 and BIOL 1541L) and (CHEM 1073 and ((CHEM 1071L or CHEM 1103) or (CHEM 1123 and
CHEM 1121L)). (Typically offered: Fall)
This course is cross-listed with POSC 2413.

## ANSC 3003. Applied Animal Parasitology. 3 Hours.

The economically important parasites of domestic animals with emphasis on their host relationships and management considerations. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Fall Even Years)

ANSC 3013. Parasitisms of Domesticated Non-Herbivores. 3 Hours.
Course will provide applied instruction and appreciation for the parasitisms of our domesticated swine, chickens, turkeys, dogs and cats. (Typically offered: Fall Odd Years)

ANSC 3033. Animal Physiology. 3 Hours.
Fundamental aspects of central nervous, musculoskeletal, reproductive, digestive, immune, cardiovascular, respiratory and renal systems will be covered. The normal structure and function of these systems will be emphasized. Lecture 3 hours per week. Prerequisite: BIOL 1543 and (CHEM 1123 or CHEM 1073). (Typically offered: Spring)

## ANSC 3072. Equine Selection and Evaluation. 2 Hours.

Students will learn criteria for evaluation and selection of breeding and show animals and will gain expertise in the evaluation of breed types and show ring characteristics. Includes field trips to various breed operations. Students in this class will be well prepared to participate in equine judging team activities. Prerequisite: Instructor consent. (Typically offered: Spring)

## ANSC 3123. Principles of Genetics. 3 Hours.

Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher. (Typically offered: Fall)
This course is cross-listed with POSC 3123.
ANSC 3133. Animal Breeding and Genetics. 3 Hours.
Application of the principles of genetics to the breeding of farm animals. Lecture 3 hours per week. Corequisite: Drill component. Prerequisite: MATH 1203 or higher. (Typically offered: Spring)

## ANSC 3141L. Animal Nutrition Laboratory. 1 Hour.

Animal Nutrition Laboratory (FA) Practical and quantitative approach to animal nutrition; use of various methods of feedstuff evaluation including ration balancing for domestic animals. Laboratory 2 hours per week. Corequisite: ANSC 3143 for ANSC majors only. Prerequisite: MATH 1203. (Typically offered: Fall)

ANSC 3143. Principles of Animal Nutrition. 3 Hours.
Scientific approach to animal nutrition involving the mechanisms through which feed nutrients are utilized by farm animals. Lecture 3 hours per week. Corequisite: ANSC 3141L (only a corequisite for students majoring in Animal Science). Prerequisite: ANSC 1033. (Typically offered: Fall)

ANSC 3213. Behavior of Domestic Animals. 3 Hours
Behavior associated with domestication. Effects of selective breeding, physical and social environments, and developmental stage on social organization, aggressive behavior, sexual behavior, productivity, and training of domestic animals. (Typically offered: Fall)

## ANSC 3282. Livestock Judging and Selection. 2 Hours.

Comparative judging, including grading, classification, and selection of beef cattle, swine, sheep and horses. Oral and written discussion. Laboratory 6 hours per week. Prerequisite: ANSC 1033 or ANSC 2252L. (Typically offered: Fall)

ANSC 3291. Livestock Junior Judging Team Activity. 1 Hour.
Training for membership on judging teams, through participation. (Typically offered: Spring)

ANSC 3333. Diseases of Livestock. 3 Hours.
Introductory study of the diseases of farm animals with emphasis on fundamental principles of disease, body defense mechanisms, hygiene, and sanitation. Prerequisite: BIOL 1543 and ANSC 2333. (Typically offered: Spring)

ANSC 3433. Fundamentals of Reproductive Physiology. 3 Hours.
Principles of mammalian reproductive physiology with emphasis on farm animals. Lecture 3 hours per week. Pre- or Corequisite: ((CHEM 1073 and CHEM 1071L) or (CHEM 1123 and CHEM 1121L) or (CHEM 2613 and CHEM 2611L) or (CHEM 3603 and CHEM 3601L)) and junior standing. Prerequisite: BIOL 1543. (Typically offered: Fall)

ANSC 3491L. Artificial Insemination in Cattle. 1 Hour.
Experience with artificial insemination technique in cattle including estrus detection, semen storage and handling, insemination equipment maintenance and technique. Laboratory 4 hours per week. The course is offered the second 8 weeks of the spring semester. Pre- or Corequisite: ANSC 3433 or instructor consent. (Typically offered: Fall)

## ANSC 3513H. Honors Current Approaches in Agricultural Laboratory Research. 3 Hours.

A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543 and honors standing. (Typically offered: Spring Even Years)
This course is cross-listed with POSC 3513H.
ANSC 3613. Meat Science. 3 Hours.
The study of meat science and muscle biology. Topics will include animal/tissue growth and development and the relationship to meat quality. Meat processing, preservation, and meat safety concerns will also be considered. Lecture 3 hours per week. (Typically offered: Spring)

## ANSC 3723. Horse and Livestock Merchandising. 3 Hours.

Various types of merchandising programs for specific livestock enterprises will be presented. Students will evaluate the effectiveness of merchandising programs including how to organize, advertise, and manage a purebred auction sale of livestock. (Typically offered: Fall)

ANSC 3753. Equine Assisted Activities and Therapies. 3 Hours.
Animal Science 3753 introduces students to the field of equine assisted activities and therapies. A variety of approaches, therapeutic settings and client populations will be addressed with an emphasis on equine behavior. Students will gain experience in the practical application of an equine assisted therapy program. (Typically offered: Fall)

## ANSC 3761L. Ranch Horse Riding. 1 Hour.

This course is designed for students to have the opportunity to practice and/or compete in ranch horse competition as well as experience horseback ranch work. The class will consist mostly of hands-on participation at the Whitaker Arena as well as various competition and ranch sites around the region and country. Students will learn the value of the horse in livestock production as well as the competition portion of the equine industry. The Ranch Horse Team is a flagship for the University of Arkansas, Bumper's College Department of Animal Science. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## ANSC 3773. Equine Behavior. 3 Hours.

Students will be introduced to equine behavior and its application to equine management and training. Course will cover identifying behaviors, senses and memory of the horse, horse-human interaction, how horses learn, the application of classical conditioning and equine welfare. (Typically offered: Summer)
ANSC 400V. Special Problems. 1-6 Hour.
Special problems in the animal sciences for advanced undergraduate students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## ANSC 401V. Internship in Animal Sciences. 1-6 Hour.

Supervised work experience with private or government organizations Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## ANSC 4072. Advanced Equine Selection and Evaluation. 2 Hours.

Advanced evaluation and selection of breeding and show animals, evaluation of breed types and show characteristics. Field trips to breeding operations. Competitive Judging team members come from this course and participation in competitive events will be required. Prior equine evaluation is not necessary, but instructor consent is required. Some Saturday activities. Prerequisite: ANSC 3072 or instructor consent. (Typically offered: Fall)

## ANSC 410V. Special Topics in Animal Sciences. 1-4 Hour.

Topics not covered in other courses or a more intensive study of specific topics in animal sciences. (Typically offered: Irregular) May be repeated for degree credit.

ANSC 410VH. Honors Special Topics in Animal Sciences. 1-4 Hour.
Topics not covered in other courses or a more intensive study of specific topics in animal sciences. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to ANSC 410 V .

## ANSC 4123. Legal Issues in Animal Agriculture. 3 Hours.

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulationfrom local to state to federal, depending on the issue- will be studied and discussed. (Typically offered: Spring Odd Years)
This course is cross-listed with AGEC 4123, POSC 4123.

## ANSC 4142. Advanced Animal Handling Techniques. 2 Hours.

This course is designed to familiarize students with handling techniques of a variety of animals, including cattle, sheep, horses, pigs, dogs, and others. Students will learn and practice handling, restraint, and common husbandry procedures with a variety of domestic species. The course will provide valuable preparation for careers in livestock management, vet medicine, animal-based research, and other fields in animal science. Prerequisite: Junior standing or consent. (Typically offered: Fall and Spring)

ANSC 4163. Companion Animal Nutrition. 3 Hours.
This course is designed to focus on the digestive anatomy, physiology, and nutrient metabolism of non-herbivorous companion animals, primarily dogs and cats. Topics discussed will also include an overview of the pet food industry, its regulations and commonly utilized ingredients. Students will gain a deeper understanding of nutrition as it relates to life stages and various disease states that can affect both dogs and cats. This course will require a Saturday trip to one or two off campus facilities. Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Spring) This course is cross-listed with POSC 4163.

## ANSC 4173. Thoroughbred Horse Industry. 3 Hours.

This course is designed to give you an overview of the Thoroughbred breed and industry. Students will gain an understanding of the Thoroughbred industry, it's history, and modern practices. Students will also gain an understanding of career potential in the Thoroughbred industry. Prerequisite: Instructor consent and Junior or Senior standing. (Typically offered: Spring Odd Years)

## ANSC 4181. Kentucky Thoroughbred Tour. 1 Hour.

An overview of the Thoroughbred industry in central Kentucky through visiting major racetracks, world-class Thoroughbred breeding facilities, major equine veterinary practices, world class equine sales facilities, equine rehabilitation and retirement facilities, equine nutritional research facilities, and visit with horse trainers, veterinarians and farm managers. Successful completion of all course requirements and the tours will enable students to obtain 1 credit in animal science, network in the equine industry and critically assess potential careers. Prerequisite: Instructor consent. (Typically offered: Summer Odd Years)

## ANSC 4252. Cow-Calf Management. 2 Hours.

Systems of cow-calf management including the practical application of the principles of breeding, feeding, and management to commercial and purebred beef cattle under Arkansas conditions. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall)

## ANSC 4262. Swine Production. 2 Hours.

Methods in producing purebred and commercial swine with specific emphasis on the management programs needed for profitable pork production in Arkansas. Prerequisite: Must be a student in Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall Even Years)

## ANSC 4272. Sheep Production. 2 Hours.

Purebred and commercial sheep management emphasizing the programs of major importance in lamb and wool production in Arkansas. Prerequisite: Must be a student in Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Spring)

## ANSC 4282. Horse Production. 2 Hours.

Production, use and care of horses and ponies including breeding, feeding, handling, and management. Lecture 1 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Junior standing or higher. (Typically offered: Spring)
ANSC 4291. Livestock Senior Judging Team Activity. 1 Hour.
Training for membership on judging teams, through participation. (Typically offered: Fall)

## ANSC 4303. Comparative Veterinary Anatomy. 3 Hours.

Study of structures and principles of anatomy of major domestic species. The dog, horse, and cow will be used as models for anatomical structures and the application of anatomical knowledge in animal science; focus on veterinary applications. 3 hours of lecture each week. Spring semesters. Corequisite: Lab component. Prerequisite: ANSC 1033 or BIOL 1543, junior standing or instructor consent. (Typically offered: Fall and Spring)

## ANSC 4452. Milk Production. 2 Hours.

Principles of breeding, feeding, and management of dairy cattle will be studied. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall Odd Years)

## ANSC 4482. Companion Animal Management. 2 Hours.

The study and application of principles of domestication, nutrition, reproduction, parasitology, diseases, behavior, and husbandry management to companion animals. Dogs, cats, and exotic animals will be the species of primary interest. Practical problems of care and management of these species will be solved.
Prerequisite: BIOL 1543 or equivalent or consent of instructor. (Typically offered: Spring)

## ANSC 4553. Forage-Ruminant Relations. 3 Hours.

Chemical, physical, and botanical characteristics of forage plants, the dynamics of grazing, intake, digestion, behavior, and nutrient cycling at the plant-animal interface. CSES 1203 recommended. Corequisite: Lab component. Prerequisite: ANSC 3143. (Typically offered: Fall Even Years)

## ANSC 4613. Muscle Growth and Development. 3 Hours

This is an undergraduate level course offering detailed insights into skeletal muscle morphological, physiological, cellular, and molecular factors affecting muscle structure and function, with special emphasis on cellular and molecular regulation of muscle growth and development, such as myo-, fibro-, and adipo-genesis. And the relationship between the properties of skeletal muscle and meat quality. ANSC 3033 and(or) CHEM 3813 are recommended as a prerequisite(s). (Typically offered: Fall) This course is cross-listed with POSC 4613.

## ANSC 4652. Stocker-Feedlot Cattle Management. 2 Hours.

Production and management systems for stocker and feed-lot cattle including practical applications of forage systems, feeding, health management and economics of production of these livestock. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall)

## ANSC 4662. Comparative Studies in Panamanian and US Agricultural Practices. 2 Hours.

An experiential-learning course with an embedded trip to Panama designed to give students an overview of the agricultural industry and the impact of Panamanian history, culture and geography on agriculture and how this contrasts with practices in the US. Students will participate in a study tour to Panama where they will engage in learning experiences that explore the agriculture, history, and culture of this country. They will have the opportunity to visit and learn from successful producers of livestock and agricultural staples as well as tour the Panama canal and learn about Panamanian culture and history. Prerequisite: Instructors consent and approval from Study Abroad office. (Typically offered: Spring)

## ANSC 4923. Brain \& Behavior. 3 Hours.

Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory systems and the autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3033 or POSC 3033) or PSYC 2003 or BIOL 2213 or BIOL 2443 or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with POSC 4923.

## ANSC 4993. Animal Science Capstone. 3 Hours.

The purpose of this course is to provide students with an opportunity to apply and integrate knowledge from previous coursework in general education and animal science. This course is a multiple experience/ exercise capstone course and is designed for students to demonstrate mastery of a particular subject within Animal Science. Students will provide evidence of integrated knowledge through a variety of means including oral presentations, creation of a 1250-word reflective essay, writing a research abstract and applying problem solving and critical thinking skills. Prerequisite: Senior standing. (Typically offered: Fall and Spring)

## Crop, Soil and Environmental Sciences (CSES)

Jeff Edwards

Department Head
115 Plant Science Building
479-575-2354

## Crop, Soil and Environmental Sciences Website

Courses in the Department of Crop, Soil and Environmental Sciences provide fundamental and applied studies in two majors:

- Crop Science (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/ cropmanagementcpmg/)
- Environmental, Soil and Water Science (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ dalebumperscollegeofagriculturalfoodandlifesciences/ environmentalsoilandwaterscienceesws/)

Areas studied within the Crop Science major include crop science, production agriculture, plant breeding and genetics, crop and forage production, pest management (weeds, insects, and plant diseases), and soil fertility. The Environmental, Soil and Water Science major includes courses in areas such as environmental science, water quality, soil science, soil and water conservation, and the sustainable productivity of natural resources.

Many graduates from both majors also choose to continue their education in graduate programs in a wide variety of disciplines both related and complementary to the B.S.A. degrees.

## Crop Science (CPSC)

Jeff Edwards
Professor and Head
115 Plant Science Building
479-575-2354

Opportunities for employment and post-graduate study are numerous for graduates of the Department of Crop, Soil, and Environmental Sciences. Crop Science graduates become involved in crop production or find employment in public agencies providing support services for agriculture (e.g., Extension Service, State Plant Board, Natural Resources Conservation Service), or as consultants serving production agriculture, in the agrichemical and seed industries and in agricultural research programs.

The crop science major includes courses in crop management, production agriculture, plant breeding and genetics, crop and forage production, pest management (weeds, insects, and plant diseases), and soil fertility.

## Requirements for a Major in Crop Science (CPSC)

State minimum core (p. 81) and discipline specific general education requirements (p. 72).
(Course work that meets state minimum core requirements is in bold.)

| University Requirements |  |
| :---: | :---: |
| UNIV 1001 U | University Perspectives ${ }^{1}$ |
| Communications 12 |  |
| ENGL 1013 C | Composition I (ACTS Equivalency = ENGL 1013) |
| ENGL 1023 C | Composition II (ACTS Equivalency = ENGL 1023) |
| COMM 1313 P | Public Speaking (ACTS Equivalency $=$ SPCH 1003) |
| CSES 3023 C | Crop, Soil, and Environmental Sciences Colloquium |
| U.S. History or Government ${ }^{2}$ |  |
| Select 3 hours US History or Government State Minimum Core |  |
| Mathematics and Computer Science |  |
| MATH 1203 C | College Algebra (ACTS Equivalency $=$ MATH 1103) (or higher level MATH) |
| or STAT 230Principles of Statistics (ACTS Equivalency $=$ MATH 2103) |  |
| Physical and Biological Sciences 15-19 |  |
| ```BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL & BIOL 1541L 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)``` |  |
| CHEM 2613 Organic Physiological Chemistry (ACTS <br> \& CHEM 2611LEquivalency = CHEM 1224 Lecture) <br> and Organic Physiological Chemistry Laboratory <br> (ACTS Equivalency = CHEM 1224 Lab) |  |
| ANSC 3123 Principles of Genetics or POSC 31‘Principles of Genetics or BIOL 232:General Genetics |  |
| Select one CHEM group (4-8 hours) |  |
| CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = \& CHEM 1071LCHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) |  |
| CHEM 1103 <br> \& CHEM 1101LC <br> \& CHEM 1123 <br> \& CHEM 1121LE | University Chemistry I (ACTS Equivalency = LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS LEquivalency = CHEM 1414 Lab) and University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |

Fine Arts and Humanities ${ }^{2}$
Select 3 hours from Fine Arts State Minimum Core
Select 3 hours from Humanities State Minimum Core
Social Sciences ${ }^{2}$
AGEC 1103 Principles of Agricultural Microeconomics
Select 6 hours from Social Sciences State Minimum Core


## Crop Science B.S.A.

Eight-Semester Degree Program
See more about the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency |  |  |
| $=$ MATH 1103) (or higher level MATH (Satisfies |  |  |
| General Education Outcome 2.1)) |  |  |
| Satisfies General Education Outcome 3.4: |  |  |

BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency $=$ BIOL 1014 Lab)
CSES 1203 Introduction to Plant Sciences
UNIV 1001 University Perspectives
CSES 2103 Crop Science
\& CSES 2101L Crop Science Laboratory
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (If exempt, see adviser for communication courses.) (Satisfies General Education Outcome 1.1)
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)
AGEC 1103 Principles of Agricultural Microeconomics (Satisfies General Education Outcome 3.3)
U.S. History or Government Core Elective (Satisfies General Education Outcome 4.2) ${ }^{5}$
Year Total:
Second Year $\quad$ Fall Units

Satisfies General Education Outcome 3.4:
CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I Laboratory
(ACTS Equivalency $=$ CHEM 1414 Lab)
or CHEM 1073 and CHEM 1071L
Social Sciences State Minimum Core Elective
(Satisfies General Education Outcome 3.3) ${ }^{4}$
Fine Arts or Humanities State Minimum Core
Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,2}$
Crop Science Elective ${ }^{4,5}$
Crop Science Elective ${ }^{4,5}$
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II Laboratory
(ACTS Equivalency = CHEM 1424 Lab)
or CHEM 2613 and CHEM 2611L
ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers or STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)
Social Sciences State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) ${ }^{4}$

Fine Arts or Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,2}$
Crop Science Elective ${ }^{4,5}$
Year Total:

Units

3

3
${ }^{4}$ Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.
${ }^{5}$ See student degree audit for approved course list.

## Environmental, Soil and Water Science (ESWS)

Mary C. Savin
ESWS Coordinator
115 Plant Science Building
479-575-5740
Opportunities for employment and post-graduate study are numerous for graduates of the Department of Crop, Soil, and Environmental Sciences. Environmental, Soil, and Water Science graduates find jobs with environmental consulting companies, environmental education organizations, state agencies (e.g., Extension Service, Department of Environmental Quality, Health Department), federal agencies (e.g., Environmental Protection Agency, Natural Resources Conservation Service), municipalities and local environmental services (e.g., waste management and recycling, water and wastewater treatment facilities, parks and tourism departments), a wide variety of private businesses, and environmental research.

The Environmental, Soil, and Water Science major includes courses in areas such as environmental science, water quality, soil science, soil and water conservation, and the sustainable productivity of natural resources.

## Requirements for a Major in Environmental, Soil, and Water Science (ESWS)

State minimum core (p. 81) and discipline specific general education (p. 72) requirements:
(Course work that meets state minimum core requirements is in bold.)
University Requirements 1

| UNIV 1001 | University Perspectives (Counts as General Elective) |
| :---: | :---: |
| Communication |  |
| Choose from English Core course (6 hours) |  |
| COMM 1313 | ```Public Speaking (ACTS Equivalency = SPCH 1003)``` |
| CSES 3023 | Crop, Soil, and Environmental Sciences Colloquium |
| or ACOM 31 Communicating Agriculture to the Public |  |
| U.S. History and Government |  |
| Choose 3 hours U.S. History/Government from state minimum core |  |
| Mathematics |  |
| MATH 1203 | $\begin{aligned} & \text { College Algebra (ACTS Equivalency }=\text { MATH } \\ & \text { 1103) } \end{aligned}$ |
| MATH 1213 | Plane Trigonometry (ACTS Equivalency = MATH 1203) (Higher level MATH is encouraged for students with an ACT of 26 or higher and considering graduate school.) |
| Sciences |  |


| BIOL 1543 \& BIOL 1541L | Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) |
| :---: | :---: |
| BIOL 2013 <br> \& BIOL 2011L | General Microbiology (ACTS Equivalency $=$ BIOL 2004 Lecture) <br> and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) |
| BIOL 3863 <br> \& BIOL 3861L <br> or ENSC 322 <br> \& ENSC 322 | General Ecology and General Ecology Laboratory <br> 2 2Bcosystems Assessment <br> 2敌 Ecosystems Assessment Laboratory |
| CSES 1203 | Introduction to Plant Sciences |
| CHEM 1103 <br> \& CHEM 1101L | University Chemistry I (ACTS Equivalency = LCHEM 1414 Lecture) <br> and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) |
| CHEM 1123 <br> \& CHEM 1121L | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |
| CHEM 2613 \& CHEM 2611L <br> or CHEM 36 <br> \& CHEM 360 | Organic Physiological Chemistry (ACTS <br> LEquivalency = CHEM 1224 Lecture) <br> and Organic Physiological Chemistry Laboratory <br> (ACTS Equivalency = CHEM 1224 Lab) <br> GOBrganic Chemistry I <br> Oadd Organic Chemistry I Laboratory |
| GEOS 1113 <br> \& GEOS 1111L | Physical Geology (ACTS Equivalency $=$ GEOL L1114 Lecture) <br> and Physical Geology Laboratory (ACTS <br> Equivalency = GEOL 1114 Lab) |
| PHYS 2013 <br> \& PHYS 2011L | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` |
| Fine Arts and Hum | umanities |
| Select 3 hours | Fine Arts from state minimum core |
| Select 3 hours | Humanities from state minimum core |
| Social Sciences |  |
| Select 9 hours | Social Sciences from state minimum core |
| ESWS Requireme | ents* |
| Environmental Sc | cience Core |
| CSES 2203 | Soil Science |
| CSES 2201L | Soil Science Laboratory |
| ENSC 1003 | Environmental Science |
| ENSC 1001L | Environmental Science Laboratory |
| ASTM 2903 | Agricultural and Human Environmental Sciences Applications of Microcomputers |
| ENSC 3003 | Introduction to Water Science |
| STAT 2303 P | $\begin{aligned} & \text { Principles of Statistics (ACTS Equivalency }=\text { MATH } \\ & \text { 2103) } \end{aligned}$ |
| Soil Science Core |  |
| Select one of the following: |  |
| CSES 3214 | Soil Resources and Nutrient Cycles (with Lab Component) |
| CSES 4224 | Soil Fertility (with Lab Component) |


| CSES 4253 | Soil Classification and Genesis (with Lab <br> Component) |
| :--- | :--- |
| CSES 4553 | Wetland Soils |

Natural Resources Core
Select 9 hours from the following two groups: 9
Environmental Science**
ASTM $3153 \quad$ Surveying in Agriculture and Forestry

CSES 2013 Pest Management
CSES 355V Soil Profile Description (1 hour, may take twice)
CSES 462V Internship (1-6 credit hours)
CSES 4553 Wetland Soils
ENSC 3103 Plants and Environmental Restoration
ENSC 3263 Soil and Water Conservation
ENSC 3603 GIS for Environmental Science
ENSC 4021L
ENSC 4401 Professional Certification Preparation
GEOS 3043 Sustaining Earth
GEOS 3543 Geospatial Applications and Information Science
Environmental Studies (0-3 hours)
AGEC 3413 Principles of Environmental Economics
AGEC 3503 Agricultural Law I
AGEC 3523 Environmental and Natural Resources Law
ENSC 3933 Environmental Ethics
SOCI 4603 Environmental Sociology
General Electives 16-17

Total Hours 120
*Courses within major cannot be taken for duplicate credit.
**One 3-hr study abroad course, either Experiential Learning in Indian Agriculture (Jan) or Sustainability in the Eurozone Agro-Food Chain (May), which are both taken under AFLS $401 \mathrm{~V} / 401 \mathrm{VH}$, can be substituted for 3 hours of Natural Resources core.

## Environmental, Soil, and Water Science B.S.A. <br> Eight-Semester Degree Program

Students wishing to follow the degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

| First Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |

9
Outcome 1.1)

Satisfies General Education Outcomes 3.4 and 5.1:

ENSC 1003 Environmental Science
\& ENSC 1001L Environmental Science Laboratory
Satisfies General Education Outcome 3.4:
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
MATH 1203 College Algebra (ACTS Equivalency
= MATH 1103) (Satisfies General Education
Outcome 2.1)
UNIV 1001 University Perspectives
Fine Arts or Humanities State Minimum Core
Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,2}$
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
CSES 1203 Introduction to Plant Sciences
Social Sciences State Minimum Core Elective
(Satisfies General Education Outcome 3.3)
CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I Laboratory
(ACTS Equivalency = CHEM 1414 Lab)
Year Total:
Second Year

General Elective as Broadening Elective (could 3
apply toward a minor)
GEOS 1113 Physical Geology (ACTS Equivalency
= GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
U.S. History or Government State Minimum Core

Elective (Satisfies General Education Outcome 4.2)

COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)
MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203)
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II Laboratory
(ACTS Equivalency = CHEM 1424 Lab)
Fine Arts or Humanities State Minimum Core
Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,2}$
Social Sciences State Minimum Core Elective 3
(Satisfies General Education Outcome 3.3)
ENSC 3003 Introduction to Water Science
ASTM 2903 Agricultural and Human Environmental 3
Sciences Applications of Microcomputers
Year Total:

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| CSES 2203 Soil Science | 4 |  |
| \& CSES 2201L Soil Science Laboratory |  |  |
| PHYS 2013 College Physics I (ACTS Equivalency = PHYS 2014 Lecture) | 4 |  |
| \& PHYS 2011L College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab) |  |  |
| Water Science or Natural Resources Core | 3 |  |
| Select one of the following: | 3-4 |  |
| General Electives as AFLS Broadening Electives (Could apply toward a minor) ${ }^{4}$ |  |  |
| CHEM 3603 Organic Chemistry I |  |  |
| BIOL 2013 General Microbiology (ACTS |  |  |
| Equivalency = BIOL 2004 Lecture) |  |  |
| \& BIOL 2011L General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) |  |  |
| CHEM 2613 Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) |  |  |
| \& CHEM 2611L Organic Physiological Chemistry |  |  |
| Social Sciences State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and $4.1)^{3}$ |  |  |
| Water Science or Soil Science Core (For Water <br> Science: Recommended: ENSC 3003; Soil <br> Science: Pre-at least CSES 2203) |  |  |
|  |  |  |
|  |  |  |
| Year Total: 14 |  |  |
| Fourth Year |  | Units |
|  | Fall | Spring |
| Select one of the following: <br> CSES 3023 Crop, Soil, and Environmental <br> Sciences Colloquium (Satisfies General <br> Education Outcome 6.1) <br> ACOM 3143 Communicating Agriculture to the Public |  |  |
|  |  |  |
|  |  |  |
| Select one of the following: <br> ENSC 3223 Ecosystems Assessment <br> \& ENSC 3221L Ecosystems Assessment <br> Laboratory <br> BIOL 3863 General Ecology <br> \& BIOL 3861L General Ecology Laboratory |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| Statistics or Natural Resources Core 3 |  |  |
| Soil Science or Natural Resources Core 3-4 |  |  |
| Natural Resources Core or General Elective (Could apply elective toward a minor) ${ }^{4}$ |  |  |
| Natural Resources Core or General Elective ${ }^{4}$ |  |  |
| Statistics or Natural Resources Core 3 |  |  |
| General Elective ${ }^{4}$ |  |  |
| General Elective as Broadening Elective (Could apply toward a minor) ${ }^{4}$ |  |  |
| General Elective (May wish to take another elective. Could apply toward a minor) ${ }^{4}$ |  |  |
| Year Total: | 16 | 13 |

Total Units in Sequence:
${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{2}$ The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
${ }^{3}$ The Social Science Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{4}$ Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

## Minor in Crop Biotechnology (CPBT-M)

A student planning to minor in Crop Biotechnology must notify the program adviser for consultation and more detailed information. The Crop Biotechnology Minor consists of 16 hours of courses and to include the following:

## Core Courses

| PLPA 4333 | Biotechnology in Agriculture | 3 |
| :---: | :---: | :---: |
| Genetics |  |  |
| CSES 400V | Special Problems (two 2-hour courses taken in two different semesters) | 4 |
| Select one of the following: |  | 3 |
| BIOL 2323 | General Genetics |  |
| $\begin{aligned} & \text { ANSC/POSC } \\ & 3123 \end{aligned}$ | Principles of Genetics |  |
| Controlled Electives |  |  |
| Select two of the following: |  | 6 |
| BIOL 4303 |  |  |
| CHEM 3813 | Elements of Biochemistry |  |
| CSES 4103 | Plant Breeding |  |
| Total Hours |  | 16 |

## Minor in Crop Science (CPSC-M)

A student planning to minor in Crop Science must notify the program adviser for consultation and more detailed information. The Crop Science Minor consists of 18 semester hours of 2000 -level courses or above, including the following:

| CSES 2103 | Crop Science | 3 |
| :--- | :--- | :--- |
| CSES 2203 | Soil Science | 3 |

Select 12 hours with at least 4 hours coming from Group A:
Group A
CSES 3312 Cotton Production
CSES 3322 Soybean Production
CSES 3332 Rice Production
CSES 3342 Cereal Grain Production
Group B
CSES 3214 Soil Resources and Nutrient Cycles
CSES 4013 Advanced Crop Science
CSES 4103 Plant Breeding
CSES 4133 Ecology and Morphology of Weedy and Invasive Plants
CSES 4143 Principles of Weed Control
CSES 4224 Soil Fertility
Total Hours

## Faculty

Bacon, Robert Keith, Ph.D. (Purdue University), M.S., B.S.A., (University of Arkansas), Professor, 1984, 1993.
Barber, Thomas, Ph.D., M.S., B.S. (University of Arkansas), Professor, 2007, 2016.
Bourland, Fred, Ph.D. (Texas A\&M University), M.S., B.S.A. (University of Arkansas), Professor, 1988.
Brye, Kristofor R., Ph.D., M.S. (University of Wisconsin-Madison), B.S. (University of Wisconsin-Stevens Point), University Professor, 2001, 2020.

Burgos, Nilda Roma, Ph.D., M.S. (University of Arkansas), B.S. (Visayas State College of Agriculture-Philippines), Professor, 1998, 2010.
Butts, Thomas R., Ph.D. (University of Nebraska-Lincoln), Assistant Professor, 2019.
Counce, Paul Allen, Ph.D. (University of Georgia), M.S. (Purdue
University), B.S. (University of Tennessee-Martin), Professor, 1983, 2003.
Daniels, Michael B., Ph.D., M.S. (University of Arkansas), B.S.
(Pennsylvania State University), Professor, 1996, 2006.
De Guzman, Christian T., Ph.D. (Louisiana State University), B.S.
(University of Philippines, Los Banos), Assistant Professor, 2020.
Espinoza, Leonel A., Ph.D., M.S. (University of Florida), B.S. (lowa State University), Associate Professor, 2003, 2007.
Gbur, Edward E., Ph.D., M.S. (The Ohio State University), B.S. (Saint Francis University), Professor, 1987, 1998.
Hardke, Jarrod T., Ph.D. (Louisiana State University), B.S.A. (University of Arkansas), Professor, 2013, 2020.
Kelley, Jason, Ph.D., M.S. (Oklahoma State University), B.S. (Kansas State University), Professor, 2003, 2019.
Lee, Jung Ae, Ph.D., M.S. (University of Georgia), M.A., B.A., (Ewha Womans University), Assistant Professor, 2016.
Mason, Richard Esten, Ph.D., B.A. (Texas A\&M University), Associate Professor, 2010, 2016.
Mauromoustakos, Andy, Ph.D., M.S. (Oklahoma State University), B.S. (Oral Roberts University), Professor, 1989, 2002.
Miller, David M., Ph.D. (University of Georgia), M.S., B.S. (Purdue University), Professor, 1988, 2001.
Mozaffari, Morteza, Ph.D. (University of Delaware), M.S., B.S. (University of Massachusetts), Assistant Professor, 2002.
Mozzoni, Leandro, Ph.D. (University of Arkansas), M.S. B.S. (Rosario National University), Associate Professor, 2017.
Norsworthy, Jason Keith, Ph.D., M.S. (University of Arkansas), B.S. (Louisiana Tech University), Distinguished Professor, 2006, 2019.

Pereira, Andy, Ph.D. (lowa State University), M.S. (Indian Agricultural Research Institute, India), B.Sc.Ag. (Govind Ballabh Pant University of Agriculture and Technology, India), Professor, Anheuser-Busch and Arkansas Wholesalers Professorship in Molecular Genetics, 2011. Poncet, Aurelie, Ph.D. (Auburn University), M.S. (Montpellier SupAgro, France), M.S. Minor: (AgroTIC), B.S. (Montpellier SupAgro, France), Assistant Professor, 2020.
Purcell, Larry C., Ph.D. (University of Florida), M.S., B.S. (University of Georgia), Distinguished Professor, Ben J. Altheimer Chair for Soybean Research, 1993, 2017.
Roberts, Trenton L., Ph.D. (University of Arkansas), M.S. (University of Arizona), B.S. (Oklahoma State University), Associate Professor, 2010, 2017.

Savin, Mary Cathleen, Ph.D., M.S. (University of Rhode Island), B.S. (University of Notre Dame), Professor, 2002, 2011.
Scott, Robert C., Ph.D. (Mississippi State University), M.S., B.S. (Oklahoma State University), Professor, 2002, 2008.
Sha, Xueyan, Ph.D. (Louisiana State University), Professor, 2012. Shakiba, Ehsan, Ph.D., M.S. (University of Arkansas), M.S., B.S. (Azad University, Iran), Assistant Professor, 2015.
Slaton, Nathan A., Ph.D., M.S. (University of Arkansas), B.S. (Murray State University), Professor, 2001, 2009.
Srivastava, Vibha, Ph.D. (Jawaharlal Nehru University, New Delhi), M.S. (Govind Ballabh Pant University of Agriculture and Technology), B.S. (D.E.I. University), Professor, 2001, 2012.

Thompson, Gary A., Ph.D. (Purdue University), M.S. (University of Wisconsin), Professor, 2020.
Wood, Lisa S., Ph.D., M.S., B.S. (University of Arkansas), Clinical Associate Professor, 2012, 2019.

## Courses

CSES 1203. Introduction to Plant Sciences. 3 Hours.
An introduction to basics of agricultural crop plant structure, growth, and production. (Typically offered: Fall and Spring)

## CSES 2013. Pest Management. 3 Hours.

Introduction to basic principles of pest management as they relate to vertebrate animals, insects, plant disease and weeds. Selected pests are studied with emphasis on current management approaches and alternative pest control. (Typically offered: Spring)

CSES 2101L. Crop Science Laboratory. 1 Hour.
A series of laboratory experiments designed to reinforce principles of plant growth and development, reproduction, classification, and the utilization of plant products. Emphasis is placed on major crop plant species. Experiments are conducted by individuals or by teams. Laboratory consists of a single, 2-hour period each week. Required for Crop Management majors. Corequisite: CSES 2103. (Typically offered: Spring)

## CSES 2103. Crop Science. 3 Hours.

Principles of crop growth, development, and utilization and how these principles relate to production. Emphasis on major agronomic crop species. Lecture 3 hours per week. (Typically offered: Spring)
CSES 2201L. Soil Science Laboratory. 1 Hour.
Field and laboratory exercises related to the study of the physical, chemical, and biological properties of soils. Laboratory mandatory for all crop management and environmental, soil, and water science majors and optional for others. Laboratory 2 hours per week. Pre- or Corequisite: CSES 2203. (Typically offered: Fall and Spring)

CSES 2203. Soil Science. 3 Hours.
Origin, classification, and physical, chemical, and biological properties of soils. Lecture 3 hours, discussion 1 hour per week. Corequisite: Drill component. Prerequisite: MATH 1203 or higher (to include MATH 1213, MATH 1284C, MATH 1514, MATH 2213, MATH 2043, MATH 2053, MATH 2445, MATH 2514, MATH 2554, MATH 2564, or MATH 2574) and CHEM 1103 or CHEM 1073. (Typically offered: Fall and Spring)
CSES 3023. Crop, Soil, and Environmental Sciences Colloquium. 3 Hours. A communication-intensive course covering topics in agronomy and environmental, soil, and water science with particular emphasis on spoken communication but also including written communication, group activities, professionalism, ethics, problem solving, and information retrieval. A student-oriented class with collaborative participation. Colloquium workshop: 3 hours per week. Prerequisite: COMM 1313 and Junior or Senior standing only. (Typically offered: Fall)
CSES 3214. Soil Resources and Nutrient Cycles. 4 Hours.
Integration of the fundamental concepts of the biological, chemical, and physical properties of soil systems and their roles in managing soil resources. Lecture 3 hours, laboratory 3 hours per week. Pre- or Corequisite: BIOL 2013 and BIOL 2011L. Corequisite: Lab component. Prerequisite: CSES 2203. (Typically offered: Spring Odd Years)

CSES 3312. Cotton Production. 2 Hours.
Principles and techniques associated with production of cotton. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Fall Even Years)
CSES 3322. Soybean Production. 2 Hours.
An overview of the history and utilization of soybean as well as the physiological and environmental basis for the development of economical soybean production practices. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Spring Odd Years)

## CSES 3332. Rice Production. 2 Hours.

A study of the principles and practices involved in rice culture worldwide with major emphasis on the United States. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Fall Odd Years)
CSES 3342. Cereal Grain Production. 2 Hours.
An overview of the botany, production, cultural practices, soil \& climatic adaptation and utilization of the major cereal grain crops. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Spring Even Years)
CSES 355V. Soil Profile Description. 1-2 Hour.
Training for soil profile description writing and membership of judging teams. (Typically offered: Fall) May be repeated for up to 8 hours of degree credit.

## CSES 3703. Precision Agriculture for Crops. 3 Hours.

This course will provide students with a practical understanding of precision agriculture and crop/ecosystem monitoring with remote and proximal sensing technology. Prerequisite: MATH 1203 and CSES 1203. (Typically offered: Spring)

CSES 400V. Special Problems. 1-6 Hour.
Work on special problems in crop, soil and environmental sciences or related field. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
CSES 4013. Advanced Crop Science. 3 Hours.
Fundamental concepts of crop physiology, crop improvement, seed science, and crop production systems. Recitation 3 hours per week. Prerequisite: CSES 2103 and CSES 2203. (Typically offered: Spring)
CSES 402V. Special Topics. 1-3 Hour.
Studies of selected topics in crop, soil and environmental sciences not available in other courses. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

CSES 4103. Plant Breeding. 3 Hours.
Basic principles involved in plant breeding programs to improve crop plants and seed programs. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: ANSC 3123 or BIOL 2323. (Typically offered: Fall Even Years)

CSES 4133. Ecology and Morphology of Weedy and Invasive Plants. 3 Hours.
Study of weeds as economic pests occurring in both agricultural and nonagricultural situations and including poisonous plants and other specific weed problems. Gross morphological plant family characteristics which aid identification, habitat of growth and distribution, ecology, competition, and allelopathy are discussed. Lecture 2 hours, laboratory 2 hours a week. Corequisite: Lab component. Prerequisite: CSES 2103 or HORT 2003. (Typically offered: Fall)

CSES 4143. Principles of Weed Control. 3 Hours.
Advanced concepts and technology used in modern weed control practices and study of the chemistry and specific activity of herbicides in current usage. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CHEM 1073 and CHEM 1071L. (Typically offered: Spring)

## CSES 4224. Soil Fertility. 4 Hours.

Study of the soil's chemical, biological and physical properties, and human modification of these properties, as they influence the uptake and utilization of the essential nutrients by plants. Lecture 3 hours, laboratory 2 hours per week. Preor Corequisite: CHEM 1123 and CHEM 1121L or (CHEM 1073 and CHEM 1071L and CHEM 2613 and CHEM 2611L). Corequisite: Lab component. Prerequisite: CSES 2201L and CSES 2203. (Typically offered: Fall)
CSES 4253. Soil Classification and Genesis. 3 Hours.
Lecture and field evaluation of soil properties and their relation to soil genesis and soil classification with emphasis on soils of Arkansas. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L. (Typically offered: Fall Odd Years)

## CSES 4553. Wetland Soils. 3 Hours.

This course explains the chemical, physical, and morphological characteristics of wetland soils and describes the techniques for identifying wetland soils using field indicatiors and monitoring equipment. This course also explains principles of wetland creation, restoration, and mitigation - all key components in assuring the sustainability of valuable wetland resources. Prerequisite: CSES 2203 and CSES 2201L or CSES 355V. (Typically offered: Spring Odd Years)

## CSES 462V. Internship. 1-6 Hour.

Supervised practical work experience in agronomy and environmental science to develop and demonstrate professional competence. Faculty approval of project proposal prior to enrollment and written and oral reports after the project is complete are required. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## Entomology and Plant Pathology (ENPL)

Ken Korth
Department Head
217 Plant Science Building
479-575-5191
Entomology and Plant Pathology Website (http://entomology.uark.edu/)
The Department of Entomology and Plant Pathology offers three undergraduate minors:

- Entomology
- Plant Pathology
- As well as an interdisciplinary Pest Management (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/
dalebumperscollegeofagriculturalfoodandlifesciences/ pestmanagementpmgt/) minor.

Full degree programs are offered only at the graduate level.
Entomology is the branch of science concerned with the study of insects and related organisms. It involves studies of their biology, structure, identification, economic significance, and population management. The major emphasis of the curriculum is understanding insect biology and applying that knowledge in an integrated approach to insect-pest management.

Plant pathology is the study of interrelationships of plants with the abiotic and biotic agents that affect plant health and productivity. The goal of the discipline is to minimize the impact of plant diseases on agricultural production and human health. Scientific training within the department focuses on the nature, cause, and management of plant diseases.

Undergraduate students interested in graduate work in entomology or plant pathology should pursue one of the minors here or the Pest Management minor.

## Minor in Entomology (ENTO-M)

A student planning to minor in Entomology must notify the ENTO program adviser for consultation and more detailed information. The Entomology Minor consists of 15 semester hours of courses in Entomology, including the following:

## Core Requirements

ENTO 3013 Introduction to Entomology
Core Electives
Students must complete at least 12 credits of additional ENTO courses selected with the approval of the Entomology program adviser. Examples of available electives include:

| ENTO 1023 | Insects, Science and Society |
| :--- | :--- |
| ENTO 1021L | Insects, Science and Society Lab |
| ENTO 3011L | Introduction to Insect Identification Lab |
| ENTO 4013 | Insect Behavior and Chemical Ecology |
| ENTO 4024 | Insect Diversity and Taxonomy |
| ENTO 4043 | Honey Bee Biology and Beekeeping |
| ENTO 4053 | Insect Ecology |
| ENTO 4123 | Insect Pest Management |
| ENTO 4133 | Advanced Applied Entomology |
| ENTO 400V | Special Problems |
| ENTO 410V | Special Topics |

Total Hours

## Minor in Plant Pathology (PLPA-M)

A student planning to minor in plant pathology should notify the Department of Entomology and Plant Pathology and consult an adviser. A minor in Plant Pathology consists of 19 hours to include the following:
$\left.\begin{array}{lll}\text { PLPA 3003 } & \text { Principles of Plant Pathology } \\ \text { \& PLPA 3001L } & \text { and Principles of Plant Pathology Laboratory }\end{array}\right] 4$

| BIOL 4233 | Genomics and Bioinformatics |
| :--- | :--- |
| BIOL 4353 | Ecological Genetics/Genomics |
| BIOL 4753 |  |
| PLPA 4333 | Biotechnology in Agriculture |

Total Hours

## Graduate Faculty

Bateman, Nick, Ph.D. (Mississippi State University), B.S. (University of Arkansas-Monticello), Assistant Professor, 2016.
Bluhm, Burt H., Ph.D., M.S. (Purdue University), B.S. (University of Oklahoma), Associate Professor, 2008, 2014.
Cartwright, Richard D., Ph.D. (University of California at Davis), M.S., B.S. (University of Arkansas), Extension Professor, 1993, 2005.

Correll, Jim, Ph.D., M.S. (University of California-Berkeley), B.S. (Pennsylvania State University), Distinguished Professor, 1989, 2018.
Dowling, Ashley Patrick Gregg, Ph.D. (University of Michigan-Ann Arbor), B.S. (University of Arizona), Professor, 2008, 2019.
Egan, Martin J., Ph.D., B.Sc. (University of Exeter, United Kingdom), Assistant Professor, 2016.
Faske, Travis, Ph.D. (Texas A\&M University), M.S. (Oklahoma State University), B.S. (Tarleton State University), Associate Professor, 2015.
Goggin, Fiona, Ph.D. (University of California-Davis), B.S. (Cornell University), Professor, 2001, 2011.
Hopkins, John D., Ph.D. (University of Arkansas), M.S., B.S. (Clemson University), Associate Professor, 2001.
Joshi, Neelendra, Ph.D. (Pennsylvania State University), Assistant Professor, 2015.
Korth, Ken L., Ph.D. (North Carolina State University), B.S. (University of Nebraska), Professor, 1999, 2009.
Loftin, Kelly M., Ph.D. (New Mexico State University), M.S. (University of Arkansas), B.S. (Arkansas Tech), Associate Professor, 2002, 2010.
Lorenz, Gus M., Ph.D., B.S.A., M.S. (University of Arkansas),
Distinguished Professor, 1997, 2013.
McDermott, Emily, Ph.D. (University of California-Riverside), B.S. (The Ohio State University), Assistant Professor, 2020.
Rojas, Alejandro, Ph.D., M.S. (Michigan State University), M.S., B.S. (Los Andes University), Assistant Professor, 2018.
Rojas, Clemencia, Ph.D. (Cornell University), M.S. (Purdue University), B.S. (Universidad de Los Andes, Colombia), Assistant Professor, 2015.

Rupe, John C., Ph.D., M.S. (University of Kentucky), B.S. (Colorado State University), University Professor, 1984, 2019.
Spurlock, Terry, Ph.D. (University of Arkansas), Extension Associate Professor, 2015.
Steinkraus, Donald C., Ph.D. (Cornell University), M.S. (University of Connecticut), B.A. (Cornell University), Professor, 1989, 1999.
Studebaker, Glenn, Ph.D., M.S. (University of Arkansas), B.S. (Missouri Southern State University), Associate Professor, 1993.
Szalanski, Allen Lawrence, Ph.D. (University of Nebraska-Lincoln), M.S. (Kansas State University), B.S. (University of Manitoba), Professor, 2001, 2011.

Thrash, Ben, , Assistant Professor, 2018.
Tzanetakis, loannis E., Ph.D. (Oregon State University), M.S., B.S. (Agricultural University of Athens, Greece), Professor, 2008, 2016.
Wamishe, Yeshi Andenow, Ph.D. (University of Arkansas) M.S., B.S.
(Addis Ababa University, Ethiopia), Associate Professor, 2011, 2016.

## Entomology Courses

ENTO 1021L. Insects, Science and Society Lab. 1 Hour.
To educate students on the importance of insects in biology and science, human and animal medicine, ecosystems, agriculture, pollination, genetic research, the arts, and human culture and history. The lab will be a hands-on approach to reinforcing entomological concepts addressed in lecture. Corequisite: ENTO 1023. (Typically offered: Fall and Spring)

## ENTO 1023. Insects, Science and Society. 3 Hours.

To educate students on the importance of insects in biology and science, human and animal medicine, ecosystems, agriculture, pollination, genetic research, the arts, and human culture and history. Corequisite: ENTO 1021L. (Typically offered: Spring)

ENTO 3011L. Introduction to Insect Identification Lab. 1 Hour.
Introductory lab course on insect identification, collection, and curation techniques, primarily designed as an intensive add-on to ENTO 3013 for students wanting a more in-depth examination of insect diversity. Insect collection required. Course includes field trips. Students are encouraged to contact instructor before enrolling.
Pre- or Corequisite: ENTO 3013. (Typically offered: Fall)
This course is cross-listed with BIOL 3011L.

## ENTO 3013. Introduction to Entomology. 3 Hours.

Fundamentals of insect biology including structure and function, development, ecology, behavior, plant feeding and disease transmission. Lecture 3 hours/week. Students interested in a more intensive examination of insects, including collection, curation, and identification techniques, should sign up for the separate one credit lab ENTO 3011L. Students are strongly encouraged to take BIOL 1543 before registering for this course. (Typically offered: Fall)
This course is cross-listed with BIOL 3013.
ENTO 400V. Special Problems. 1-4 Hour.
Special problems. (Typically offered: Fall, Spring and Summer)

## ENTO 4013. Insect Behavior and Chemical Ecology. 3 Hours.

Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory/discussion 2 hours per week. Corequisite: Lab component (Typically offered: Spring Even Years)
This course is cross-listed with BIOL 4013.
ENTO 4024. Insect Diversity and Taxonomy. 4 Hours.
Principles and practices of insect classification and identification with emphasis on adult insects. Corequisite: Lab component. Prerequisite: ENTO 3013. (Typically offered: Fall Even Years)
This course is cross-listed with BIOL 4024.

## ENTO 4043. Honey Bee Biology and Beekeeping. 3 Hours.

To acquaint the student with social insects in general and honey bees in particular, to promote an interest in beekeeping as a hobby, occupation, and/or science, to give the students the basic knowledge of how to keep honey bees, and to increase awareness of the contribution that pollinating insects make to agriculture, natural ecosystems, and human life. Lecture 3 hours, plus beekeeping field day. (Typically offered: Spring)

## ENTO 4053. Insect Ecology. 3 Hours.

To develop understanding of important ecological concepts through study of dynamic relationships among insects and their environment. To become familiar with the literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. Corequisite: Lab component. (Typically offered: Fall Even Years)
This course is cross-listed with BIOL 4053.

## ENTO 410V. Special Topics. 1-3 Hour.

Topics not covered in other courses or a more intensive study of specific topics in entomology. (Typically offered: Irregular) May be repeated for degree credit.

ENTO 4123. Insect Pest Management. 3 Hours.
Study of principles and concept of insect pest management. Areas covered include survey of arthropod pests and damage, population dynamics, damage thresholds, physiological units, prediction models, surveillance, arthropod sampling, strategies and tactics utilized to maintain pest populations below economic injury levels. Prerequisite: ENTO 3013. (Typically offered: Spring Odd Years)

ENTO 4133. Advanced Applied Entomology. 3 Hours.
Biology and ecology of major arthropod pests as model applied management systems. Activities include independent study, literature review and group discussions. Knowledge of general entomology and pest management is required. Self-learning modules are available. Lecture 2 hours/week and direct self-study laboratory 2 hours/week. Corequisite: Lab component. Prerequisite: ENTO 3013. (Typically offered: Spring Even Years)

## Plant Pathology Courses

PLPA 3001L. Principles of Plant Pathology Laboratory. 1 Hour.
Lab course in examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions. Spread of disease and principles of disease control. Pre- or Corequisite: PLPA 3003 or BIOL 3003. (Typically offered: Fall)
This course is cross-listed with BIOL 3001L.

## PLPA 3003. Principles of Plant Pathology. 3 Hours.

Examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions. Spread of disease and principles of disease control. (Typically offered: Fall)
This course is cross-listed with BIOL 3003.
PLPA 400V. Research. 1-6 Hour.
Original investigations of assigned problems in plant pathology. Prerequisite: PLPA 3004. (Typically offered: Fall, Spring and Summer)

## PLPA 4123. Bacterial Lifestyles. 3 Hours.

The course will introduce students to bacteria as prokaryotic organisms, different from eukaryotes such as plants and animals. Model microbial systems will be studied in more detail to identify unique strategies that bacteria employ to thrive in their respective environment, whether they are causing diseases or establishing beneficial interactions with animal or plants or coexisting with other microorganisms in diverse ecological environments. The course will also cover special adaptations that bacteria have evolved to adapt to harsh environments and how these adaptations can be harnessed to control pollution. Prerequisite: (BIOL 2013 and BIOL 2011L) or BIOL 3123. (Typically offered: Spring Odd Years) This course is cross-listed with BIOL 4223.

## PLPA 4223. Plant Disease Control. 3 Hours.

Principles, methods and mechanics of plant disease control. Emphasis is given to the integration of control measures and epidemiology of plant diseases. Lecture 3
hours per week. Prerequisite: PLPA 3003. (Typically offered: Fall)
This course is cross-listed with BIOL 4133.

## PLPA 4333. Biotechnology in Agriculture. 3 Hours.

Discussion of the techniques, applications, and issues of biotechnology as it is being used in modern agriculture. Coverage includes the basics of molecular biology, production of transgenic plants and animals, and new applications in the agricultural, food, and medical marketplace. Lecture and discussion, 3 hours per week. (Typically offered: Fall)
This course is cross-listed with BIOL 4333.
PLPA 462V. Internship. 1-6 Hour.
Supervised practical work experience in pest management to develop and demonstrate professional competence. A maximum of 6 hours credit per semester or summer session is permitted. Faculty approval of projects proposal prior to enrollment, and written or oral reports are required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## Food Science (FDSC)

Jeyam Subbiah<br>Department Head<br>N-201 Food Science Building<br>479-575-4605<br>jsubbiah@uark.edu<br>Renee Threlfall<br>Brewing Science Certificate of Proficiency Program Director<br>B-3 Food Science Building<br>479-575-4677<br>rthrelf@uark.edu

Department of Food Science Website (http://food-science.uark.edu/)
Brewing Science Certificate of Proficiency Website (https:// brewing.uark.edu/)

Food science is an interdisciplinary field involving microbiology, engineering, biochemistry, nutrition, and sensory science to better understand food processes and improve food products for the general public. As the stewards of the field, food scientists study the physical, microbial, and chemical makeup of food. They apply their findings to develop the safe, nutritious, and sustainable foods and innovative packaging that line supermarket shelves daily.

Food science prepares students for many interesting, rewarding and challenging professional career opportunities in industry, business, governmental and educational organizations associated with food and food-related products. Due to the diversity and abundance of opportunities available, students graduating with a B.S.A. in food science readily obtain employment in the food industry or continue studies for graduate school. Additionally, requirements for several pre-professional programs can be fulfilled while meeting requirements for the food science degree.

Students may choose one of three areas of concentration for their degree program: Food Science (FDSC), Food Technology (FDTN) or Food and Culinary Sciences (FDCU). The FDSC concentration at the University of Arkansas is one of only 43 programs in the United States and the only one in Arkansas that is approved by the Institute of Food Technologists. It provides students with a strong background in basic and applied sciences and food chemistry, microbiology, engineering and quality control.

The food we consume daily is the result of extensive food research, a systematic investigation into a variety of foods' properties and compositions. After the initial stages of research and development, food products are mass produced using the principles of food technology. The FDTN concentration provides students interested in food industry careers with a multidisciplinary education consisting of core food science requirements in combination with a minor chosen by the student to compliment the student's career goals.

Culinary sciences blend the artistic abilities of culinary arts with the scientific expertise of food science to shape the future of research and development in the food industry. The FDCU concentration provides students interested in product development careers with an interdisciplinary background in food science and culinary arts. This concentration is a partnership program with Northwest Arkansas Community College (NWACC). Students complete their culinary arts coursework at Brightwater: A Center for the Study of Food (an academic division of NWACC located in Bentonville, AR) and are eligible to receive a Certificate of Proficiency in Culinary Arts from NWACC with no
additional coursework. Culinary coursework will be transferred to the UA; it can be taken prior to admission to the UA or taken while in residence at the UA. Food and Culinary Sciences concentration will provide students with the course work necessary to be eligible to become a Certified Culinary Scientist through the Research Chef's Association.

Students in each concentration are required to complete a relevant internship. There are also ample opportunities for students to gain research and international experiences and to select a minor.

## Requirements for B.S.A. in Food Science with Food Science Concentration

## Major Requirements

State minimum core (p. 81) and discipline-specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)
Communication (12 hours)
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
Select two courses from approved list of communication intensive courses
U.S. History and Government (3 hours) 3

Select 3 hours US History from University Core
Mathematics and Statistics (6 hours) 6
MATH 1203 College Algebra (ACTS Equivalency = MATH
STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

Physical and Biological Sciences (23-27 hours) 23-27
BIOL 1543 Principles of Biology (ACTS Equivalency $=$ BIOL
\& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency $=$ BIOL 1014 Lab)
BIOL 2013 General Microbiology (ACTS Equivalency $=$ BIOL
\& BIOL 2011L 2004 Lecture)
and General Microbiology Laboratory (ACTS
Equivalency = BIOL 2004 Lab)
CHEM 1103 University Chemistry I (ACTS Equivalency =
\& CHEM 1101LCHEM 1414 Lecture)
and University Chemistry I Laboratory (ACTS
Equivalency $=$ CHEM 1414 Lab)
CHEM 1123 University Chemistry II (ACTS Equivalency = \& CHEM 1121LCHEM 1424 Lecture)
and University Chemistry II Laboratory (ACTS
Equivalency = CHEM 1424 Lab)
CHEM 3813 Elements of Biochemistry
CHEM 2613 Organic Physiological Chemistry (ACTS
\& CHEM 2611LEquivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)
or CHEM 36IOrganic Chemistry I
\& CHEM 36Cand Organic Chemistry I Laboratory
\& CHEM 361and Organic Chemistry II
\& CHEM 361and Organic Chemistry II Laboratory

## Fine Arts and Humanities (6 hours)

Select 3 hours Fine Arts from State Minimum Core
Select 3 hours Humanities from State Minimum Core

| Social Sciences (9 hours) |  |  | Satisfies General Education Outcome |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Select 9 hours Social Sciences from State Minimum Core |  |  | 3.4: |  |  |  |
| University Requirement (1 hr) 1 |  |  | BIOL 1543 Principles of Biology (ACTS | 4 |  |  |
| UNIV 1001 University Perspectives |  |  | Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology |  |  |  |
| Food Science Degree Requirements (32 hours) 32 |  | 32 | \& BIOL 1541 L Principles of Biology <br> Laboratory (ACTS Equivalency $=\mathrm{BIOL}$ |  |  |  |
| FDSC 1011 Exploring Topics in Food Science |  |  | 1014 Lab) |  |  |  |
| FDSC 1103 Introduction to Food Science |  |  | FDSC 1011 Exploring Topics in Food |  |  |  |
| FDSC 2523 | Sanitation and Safety in Food Processing Operations |  | Science |  |  |  |
|  |  |  | ENGL 1023 Composition II (ACTS |  | 3 |  |
| FDSC 3103 Principles of Food Processing |  |  | Equivalency = ENGL 1023) (Satisfies |  |  |  |
| FDSC 3202 Introduction to Food Law |  |  | General Education Outcome 1.1) |  |  |  |
| FDSC 4113 Food Analysis \& FDSC 4111L and Food Analysis Lab |  |  | MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203) |  |  |  |
| FDSC 4122 Food Microbiology \& FDSC 4121 and Food Microbiology Lab |  |  | Satisfies General Education Outcome 3.4: |  |  |  |
| FDSC 4304 Food Chemistry |  |  | CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 |  |  |  |
| FDSC 431V Internship in Food Science |  |  |  |  |  |  |
| FDSC 4413 Sensory Evaluation of Food |  |  | \& CHEM 1101L University Chemistry I |  |  |  |
| FDSC 4713 Product Innovation for the Food Scientist |  |  | Laboratory (ACTS Equivalency $=$ CHEM |  |  |  |
| 21 hours from concentration requirements (FDSC, FDCU, FDTN) 21 |  |  | 1414 Lab) |  |  |  |
| General Electives 3-7 |  |  | FDSC 1103 Introduction to Food Science |  |  |  |
| Total Hours 120 |  |  |  |  |  |  |
| Additional Requirements for Food Science Concentration (21 hours) |  |  | FDSC 2523 Sanitation and Safety in |  |  |  |
|  |  |  | Food Processing Operations |  |  |  |
|  |  |  | Year Total: | 12 | 16 |  |
| FDSC 4754 Engineering Principles of Food Processing 4 |  |  |  |  |  |  |
| MATH 1213 | ```Plane Trigonometry (ACTS Equivalency = MATH 1203)``` |  | Second Year |  |  | Units Summer |
| MATH 2554 | Calculus I (ACTS Equivalency = M | TH 2405) 4 |  | STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103) |  |  |  |
| NUTR 1213 | Fundamentals of Nutrition | 3 |  |  |  |  |  |  |  |
| PHYS 2013 <br> \& PHYS 2011L | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` |  | CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) <br> \& CHEM 1121L University Chemistry II |  |  |  |
| General Elective 3 |  |  | $\begin{aligned} & \text { Laboratory (ACTS Equivalency = CHEM } \\ & 1424 \text { Lab) } \end{aligned}$ |  |  |  |
| Total Hours 21 |  |  |  |  |  |  |  |  |  |  |  |  |
| Food Science B.S.A., Food Science Concentration Nine-Semester Degree Program |  |  | PHYS 2013 College Physics I (ACTS <br> Equivalency = PHYS 2014 Lecture) <br> \& PHYS 2011L College Physics I <br> Laboratory (ACTS Equivalency $=$ PHYS <br> 2014 Lab) |  |  |  |
| Because the Food Science Concentration requires an internship one summer, students cannot enroll in an Eight-Semester Program. See the Eight-Semester Degree Policy (p. 67) for requirements of the eightsemester programs. |  |  | NUTR 1213 Fundamentals of Nutrition <br> General Elective <br> MATH 2554 Calculus I (ACTS <br> Equivalency = MATH 2405) |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| First Year Units |  |  | BIOL 2013 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) |  |  |  |
|  | Fall | Spring Summer |  |  |  |  |  |  |  |  |  |  |
| UNIV 1001 University Perspectives |  |  | \& BIOL 2011L General Microbiology Laboratory (ACTS Equivalency $=\mathrm{BIOL}$ 2004 Lab) |  |  |  |
| ENGL 1013 Composition I (ACTS <br> Equivalency = ENGL 1013) (Satisfies <br> General Education Outcome 1.1) |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | CHEM 2613 Organic Physiological |  | 4 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) |  |  | \& CHEM 2611L Organic Physiological <br> Chemistry Laboratory (ACTS <br> Equivalency = CHEM 1224 Lab) |  |  |  |


CHEM 2613 Organic Physiological Chemistry (ACTS
\& CHEM 2611LEquivalency = CHEM 1224 Lecture)
and Organic Physiological Chemistry Laboratory
(ACTS Equivalency = CHEM 1224 Lab)
or CHEM 36I Organic Chemistry I
\& CHEM 36(and Organic Chemistry I Laboratory
\& CHEM 361and Organic Chemistry II
\& CHEM 361and Organic Chemistry II Laboratory

Fine Arts and Humanities ( 6 hours)
Select 3 hours Fine Arts from State Minimum Core
Social Sciences (9 hours) 9

Select 9 hours Social Sciences from State Minimum Core
University Requirement (1 hr) 1
UNIV 1001 University Perspectives
Food Science Degree Requirements ( 32 hours)
FDSC 1011 Exploring Topics in Food Science
FDSC 1103 Introduction to Food Science
FDSC 2523 Sanitation and Safety in Food Processing Operations
FDSC 3103 Principles of Food Processing
FDSC 3202 Introduction to Food Law
FDSC 4113 Food Analysis
\& FDSC 4111L and Food Analysis Lab
FDSC 4122 Food Microbiology
\& FDSC 4121L and Food Microbiology Lab
FDSC 4304 Food Chemistry
FDSC 431V Internship in Food Science
FDSC 4413 Sensory Evaluation of Food
FDSC 4713 Product Innovation for the Food Scientist
21 hours from concentration requirements (FDSC, FDCU, FDTN) 21
General Electives 3-7
Total Hours 120

## Additional Requirements for Food Technology Concentration (21 hours)

| MATH 2043 | Survey of Calculus $($ ACTS Equivalency $=$ MATH <br> 2203) | 3 |
| :--- | :--- | ---: |
| Completion of a minor to provide multidisciplinary educational $^{\text {background }}{ }^{1}$ | 15 |  |
| General Elective | 3 |  |

Total Hours21
${ }^{1}$ Students must declare chosen minor with the Bumpers College Dean's Office. Visit the list of Bumpers College minors (p. 128).

## Food Science B.S.A., Food Technology Concentration

## Nine-Semester Degree Program

Because the Food Technology Concentration requires an internship one summer, students cannot enroll in an Eight-Semester Program. See the Eight-Semester Degree Policy (p. 67) for requirements of the eightsemester programs. Students in the Food Technology Concentration must also complete a minor to provide multidisciplinary educational background
(minor must be declared with Bumpers College Dean's Office). Where not specified, select courses from the state minimum core (p. 81) list.


| First Year | Fall | SpringUnits <br> Summer |  |
| :--- | ---: | ---: | ---: |
| UNIV 1001 University Perspectives | 1 |  |  |
| ENGL 1013 Composition I (ACTS | 3 |  |  |

Equivalency = MATH 1103) (Satisfies
General Education Outcome 2.1)
Satisfies General Education Outcome 3.4:

BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology
Laboratory (ACTS Equivalency $=$ BIOL 1014 Lab)
FDSC 1011 Exploring Topics in Food
Science
ENGL 1023 Composition II (ACTS
Equivalency $=$ ENGL 1023) (Satisfies
General Education Outcome 1.1)
Satisfies General Education Outcome
3.4:

CHEM 1103 University Chemistry I
(ACTS Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)
FDSC 1103 Introduction to Food
Science
FDSC 2523 Sanitation and Safety in 3
Food Processing Operations
Course required for selected minor 3
Year Total: 12

| Second Year | Fall | Units <br> Spring <br> Summer |  |
| :--- | ---: | ---: | ---: |
| MATH 2043 Survey of Calculus (ACTS | 3 |  |  |

Equivalency = MATH 2203)
CHEM 1123 University Chemistry II 4
(ACTS Equivalency = CHEM 1424
Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424 Lab)
Course required for selected minor 3
Course required for selected minor 3
General Elective 3
STAT 2303 Principles of Statistics
(ACTS Equivalency $=$ MATH 2103)

| BIOL 2013 General Microbiology (ACTS | 4 |
| :--- | ---: |
| Equivalency = BIOL 2004 Lecture) |  |
| \& BIOL 2011L General Microbiology |  |
| Laboratory (ACTS Equivalency = BIOL |  |
| 2004 Lab) |  |
| CHEM 2613 Organic Physiological | 4 |
| Chemistry (ACTS Equivalency = CHEM |  |
| 1224 Lecture) |  |
| \& CHEM 2611L Organic Physiological |  |
| Chemistry Laboratory (ACTS |  |
| Equivalency = CHEM 1224 Lab) |  |
| Course required for selected minor |  |
| General Elective | 3 |
| Year Total: |  |
|  | 16 |


| Third Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| CHEM 3813 Elements of Biochemistry | 3 |  |  |
| FDSC 3103 Principles of Food Processing | 3 |  |  |
| FDSC 4304 Food Chemistry | 4 |  |  |
| State Minimum Core in Fine Arts; <br> Humanities; Social Science; or U.S. History or Government ${ }^{1,2,3,4}$ | 3 |  |  |
| State Minimum Core in Fine Arts; | 3 |  |  |

Humanities; Social Science; or U.S. History or Government ${ }^{1,2,3,4}$
FDSC 3202 Introduction to Food Law
FDSC 4113 Food Analysis
\& FDSC 4111L Food Analysis Lab
Course required for selected minor
State Minimum Core in Fine Arts;
Humanities; Social Science; or U.S. History or Government ${ }^{1,2,3,4}$
State Minimum Core in Fine Arts; Humanities; Social Science; or U.S. History or Government ${ }^{1,2,3,4}$
FDSC 431V Internship in Food Science Year Total:

| Fourth Year | Fall |
| :--- | ---: |
| FDSC 4122 Food Microbiology | 3 |
| \& FDSC 4121L Food Microbiology Lab |  |
| FDSC 4413 Sensory Evaluation of Food | 3 |
| Communication Intensive Course, 6 | 3 |
| State Minimum Core in Fine Arts; $^{\text {Humanities; Social Science; or U.S. }}$ | 3 |
| History or Government $^{1,2,3,4}$ |  |
| General Elective $^{6}$ |  |

Units Summer the Food Scientist (Satisfies General Education Outcome 6.1)
Communication Intensive Course ${ }^{5,6}$

State Minimum Core in Fine Arts;
Humanities; Social Science; or U.S.
History or Government ${ }^{1,2,3,4}$
General Electives ${ }^{6} 3$
Year Total: 15

## Total Units in Sequence:

1 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
2 The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
${ }^{3}$ One Social Science Elective should be selected from the following list of courses in order to satisfy General Education Outcomes 3.3 and 4.1:
ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093,
HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
4 The U.S. History or Government Elective courses which satisfy General Education Outcome 4.2 include: HIST 2003, HIST 2013, or PLSC 2003.
${ }^{5}$ Recommend ACOM 3143, ACOM 3143H, AGED 4003 or COMM 1313 to satisfy General Education Outcome 1.2. See academic adviser for complete list of Communication Intensive courses.
6 Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with the academic adviser when making course selections.

## Requirements for B.S.A. in Food Science with Food and Culinary Sciences Concentration <br> Major Requirements

State minimum core (p. 81) and discipline-specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)
Communication (12 hours)
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
Select two courses from approved list of communication intensive courses
U.S. History and Government (3 hours) 3

Select 3 hours US History from University Core
Mathematics and Statistics (6 hours) 6
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)

STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

Physical and Biological Sciences (23-27 hours)

BIOL 1543 Principles of Biology (ACTS Equivalency $=\mathrm{BIOL}$ \& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
BIOL 2013 General Microbiology (ACTS Equivalency = BIOL \& BIOL 2011L 2004 Lecture)
and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)
CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)
CHEM 1123 University Chemistry II (ACTS Equivalency = \& CHEM 1121LCHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
CHEM 3813 Elements of Biochemistry
CHEM 2613 Organic Physiological Chemistry (ACTS
\& CHEM 2611LEquivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency $=$ CHEM 1224 Lab)
or CHEM 36 Organic Chemistry I
\& CHEM 36(and Organic Chemistry I Laboratory
\& CHEM 361and Organic Chemistry II
\& CHEM 361and Organic Chemistry II Laboratory
Fine Arts and Humanities ( 6 hours)
Select 3 hours Fine Arts from State Minimum Core
Select 3 hours Humanities from State Minimum Core
Social Sciences (9 hours)
Select 9 hours Social Sciences from State Minimum Core
University Requirement (1 hr)
UNIV 1001 University Perspectives
Food Science Degree Requirements ( 32 hours) 32
FDSC 1011 Exploring Topics in Food Science
FDSC 1103 Introduction to Food Science
FDSC 2523 Sanitation and Safety in Food Processing Operations
FDSC 3103 Principles of Food Processing
FDSC 3202 Introduction to Food Law
FDSC 4113 Food Analysis
\& FDSC 4111L and Food Analysis Lab
FDSC 4122 Food Microbiology
\& FDSC 4121L and Food Microbiology Lab
FDSC 4304 Food Chemistry
FDSC 431V Internship in Food Science
FDSC 4413 Sensory Evaluation of Food
FDSC 4713 Product Innovation for the Food Scientist
21 hours from concentration requirements (FDSC, FDCU, FDTN) 21

| General Electives | 3-7 |
| :--- | ---: |

Total Hours

## Additional Requirements for Food and Culinary Sciences

## Concentration (21 hours)

FDST 1023 Foundations ${ }^{1} 3$
FDST 1033 Sauces ${ }^{1} 3$
FDST 1043 Methods ${ }^{1} 3$

FDST 1203 Baking ${ }^{1} 3$
FDST 1403 Butchery \& Charcuterie ${ }^{1} 3$
FDST 2003 World Cuisine ${ }^{1} 3$
MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 3 2203)

## Total Hours

${ }^{1}$ Indicates NorthWest Arkansas Community College course codes.

## Food Science B.S.A., Food and Culinary Sciences Concentration <br> Nine-Semester Degree Program

Because the Food and Culinary Sciences Concentration requires an internship one summer, students cannot enroll in an Eight-Semester Program. See the Eight-Semester Degree Policy (p. 67) for requirements of the eight-semester programs.

| First Year | Fall | Spring | Units <br> Summer |
| :--- | ---: | ---: | ---: |
| UNIV 1001 University Perspectives | 1 |  |  |
| ENGL 1013 Composition I (ACTS | 3 |  |  |

## Equivalency = MATH 1103) (Satisfies

General Education Outcome 2.1)
Satisfies General Education Outcome 9 3.4:

BIOL 1543 Principles of Biology (ACTS
4
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology
Laboratory (ACTS Equivalency $=\mathrm{BIOL}$ 1014 Lab)
FDSC 1011 Exploring Topics in Food 1
Science
ENGL 1023 Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies
General Education Outcome 1.1)
Satisfies General Education Outcome
3.4:

CHEM 1103 University Chemistry I
(ACTS Equivalency = CHEM 1414
Lecture)
\& CHEM 1101L University Chemistry I
Laboratory (ACTS Equivalency $=$ CHEM
1414 Lab)
FDSC 1103 Introduction to Food
Science
FDSC 2523 Sanitation and Safety in 3
Food Processing Operations
FDST 1023 Foundations ${ }^{1}$
Year Total:

3

| Second Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) | 3 |  |  |
| CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) <br> \& CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency $=$ CHEM 1424 Lab) | 4 |  |  |
| FDST 1033 Sauces ${ }^{1}$ | 3 |  |  |
| FDST 1043 Methods ${ }^{1}$ | 3 |  |  |
| FDST 1203 Baking ${ }^{1}$ | 3 |  |  |
| STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103) |  | 3 |  |
| BIOL 2013 General Microbiology (ACTS <br> Equivalency = BIOL 2004 Lecture) \& BIOL 2011L General Microbiology Laboratory (ACTS Equivalency $=\mathrm{BIOL}$ 2004 Lab) |  | 4 |  |
| CHEM 2613 Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) <br> \& CHEM 2611L Organic Physiological Chemistry Laboratory (ACTS <br> Equivalency = CHEM 1224 Lab) |  | 4 |  |
| FDST 1403 Butchery \& Charcuterie ${ }^{1}$ |  | 3 |  |
| General Elective |  | 1 |  |
| Year Total: | 16 | 15 |  |
| Third Year |  |  | Units |
|  | Fall | Spring | Summer |
| CHEM 3813 Elements of Biochemistry | 3 |  |  |
| FDSC 3103 Principles of Food Processing | 3 |  |  |
| FDSC 4304 Food Chemistry | 4 |  |  |
| State Minimum Core in Fine Arts; Humanities; Social Science; or U.S. History or Government ${ }^{2,3,4,5}$ | 3 |  |  |
| State Minimum Core in Fine Arts; <br> Humanities; Social Science; or U.S. History or Government ${ }^{2,3,4,5}$ | 3 |  |  |
| FDSC 3202 Introduction to Food Law |  | 2 |  |
| FDSC 4113 Food Analysis \& FDSC 4111L Food Analysis Lab |  | 4 |  |
| FDST 2003 World Cuisine ${ }^{1}$ |  | 3 |  |
| State Minimum Core in Fine Arts; Humanities; Social Science; or U.S. History or Government ${ }^{2,3,4,5}$ |  | 3 |  |
| State Minimum Core in Fine Arts; Humanities; Social Science; or U.S. History or Government ${ }^{2}$, $3,4,5$ |  | 3 |  |
| FDSC 431V Internship in Food Science |  |  | 3 |
| Year Total: | 16 | 15 | 3 |


| Fourth Year |  |  | Units |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| FDSC 4122 Food Microbiology | 3 |  |  |
| \& FDSC 4121L Food Microbiology Lab |  |  |  |
| FDSC 4413 Sensory Evaluation of Food | 3 |  |  |
| Communication Intensive Course ${ }^{6}$ | 3 |  |  |
| State Minimum Core in Fine Arts; <br> Humanities; Social Science; or U.S. History or Government ${ }^{2,3,4,5}$ | 3 |  |  |
| General Elective ${ }^{7}$ | 3 |  |  |
| FDSC 4713 Product Innovation for the Food Scientist (Satisfies General Education Outcome 6.1) | 3 |  |  |
| Communication Intensive Course ${ }^{6}$ | 3 |  |  |
| State Minimum Core in Fine Arts; Humanities; Social Science; or U.S. History or Government ${ }^{2,3,4,5}$ | 3 |  |  |
| General Elective ${ }^{7}$ | 3 |  |  |
| Year Total: | $15 \quad 12$ |  |  |
| Total Units in Sequence: |  |  | 120 |
| ${ }^{1}$ Indicates NorthWest Arkansas Community College course codes. <br> 2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H. |  |  |  |
| ${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C. |  |  |  |
| ${ }^{4}$ One Social Science Elective should be selected from the following list of courses in order to satisfy General Education Outcomes 3.3 and 4.1: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033. |  |  |  |
| ${ }^{5}$ The U.S. History or Government Elective courses which satisfy General Education Outcome 4.2 include: HIST 2003, HIST 2013, or PLSC 2003. |  |  |  |
| ${ }^{6}$ Recommend ACOM 3143, AGED 4003 or COMM 1313 to satisfy General Education Outcome 1.2. See academic adviser for complete list of Communication Intensive courses. |  |  |  |
| Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with the academic adviser when making course selections. |  |  |  |

test

## Minor in Food Science (FDSC-M)

The Food Science Minor consists of 18 semester hours to include:
The following courses are required for a minor in Food Science:

| FDSC 3103 | Principles of Food Processing | 3 |
| :--- | :--- | :--- |
| FDSC 4122 | Food Microbiology | 3 |
| \& FDSC 4121L | and Food Microbiology Lab |  |
| FDSC 4304 | Food Chemistry | 4 |

and a minimum of 8 hours selected from the following courses (at least 5 hours must be 3000-4000 level coursework):

| FDSC 1103 | Introduction to Food Science |
| :--- | :--- |
| FDSC 2401 | Uncorked: Vines to Wines |
| FDSC 2401 H | Honors Uncorked: Vines to Wines |
| FDSC 2603 | The Science of Cooking |
| FDSC 2701 | Food for Health |
| FDSC 3202 | Introduction to Food Law |
| FDSC 4113 | Food Analysis |
| \& FDSC 4111L and Food Analysis Lab |  |
| FDSC 4413 | Sensory Evaluation of Food |
| FDSC 4754 | Engineering Principles of Food Processing |
| NUTR 4213 | Advanced Nutrition I |

## Total Hours

18
A student planning to minor in food science must consult a Department of Food Science adviser.

## Requirements for Certificate of Proficiency in Brewing Science

This program is designed to provide students with a theoretical and practical introduction to brewing and fermentation. This certificate requires 15 credit hours of work, selected from the list below. Students must take two courses in brewing, one lecture and one lab, complete three credit hours of an internship, research, or special problems course, and then take two additional courses in FDSC, BIOL, CHEM, BENG, or CHEG. To broaden the student's exposure to the skills needed in brewing and fermentation, for currently enrolled undergraduate students, at least one of these additional courses must be in a different department from the department of the student's major, and that course must also be outside of those already required for the student's major(s). If the student already holds a degree, the course must be a new one outside of the previous degree program.

## Required courses

FDSC 2723 Introduction to Brewing Science 3
BIOL 2723L
Required internship, special problems, or honors research project
Internship
Students could participate in an approved three credit hour internship with a brewing industry partner. A three credit hour internship should involve approximately 120-130 hours of work with the partner. The internship need not be completed in a single semester, although that is acceptable. At the end of the final semester of the internship, students would have to present a written and oral report of the work performed and lessons learned.
Special problems or research hours

Students could complete three credit hours working on a practical research problem under the supervision of a faculty member in FDSC, BISC, CHEM, BENG, or CHEG. The topic of this work should be approved for relevance to the certificate before the work begins and reviewed if it changes substantially during the course of the work. Work that involves industry partners is particularly encouraged. At the end of the final semester of the work, students would have to present a written and oral report of the work performed and lessons learned. Credit hours and work done for an honors degree can satisfy this requirement, but if honors work is used, it must include at least one credit hour in three different semesters.

## Elective courses

BIOL 2013 General Microbiology (ACTS Equivalency = BIOL 2004 Lecture)
or BIOL 312:
BIOL 2533 Cell Biology
or BIOL 2323General Genetics
CHEM 2613 Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture)
or CHEM 36 Organic Chemistry II
FDSC 3103 Principles of Food Processing
FDSC 2603 The Science of Cooking
FDSC 2523 Sanitation and Safety in Food Processing Operations
FDSC 4122 Food Microbiology
CHEG 2133 Fluid Mechanics
CHEG 3144 Heat and Mass Transfer
BENG 3113 Measurement and Control for Biological Systems
BENG 3733 Transport Phenomena in Biological Systems
HIST 1213
Total Hours

## Faculty

Acuff, Jennifer C., Ph.D. (Virginia Tech), M.S. (Kansas State University), B.S. (Abilene Christian University), Assistant Professor, 2020.

Atungulu, Griffiths Odhiambo, Ph.D., M.S. (Iwate University, Japan),
B.S. (Jomo Kenyatta University of Agriculture and Technology, Kenya),

Associate Professor, 2013, 2019.
Baum, Jamie I., Ph.D., B.S. (University of Illinois-Urbana-Champaign), Associate Professor, 2011, 2018.
Crandall, Philip G., Ph.D., M.S. (Purdue University), B.S. (Kansas State University), Professor, 1989, 1997.
Gibson, Kristen Elizabeth, Ph.D. (Johns Hopkins University), B.S. (University of Central Florida), Associate Professor, 2012, 2017.
Hettiarachchy, Navam S., Ph.D. (University of Hull, England), M.S.
(Edinburgh University, Scotland), B.S. (University of Madras, India),
University Professor, 1992, 2006.
Howard, Luke R., Ph.D., M.S. (University of Arkansas), B.S. (Purdue University), Professor, 2002.
Lee, Sun-Ok, Ph.D., M.S. (lowa State University), M.S., B.S. (Dongduk
Women's University, South Korea), Associate Professor, 2008, 2016.
Morawicki, Ruben O., Ph.D. (Pennsylvania State University), M.Eng. (State University of New York-Buffalo), B.S. (Universidad Nacional de Misiones, Argentina), Associate Professor, 2006, 2016.
Seo, Han-Seok, Dr.rer.Medic. (Technische Universität Dresden,
Germany), Ph.D., M.Sc. (Seoul National University, South Korea), B.S.
(Korea University, Seoul, South Korea), Associate Professor, 2012, 2017.

Siebenmorgen, Terrence J., Ph.D. (University of Nebraska-Lincoln), M.S.Ag.E. (Purdue University), B.S.Ag.E. (University of Arkansas), Distinguished Professor, 1984, 2015.
Subbiah, Jeyamkondan, Ph.D. (Oklahoma State University), M.S. (University of Manitoba, Canada), B.E. (Tamil Nadu Agricultural University, India), Professor, 2019.
Ubeyitogullari, Ali, Ph.D. (University of Nebraska-Lincoln), M.S., B.S. (Middle East Technical University, Turkey), Assistant Professor, 2021.
Wang, Ya-Jane, Ph.D. (lowa State University), M.S. (University of Minnesota-Twin Cities), B.S. (National Taiwan University), Professor, 1999, 2009.

## Courses

FDSC 1011. Exploring Topics in Food Science. 1 Hour.
Introduces the depth and scope of Food Science as a profession. This course emphasizes the importance of science in processing and preservation of food and discusses current topics and issues. Practical information on food processing, composition, additives, labeling, environmental issues, regulations, safety, sensory analysis, and health benefits will be provided. Curriculum offerings in Food Science will be related to job responsibilities as a Food Scientist. Lecture/discussions, 2 hours per week for 8 weeks. (Typically offered: Fall)
FDSC 1103. Introduction to Food Science. 3 Hours.
This course is designed to provide students with a general application and understanding of current issues associated with food products and food ingredients. Discussions will focus on controversial subjects involving food products, food additives, food safety and preservation techniques based on scientific principles and popular belief. Lecture/discussions/demonstrations, 3 hours per week. (Typically offered: Spring)

## FDSC 2201. The Science of Chocolate. 1 Hour.

The objective of this course is to introduce you to the science and technology of chocolate production. You will learn the history, chemistry, and physics of chocolate. This course will provide you with an understanding of chocolate production steps, including cacao bean harvesting, fermentation, drying, roasting, grinding, and manufacturing, and how these unit operations affect chocolate texture and flavor. Special focus will be given to fat and sugar crystallization, sensory evaluation, and sustainability of chocolate production. (Typically offered: Spring)

FDSC 2201H. Honors The Science of Chocolate. 1 Hour.
The objective of this course is to introduce you to the science and technology of chocolate production. You will learn the history, chemistry, and physics of chocolate. This course will provide you with an understanding of chocolate production steps, including cacao bean harvesting, fermentation, drying, roasting, grinding, and manufacturing, and how these unit operations affect chocolate texture and flavor. Special focus will be given to fat and sugar crystallization, sensory evaluation, and sustainability of chocolate production. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to FDSC 2201.
FDSC 2401. Uncorked: Vines to Wines. 1 Hour.
This introductory course is designed to provide students with an understanding of the basic concepts of growing grapes and winemaking, including history, grape growing, cultivars, chemistry, wine microorganisms, fermentation, winery operations, wine marketing, and the sensory and appreciation of wine. Coursework is expected to integrate lecture and guest presenters with supplement reading assignments. This course will not include wine tasting, therefore there are no age restrictions for enrollment. (Typically offered: Fall)

## FDSC 2401H. Honors Uncorked: Vines to Wines. 1 Hour.

This introductory course is designed to provide students with an understanding of the basic concepts of growing grapes and winemaking, including history, grape growing, cultivars, chemistry, wine microorganisms, fermentation, winery operations, wine marketing, and the sensory and appreciation of wine. Coursework is expected to integrate lecture and guest presenters with supplement reading assignments. This course will not include wine tasting, therefore there are no age restrictions for enrollment. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to FDSC 2401.
FDSC 2523. Sanitation and Safety in Food Processing Operations. 3 Hours.
Topics covered will provide an understanding of the control of microbial, chemical, and physical food hazards as well as emerging food safety issues. Course will include a discussion of sanitation, cleaners and sanitizers, sanitary equipment and facility designs, and microbial growth and control in food processing operations. Lecture/discussion. (Typically offered: Spring)
FDSC 2603. The Science of Cooking. 3 Hours.
In recent years science has found its way into the kitchen and cooking into laboratories and food processing plants. This course is designed to integrate science and cooking to help students appreciate the chemical and physical properties of foods and understand how the processes used when handling, preparing, and storing foods affect these properties. (Typically offered: Fall)

## FDSC 2701. Food for Health. 1 Hour.

The course is designed for students interested in how foods affect one's health. This course provides students with a background of functional food that will enable them to understand, discuss, and evaluate functionality of food in relation to health. This class is designed to appeal to students studying food science, nutrition, biology, chemistry, nursing, and health and human performance. (Typically offered: Spring)

## FDSC 2723. Introduction to Brewing Science. 3 Hours.

An introduction to the biology and chemistry of fermentation, with an emphasis on beer brewing. Styles, flavors, and quality characteristics of beer will be discussed. The history, legal aspects, and economic impacts of homebrewing as well as craft and industrial brewing will be covered. Coursework is expected to integrate lectures and guest presenters with supplemental reading assignments. This course will not include beer tasting, therefore there are no age restrictions for enrollment.
Prerequisite: (CHEM 1123 or CHEM 1073) and (BIOL 1543 or BIOL 1584). (Typically offered: Spring)

## FDSC 3103. Principles of Food Processing. 3 Hours.

The course is designed as an overview of the unit; food processing operations common to all types of food processing plants. Examples will be drawn from international food processing operations processing fruits and vegetables, poultry and meats, and oil seeds and cereal grains. Emphasis on oral communication and critical thinking skills. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L and (MATH 2043 or MATH 2554). (Typically offered: Fall)

## FDSC 3202. Introduction to Food Law. 2 Hours.

Discussion of government laws and regulations affecting the manufacture of food. Emphasis is on federal regulations relating to food safety, labeling, and the FDA. Discussion relates to practical use of food law. Lecture 2 hours per week. (Typically offered: Spring)

## FDSC 3202H. Honors Introduction to Food Law. 2 Hours.

Discussion of government laws and regulations affecting the manufacture of food.
Emphasis is on federal regulations relating to food safety, labeling, and the FDA.
Discussion relates to practical use of food law. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to FDSC 3202.
FDSC 400V. Special Problems. 1-4 Hour.
Investigation of assigned problems in food science. Prerequisite: Junior standing.
(Typically offered: Fall, Spring and Summer)

## FDSC 4111L. Food Analysis Lab. 1 Hour.

Laboratory exercises providing students with experience of analytical techniques and instrumentation used in food analysis. Laboratory 3 hours per week. Corequisite:
FDSC 4113. Prerequisite: FDSC 4304 and CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Spring)

## FDSC 4113. Food Analysis. 3 Hours.

Methods of analysis, instrumentation, and laboratory techniques for measuring the chemical composition of raw and value-added products. Lecture 3 hours.
Corequisite: FDSC 4111L. Prerequisite: FDSC 4304 and CHEM 1123 and
CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Spring)

FDSC 4121L. Food Microbiology Lab. 1 Hour.
A hands-on laboratory course designed to teach students microbiological techniques and certain enumeration and plating techniques of specific food spoilage and pathogenic bacteria. Prerequisite: BIOL 2013 and BIOL 2011L. Pre- or Corequisite: FDSC 4122. (Typically offered: Fall)
FDSC 4122. Food Microbiology. 2 Hours.
The study of food microbiology including classification/ taxonomy, contamination, preservation and spoilage of different kinds of foods, pathogenic microorganisms, food poisoning, sanitation, control and inspection and beneficial uses of microorganisms. Prerequisite: BIOL 2013 and BIOL 2011L or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with BIOL 4122.

## FDSC 4304. Food Chemistry. 4 Hours.

Water, carbohydrates, lipids, proteins, vitamins, and minerals in foods; biochemical and functional properties, enzymes, food additives (emulsifiers, pigments, colors, flavors, preservatives, and sweeteners) and texture as related to properties in food systems and during processing. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Fall)

## FDSC 431V. Internship in Food Science. 1-4 Hour.

The Food Science Internship is a supervised practical work experience with a food industry, research program or governmental agency to gain professional experience and insight into career opportunities. Prerequisite: Junior standing and consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## FDSC 4413. Sensory Evaluation of Food. 3 Hours.

Principles and procedures for sensory evaluation of food. Appropriate uses of specific tests are discussed, along with physiological, psychological, and environmental factors affecting sensory verdicts. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: STAT 2303 or BUSI 1033 or STAT 2823 or PSYC 2013. (Typically offered: Fall)
FDSC 4513. Cereal Processing Technology. 3 Hours.
Fundamental concepts of heat and mass transport in grains; cereal/grain structure, property and composition; cereal/grain processing systems and technology; cereal/ grain co-product processing technology and value recovery; cereal/grain quality metrics, grading standards and food safety assurance. Prerequisite: FDSC 3103 or FDSC 4754 or with instructor permission. (Typically offered: Spring Odd Years)

## FDSC 4713. Product Innovation for the Food Scientist. 3 Hours.

This is a capstone course integrating knowledge developed in Food Science to the development of new food products. This course will take an integrated multidisciplinary approach to developing innovative food products and will provide learning experiences in new product development and Research \& Development. Topics include product formulation, ingredient interactions, sensory analysis, packaging, labeling, food safety and food law. Corequisite: Lab component. Preor Corequisite: FDSC 4113 and FDSC 4111L. Prerequisite: Senior standing, FDSC 4304, FDSC 3103, and FDSC 4413. (Typically offered: Spring)
FDSC 472V. Special Topics in Food Science. 1-4 Hour.
Discussion focused on selected topics of particular fields of raw product physiology, food processing, chemistry, physiology, microbiology, evaluation, sensory analysis, and preservation. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.
FDSC 4754. Engineering Principles of Food Processing. 4 Hours.
Basic mechanics of refrigeration, temperature controls, materials handling and mechanical problems as applied to foods and food processing. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 1213, MATH 2554, PHYS 2013, PHYS 2011L and FDSC 3103. (Typically offered: Spring)

## Horticulture (HORT)

Wayne A. Mackay<br>Head of the Department<br>316 Plant Sciences Building<br>479-575-2603<br>Department of Horticulture Website (http://hort.uark.edu/)

The Department of Horticulture offers a broad, science-based degree with comprehensive and technical training: Horticulture, Landscape and Turf Sciences (HLTS).

Horticulture, landscape, and turf management involves selection, production, management, marketing, use, and research of ornamental crops (shrubs, trees, flowers, and turf), edible crops (herbs, vegetables, and fruits) and turf grasses for the economic, nutritional, aesthetic and recreational well-being of society. The major provides education and training in basic and applied sciences, arts and humanities, communication, and business and economics to provide an understanding of the underlying principles in plant growth and development and use of new technologies, and the operation of a horticultural enterprise. In consultation with an academic adviser and mentor, students may individually focus their academic programs through required and elective courses to focus training in specialized areas such as production, greenhouse and floriculture sciences, turfgrass management, golf course management, nursery production and management, edible crop production, pest management, sales and support services, education and training, and horticultural consulting. An internship in the industry is required to gain practical, hands-on experience.

Job opportunities for horticulturists include horticulture crop production and management, horticulture merchandising and business, consulting, inspection, research, teaching, Extension, communications, allied industries serving horticultural producers, journalism, and developing private business. Students who specialize in landscape and aspects of ornamental horticulture will be prepared for careers in the landscape service industry, landscape nurseries, landscape design firms, private and public gardens, and public agencies such as parks and recreation. Job opportunities for students studying turfgrass management include golf course superintendent, sports field manager, turfgrass science companies, seed or sod production, commercial landscape turfgrass
management, research, sales, teaching, or private consulting. Advanced study may be required for some careers.

## Requirements for a Major in Horticulture, Landscape and Turf Sciences (HLTS)

The HLTS major will consist of 120 hours to include the following courses that meet the state minimum core (p. 81) and discipline specific general education (p. 72) requirements:
(Course work that meets state minimum core requirements is in bold.)

| Communication | s 6 |
| :---: | :---: |
| ENGL 1013 | $\begin{aligned} & \text { Composition I (ACTS Equivalency = ENGL } \\ & \text { 1013) } \end{aligned}$ |
| ENGL 1023 | $\begin{aligned} & \text { Composition II (ACTS Equivalency = ENGL } \\ & \text { 1023) } \end{aligned}$ |
| U.S. History and | Government 3 |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |
| HIST 2013 | History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |
| PLSC 2003 | American National Government (ACTS Equivalency = PLSC 2003) |
| Mathematics | 3-4 |
| MATH 1203 | College Algebra (ACTS Equivalency = MATH 1103) (or higher level math) |
| Physical and Bio | ological Sciences 12-16 |
| BIOL 1543 \& BIOL 1541L | Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) |
| CHEM 2613 <br> \& CHEM 2611 | Organic Physiological Chemistry (ACTS <br> LEquivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory <br> (ACTS Equivalency = CHEM 1224 Lab) |
| Select from on | e Chemistry group: |
| CHEM 1073 <br> \& CHEM 1071 | Fundamentals of Chemistry (ACTS Equivalency L= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) |
| OR |  |
| CHEM 1103 <br> \& CHEM 1101 | University Chemistry I (ACTS Equivalency = LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) |
| AND |  |
| CHEM 1123 <br> \& CHEM 1121 | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |
| Fine Arts and Hu | umanities (6 hours) 6-8 |
| Fine Arts Cor state minimu | Course (Select at least 3 hours from Fine Arts $m$ core) |
| Humanities C Humanities | ore Course (Select at least 3 hours from tate minimum core) |
| Social Sciences | 9 |

Select 9 hours from Social Science state minimum core including at least one of the following:
AGEC 1103 Principles of Agricultural Microeconomics
AGEC 2103 Principles of Agricultural Macroeconomics
ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)
ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)
ECON 2143 Basic Economics: Theory and Practice
HLTS Core Requirements (30-31 hours)
UNIV 1001 University Perspectives 1
COMM $1313 \quad$ Public Speaking (ACTS Equivalency $=$ SPCH 3 1003)

Communication Intensive Elective (3 hours - see advisor for approved 3 list of courses)
CSES 2203
Soil Science
\& CSES 2201L and Soil Science Laboratory
HORT 2003 Principles of Horticulture (with lab component) 3
HORT 2101 Horticultural Career Development 1
HORT 4403 Plant Propagation (with lab component) 3
HORT 4413 Horticulture Physiology 3
HORT 462V Horticulture, Landscape, Turf Sciences Internship 1 Experience
HORT 472V Horticulture, Landscape, Turf Sciences Internship 2 Assessment
Select two of the following:
CSES 4143 Principles of Weed Control
ENTO 3013 Introduction to Entomology
PLPA 3003 Principles of Plant Pathology
\& PLPA 3001L and Principles of Plant Pathology Laboratory
Horticulture Electives
Select 18 hours from the following:
HORT 1303 Introduction to Floral Design
HORT 2303 Introduction to Turfgrass Management
HORT 3103 Woody Landscape Plants (with lab component)
HORT 3113 Herbaceous and Indoor Plant Materials (with lab component)
HORT 3123 International Horticulture
HORT 3303 Vegetable Crops
HORT 3403 Turfgrass Management (with lab component)
HORT 3503 Sustainable and Organic Horticulture
HORT 4033 Professional Landscape Installation and Construction
HORT 4043 Professional Landscape Management
HORT 4103 Fruit Production Science and Technology (with lab component)
HORT 4503 Sustainable Nursery Production
HORT 4603 Practical Landscape Planning
HORT 4703 Greenhouse Management and Controlled Environment Horticulture
HORT 4701L Greenhouse Management and Controlled Environment Horticulture Laboratory
HORT 4903 Golf and Sports Turf Management (with lab component)
HORT 400V Special Problems
HORT 401V $\quad$ Special Topics in Horticulture, Turf or Landscape
Discipline-Related Electives

Select at least 12 hours from the following:
ASTM 3102 Small Power Units/Turf Equipment \& ASTM 3101L and Small Power Units/Turf Equipment Laboratory
ASTM 3153 Surveying in Agriculture and Forestry
ASTM 4973 Irrigation (with lab component)
ANSC/POSC Principles of Genetics
3123
HORT 1103 Plants, People and You
HORT 400V Special Problems
HORT 401V Special Topics in Horticulture, Turf or Landscape
LARC 3914 Sustainable Design and Construction: Remediation and Plants on Structure
LARC 2113 Design Visualization, Inquiry and Communications
PHYS 1023 Physics and Human Affairs
\& PHYS 1021Land Physics and Human Affairs Laboratory (or higher level)
WCOB course electives (up to 9 hours)
or any AGEC, ASTM, BIOL, CHEM, CSES, ENSC, ENTO, FDSC, HORT, PLPA class not taken in any other elective group.

| General Electives | $12-21$ |
| :--- | ---: |
| Total Hours | 120 |

## Horticulture, Landscape and Turf Sciences

 B.S.A.
## Nine-Semester Degree Plan

Students wishing to follow the degree plan should see the Eight-Semester Degree Policy ( p .67 ) for university requirements of the program.

| First Year | Fall | Units <br> Spring |  |
| :--- | ---: | ---: | ---: |
| UNIV 1001 University Perspectives | 1 |  |  |
| MATH 1203 College Algebra (ACTS | 3 |  |  |
| Equivalency = MATH 1103) (or |  |  |  |
| higher level math) (Satisfies General |  |  |  |
| Education Outcome 2.1) |  |  |  |
| ENGL 1013 Composition I (ACTS <br> Equivalency = ENGL 1013) (Satisfies <br> General Education Outcome 1.1) | 3 |  |  |
| Satisfies General Education Outcome <br> 3.4: |  |  |  |
| BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology <br> Laboratory (ACTS Equivalency = BIOL <br> 1014 Lab) <br> U.S. History or Government State <br> Minimum Core Elective (Satisfies <br> General Education Outcome 4.2) | 4 |  |  |
| ENGL 1023 Composition II (ACTS <br> Equivalency = ENGL 1023) (Satisfies <br> General Education Outcome 1.1) <br> HORT 2003 Principles of Horticulture |  |  |  |

Fine Arts State Minimum Core Elective (Suggest LARC 1003 Basic Course in the Arts: The American Landscape)
(Satisfies General Education Outcome $3.1)^{1}$
Social Science State Minimum Core Elective (Satisfies General Education Outcome 3.3)
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies
General Education Outcomes 1.2 and 5.1)

Year Total: 14

| Second Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| Satisfies General Education Outcomer |  |  |
| 3.4: | 4 |  |
| CHEM 1073 Fundamentals of | 4 |  |

Chemistry (ACTS Equivalency = CHEM
1214 Lecture)
\& CHEM 1071L Fundamentals
of Chemistry Laboratory (ACTS
Equivalency = CHEM 1214 Lab)
Communication Intensive Class
3
Horticulture Electives 6
Discipline-related Elective 3
Humanities State Minimum Core 3-4
Elective (Suggest PHIL 2003 Intro
to Philosophy) (Satisfies General
Education Outcome 3.2) ${ }^{2}$
HORT 4413 Horticulture Physiology 3
Discipline-related Elective 3
HORT 2101 Horticultural Career 1
Development
General Electives 4
Year Total: 16

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

CSES 2203 Soil Science 4
\& CSES 2201L Soil Science Laboratory
Pest Management Elective 3-4
$\begin{array}{lr}\text { Horticulture Elective }{ }^{4} & 3\end{array}$
Social Sciences State Minimum Core 3
Elective (Satisfies General Education
Outcome 3.3)
Discipline-Related Elective ${ }^{4}$ 3
CHEM 2613 Organic Physiological
Chemistry (ACTS Equivalency = CHEM
1224 Lecture)
\& CHEM 2611L Organic Physiological
Chemistry Laboratory (ACTS
Equivalency = CHEM 1224 Lab)
Discipline-Related Elective ${ }^{4}$
HORT 4403 Plant Propagation
Horticulture Elective ${ }^{4}$
HORT 462V Horticulture, Landscape,
Turf Sciences Internship Experience
(Satisfies General Education Outcome
6.1)
Year Total:

Fourth Year

Horticulture Elective ${ }^{4}$
HORT 472V Horticulture, Landscape,
Turf Sciences Internship Assessment
Pest Management Elective
General Electives
Social Science State Minimum Core
Elective (Satisfies General Education
Outcomes 3.3 and 4.1)

## Minor in Horticulture (HORT-M)

The Horticulture minor is only available to students outside the Horticulture, Landscape and Turfgrass Sciences (HLTS) major. The minor will consist of 18 hours to include:

| HORT 2003 | Principles of Horticulture | 3 |
| :--- | :--- | ---: |
| HORT 4403 | Plant Propagation | 3 |
| Select a minimum of 9 hours from the following: | $9-11$ |  |
| HORT 2303 | Introduction to Turfgrass Management |  |
| HORT 3303 | Vegetable Crops |  |


| HORT 400V | Special Problems |  |
| :--- | :--- | :--- |
| HORT 4103 | Fruit Production Science and Technology |  |
| HORT 4503 | Sustainable Nursery Production |  |

## Minor in Landscape Horticulture (LHRT-M)

The Landscape Horticulture minor is only available to students outside the Horticulture, Landscape and Turfgrass Sciences (HLTS) major. The minor will consist of 18 hours to include:

| HORT 2003 | Principles of Horticulture | 3 |
| :---: | :---: | :---: |
| HORT 4043 | Professional Landscape Management | 3 |
| Select 3 hours from the following: |  | 3 |
| HORT 4603 | Practical Landscape Planning |  |
| LARC Studio Course |  |  |
| Select one of the following: |  | 3 |
| HORT 3103 | Woody Landscape Plants |  |
| HORT 3113 | Herbaceous and Indoor Plant Materials |  |
| Select 6-8 hours from the following: |  | 6-8 |
| HORT 2303 | Introduction to Turfgrass Management |  |
| HORT 3103 | Woody Landscape Plants |  |
| HORT 3113 | Herbaceous and Indoor Plant Materials |  |
| HORT 3403 | Turfgrass Management |  |
| HORT 400V | Special Problems |  |
| HORT 4033 | Professional Landscape Installation and Construction |  |
| HORT 4403 | Plant Propagation |  |
| HORT 4503 | Sustainable Nursery Production |  |
| HORT 4703 <br> \& HORT 470 | Greenhouse Management and Controlled Environment Horticulture and Greenhouse Management and Controlled Environment Horticulture Laboratory |  |
| LARC 3734 | Sustainable Design and Construction: Material and Methods of Assembly |  |

## Total Hours

## Minor in Turf Management (TURF-M)

The Turf Management minor is only available to students outside the Horticulture, Landscape and Turfgrass Sciences (HLTS) major. The Turf Management minor is comprised of 18 to 20 hours to include the following:

| HORT 2303 | Introduction to Turfgrass Management | 3 |
| :--- | :--- | :--- |
| HORT 3403 | Turfgrass Management (with lab component) | 3 |
| Select one of the following: | 3 |  |

HORT 4903 Golf and Sports Turf Management (with lab component)
HORT 4913 (with lab component)
Select 3 hours from the following:

| ENTO 3013 | Introduction to Entomology (with lab component) |  |
| :--- | :--- | :--- |
| PLPA 3003 | Principles of Plant Pathology |  |
| \& PLPA 3001L | and Principles of Plant Pathology Laboratory | $6-8$ |
| Select two of the following: |  |  |
| ASTM 4973 | Irrigation |  |
| ASTM 3102 | Small Power Units/Turf Equipment |  |
| \& ASTM 3101L and Small Power Units/Turf Equipment Laboratory |  |  |
| CSES 2203 | Soil Science |  |
| \& CSES 2201L and Soil Science Laboratory |  |  |
| ENTO 3013 | Introduction to Entomology (with lab component) |  |
| PLPA 3003 | Principles of Plant Pathology |  |
| \& PLPA 3001L | and Principles of Plant Pathology Laboratory |  |
| HORT 4903 | Golf and Sports Turf Management (with lab <br> component) |  |
| HORT 4913 | (with lab component) |  |
| HORT 3103 | Woody Landscape Plants (with lab component) |  |
| HORT 4033 | Professional Landscape Installation and <br> Construction |  |

Total Hours
18-20

## Faculty

Bertucci, Matthew, Ph.D., M.S. (North Carolina State University), B.S. (Spring Hill College), Assistant Professor, 2020.
Cato, Aaron J., Ph.D. (University of Arkansas), M.S. (Kansas State
University), B.S. (Arkansas State University), Assistant Professor, 2019.
Clark, John R., Ph.D. (University of Arkansas), M.S., B.S. (Mississippi
State University), Distinguished Professor, 1983, 2016.
Dickson, Ryan W., Ph.D., B.S. (University of Florida), Assistant Professor, 2018.
Karcher, Douglas Edward, Ph.D., M.S. (Michigan State University), B.S. (The Ohio State University), Professor, 2000, 2016.
Mackay, Wayne A., Ph.D. (University of Maryland), M.S. (University of Delaware), B.S. (Virginia Polytechnic Institute and State University), Professor, 2014.
McDonald, Garry Vernon, Ph.D., M.S., B.S.A. (Texas A\&M University), Clinical Assistant Professor, 2016.
McKern, Jacquelyn A., Ph.D., M.S. (University of Arkansas), B.S. (Arkansas Technical University), Associate Professor, 2016.
McWhirt, Amanda L., Ph.D. (North Carolina State University), M.S. (Louisiana State University), B.S. (Tarleton State University), Assistant Professor, 2016.
Philyaw Perez, Amanda, Ph.D., M.P.H. (University of Arkansas for Medical Sciences), B.S. (University of Arkansas at Little Rock), Assistant Professor, 2020.
Richardson, Mike, Ph.D. (University of Georgia), M.S. (Louisiana State University), B.S. (Louisiana Tech University), Professor, 1998, 2007.
Rom, Curt R., Ph.D., M.S. (The Ohio State University), B.S. (University of Arkansas), University Professor, 1989, 2014.
Shi, Ainong, Ph.D. (North Carolina State University), M.S. (Graduate School of Chinese Academy of Agricultural Sciences), B.S. (Zhejiang University), Assistant Professor, 2013.
Worthington, Margaret L., Ph.D. (North Carolina State University), M.S. (University of California-Davis), B.S. (Duke University), Assistant Professor, 2016.

## Courses

HORT 1103. Plants, People and You. 3 Hours.
Plants, People and You is a course designed to introduce students to the world of horticulture, with an emphasis on how plants can be used for food, fun, health, economic value or environmental contribution. (Typically offered: Fall)

## HORT 1303. Introduction to Floral Design. 3 Hours.

Students in this introductory class in Floral Design will learn basic design elements such as line, form, mass, balance, texture and color as used in floral art. Students will gain an appreciation of the various types and species of flowers and foliage used in various floral arrangements such as bouquets and centerpieces. In addition, students will learn common post-harvest handling techniques of fresh cut floral plant material to prolong vase-life from the purchasing stage to the final design. Corequisite: Lab component. (Typically offered: Spring)

## HORT 2003. Principles of Horticulture. 3 Hours.

A course introducing students to the biological and technologies underlying the propagation, production, handling and use of horticultural crops, turf and landscape plants. Students will be introduced to the various disciplines and commodities of horticulture. The use of plants for the benefit of humankind because of their aesthetic and nutritional value will be explored. Previous instruction in Plant Science, Plant Biology, or general Botany is strongly encouraged. Corequisite: Lab component. (Typically offered: Spring)

## HORT 2101. Horticultural Career Development. 1 Hour.

A course which presents concepts necessary for developing a career and becoming a professional in horticulture industries or businesses. Concepts of goal setting, effective communication and interpersonal skills, behaviors and performance, portfolio and resume, development and job hunting skills will be presented. (Typically offered: Spring)

## HORT 2303. Introduction to Turfgrass Management. 3 Hours.

An introductory course in turfgrass management emphasizing turfgrass growth, adaptation, and management. Methods for establishment, fertilization, mowing, cultivation, irrigation, and pest management are presented, and their impact on culture of lawns, golf courses, athletic fields, and other managed turf areas discussed. (Typically offered: Fall)
HORT 3103. Woody Landscape Plants. 3 Hours.
Identification, climatic adaptation and landscape design values of woody ornamental trees, shrubs and vines. Lecture 2 hours per week. Corequisite: Lab component. (Typically offered: Fall)

## HORT 3113. Herbaceous and Indoor Plant Materials. 3 Hours.

Identification, culture, and use of annuals, perennials in landscapes and foliage plants in interiors. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring Odd Years)

## HORT 3123. International Horticulture. 3 Hours.

Considerable globalization of agriculture has occurred over the past several decades, especially in the area of horticultural crops. This course provides a base of knowledge of the international horticulture industry focusing on principles and practices of development and trade of horticultural crops. (Typically offered: Spring)

## HORT 3303. Vegetable Crops. 3 Hours.

General course in vegetable crops with attention to the principles underlying methods of production and handling related to yields and quality of the products. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: HORT 2003 and CSES 2203. (Typically offered: Fall Odd Years)

## HORT 3403. Turfgrass Management. 3 Hours.

Cultural and management practices of commercial and residential lawns. Principles and practices of mowing, fertilizing, irrigating, and control of weed, disease, and insects. Identification of turfgrass; equipment selection. Corequisite: Lab component. Prerequisite: HORT 2303. (Typically offered: Spring Even Years)

## HORT 3503. Sustainable and Organic Horticulture. 3 Hours.

This course will provide a base of knowledge of the principles and practices of sustainable, organic, and alternative horticulture management systems. The class will review and evaluate topics including soil biological processes (compost, humus and fertility), pest management, alternative farming systems, and organic agriculture. After this foundation information is studied, the class will study applications of sustainable agriculture principles to production systems such as greenhouse vegetable production, ornamental production, fruit production, and landscape and turf management. (Typically offered: Fall Even Years)

## HORT 400V. Special Problems. 1-6 Hour.

Original investigations on assigned problems in horticulture. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HORT 401V. Special Topics in Horticulture, Turf or Landscape. 1-6 Hour.
Topics related to horticulture, turfgrass or landscape science or management not covered in other courses or a more intensive study of a specific topic. (Typically offered: Irregular) May be repeated for degree credit.

## HORT 402V. Horticulture Judging and Competition Activity. 1-6 Hour.

Training for and participation on horticultural identification, judging and competitive teams. Prerequisite: HORT 2003. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HORT 4033. Professional Landscape Installation and Construction. 3 Hours. Principles and practices involved in landscape installation and construction. Topics covered include sequencing construction activities, protecting existing trees, landscape soils, selecting plants, planting and transplanting plant materials, wood construction, cement and masonry construction, and low-voltage lighting. Lecture 3 hours per week. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003. (Typically offered: Fall Even Years)

HORT 4043. Professional Landscape Management. 3 Hours.
Principles and practices of landscape management and maintenance. Topics include low maintenance and seasonal color design, pruning and hazard tree management, water and fertilizer management, pesticide use, and other maintenance activities. Basic elements of marketing, specifications and contracts, estimating, personnel management, and equipment selection and acquisition relevant for landscape services will be introduced. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003 and HORT 3103. (Typically offered: Fall Odd Years)

HORT 4103. Fruit Production Science and Technology. 3 Hours.
The management technologies and cultural practices of fruit crops including (but not limited to) blueberries, blackberries, raspberries, strawberries, grapes, peaches and apples will be presented. The underlying scientific principles of crop genetics, nutrition, and physiology will be presented as a basis for making management decisions in fruit crop productions. Corequisite: Lab component. Prerequisite: HORT 2003. (Typically offered: Spring Odd Years)

HORT 4153. Sustainable Techniques in Urban Horticulture. 3 Hours.
Sustainable Techniques in Urban Horticulture is a practicum based course where the student will learn basic techniques in sustainable production of horticultural crops in an urban or small-scale environment. Crops may include vegetables, cut flowers, or small fruits. This course is intended for students who do not have an agricultural production background or for those students wanting to learn more about the production of high-value horticultural crops under sustainable production systems. (Typically offered: Summer)

## HORT 4403. Plant Propagation. 3 Hours.

Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: HORT 2003. (Typically offered: Spring)

HORT 4403H. Honors Plant Propagation. 3 Hours.
Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: HORT 2003 and honors standing. (Typically offered: Spring)
This course is equivalent to HORT 4403.
HORT 4413. Horticulture Physiology. 3 Hours.
This course provides students with a background into the physiological processes of plants with an emphasis on horticultural crops and how the processes relate to horticultural crop production practices. Among the topics covered are photosynthesis, respiration, water relations and morphogenesis. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Spring)

HORT 4503. Sustainable Nursery Production. 3 Hours.
This course addresses issues and practices involved in production of quality woody nursery crops (e.g. trees and shrubs produced in open filed and containerized systems). (Typically offered: Spring Even Years)

## HORT 4603. Practical Landscape Planning. 3 Hours.

Ornamental planting design and landscape planning concepts. Preparing planting plans, materials sheets, and cost estimates for residential properties. Prerequisite: HORT 3103. (Typically offered: Spring Even Years)

HORT 462V. Horticulture, Landscape, Turf Sciences Internship Experience. 1-6 Hour.

A supervised practical work experience in a horticulture, landscape design, or turf business or research program to gain professional competence and insight into employment opportunities. Prerequisite: COMM 1313 and HORT 2101. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## HORT 4701L. Greenhouse Management and Controlled Environment

 Horticulture Laboratory. 1 Hour.Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Corequisite: HORT 4703.
(Typically offered: Fall Odd Years)
HORT 4703. Greenhouse Management and Controlled Environment Horticulture. 3 Hours.
Operation and management of greenhouses and other controlled environments used in horticultural production. Emphasis on system design and construction, control of light intensity and photoperiod, heating and cooling systems, substrates, mineral nutrition, water quality and irrigation systems. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Fall)

HORT 472V. Horticulture, Landscape, Turf Sciences Internship Assessment. 1-6 Hour.
The objective of the HORT 472V Internship Assessment is for the student to gain mastery in written and oral communication skills and critical thinking skills by reflection and analysis of ideas, artifacts, and events gained from a prior internship experience. The student is expected to master specific skills in the context, content development, syntax and mechanics and purpose of writing in a visual presentation relating to the internship experience. The student will also master skills in the organization, central message, language, and delivery of an oral presentation related to the internship experience. The student will master critical thinking skills through the explanation of issues, personal perspective, evidence presentation, and conclusions and outcomes related to the internship experience. Prerequisite: HORT 462V. (Typically offered: Fall, Spring and Summer)

HORT 4903. Golf and Sports Turf Management. 3 Hours.
Turf management techniques for golf courses, and athletic fields including species selection, root-zone construction and modification, fertilization, mowing, irrigation and pest control. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L and (HORT 2303 or HORT 3403). (Typically offered: Fall Odd Years)

## Poultry Science (POSC)

David J. Caldwell
Director, Center of Excellence for Poultry Science
Head, Department of Poultry Science
0114 Poultry Science Center
479-575-4952
Department of Poultry Science Website (https://poultry-science.uark.edu/)
The Department of Poultry Science offers a major in poultry science leading to a Bachelor of Science in Agriculture. Students pursuing a major in Poultry Science would select one of two areas of concentration for their degree program: a Pre-Professional Science Concentration or a Poultry Science Industry Concentration. The department also offers coursework for a minor and a certificate of excellence program.

A major in poultry science is designed to provide the scientific and technical education to prepare students for positions of leadership and responsibility in the expanding fields of production, processing, marketing, and distribution of meat, eggs, and related poultry products. The curriculum also prepares students for career opportunities in specialized areas of nutrition, breeding, genetics, physiology, management, food science, immunology, and disease.

Elective hours allow students to select a minor and thus personalize their degree.

Elective hours can also be used to emphasize areas of business, production, processing or science. Pre-veterinary medicine, pre-medical, or pre-pharmacy requirements may be fulfilled while meeting degree requirements.

Curricula are designed to permit the student to obtain the necessary foundation to pursue graduate study for the master's and doctoral degrees. Advanced degrees are offered but not limited to the areas of nutrition, genetics, physiology, product technology, and poultry health.

## Requirements for B.S.A. with Poultry Science Industry Concentration <br> Requirements for a Major in Poultry Science

State minimum core (p. 81) and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)
University Requirements (1 hour)
UNIV 1001 University Perspectives 1
Communications ( 12 hours)
Select 6 hours English from state minimum core 6
Communication Intensive Elective - 6hrs (see degree audit for 6
approved course list)
U.S. History or Government

Select 3 hours from U.S. History or Government State Minimum Core
Mathematics and Statistics (6 hours)

MATH $1203 \quad$| College Algebra (ACTS Equivalency $=$ MATH |
| :--- |
| 1103) (or higher) |$\quad 3$

Select one of the following: 3
AGEC 2403 Quantitative Tools for Agribusiness
STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

| Physical and Biological Sciences (16 hours) |  |  |
| :---: | :---: | :---: |
| BIOL 1543 <br> \& BIOL 1541L | Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) | 4 |
| BIOL 2013 <br> \& BIOL 2011L | ```General Microbiology (ACTS Equivalency = BIOL 2 0 0 4 ~ L e c t u r e ) and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)``` | 4 |
| or POSC 2413 Domestic Animal Microbiology <br> \& POSC 2411Land Domestic Animal Microbiology Laboratory |  |  |
| CHEM 1073 <br> \& CHEM 1071L | Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) <br> and Fundamentals of Chemistry Laboratory <br> (ACTS Equivalency = CHEM 1214 Lab) |  |
| or CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM \& CHEM 1121L1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |  |  |
| CHEM 2613 <br> \& CHEM 2611L | Organic Physiological Chemistry (ACTS <br> Equivalency = CHEM 1224 Lecture) <br> and Organic Physiological Chemistry Laboratory <br> (ACTS Equivalency = CHEM 1224 Lab) |  |
| or CHEM 3603 Organic Chemistry I <br> \& CHEM 3601Land Organic Chemistry I Laboratory |  |  |
| Fine Arts and Hum | umanities (6 hours) |  |
| Select 3 hours Fine Arts from state minimum core |  |  |
| Select 3 hours Humanities from state minimum core |  |  |
| Social Sciences (9 hours) |  |  |
| AGEC 1103 or ECON 2023 | Principles of Agricultural Microeconomics <br> Principles of Microeconomics (ACTS Equivalency = ECON 2203) | 3 |
| Select 6 hours Social Sciences from State Minimum Core 6 |  |  |
| Poultry Science Core (35 hours) |  |  |
| POSC 1003 | Introduction to Poultry Science | 3 |
| POSC 2343 | Poultry Production | 3 |
| POSC 2353 | Poultry Breeder Management | 3 |
| POSC 3033 | Animal Physiology | 3 |
| $\begin{aligned} & \text { POSC } 3123 \\ & \text { or BIOL } 2323 \end{aligned}$ | Principles of Genetics General Genetics | 3 |
| POSC 3223 | Poultry Diseases | 3 |
| POSC 3554 | Avian Anatomy |  |
| POSC 4314 | Egg and Meat Technology | 4 |
| POSC 4343 | Poultry Nutrition | 3 |
| Select 3 hours from the following: |  | 3 |
| POSC 4801 | Seminar: Research Topics |  |
| POSC 4811 | Seminar: Professionalism |  |
| POSC 4821 | Seminar: Problem Solving |  |
| POSC 4831 | Seminar: Processing Regulations |  |
| Select 3 hours from the following: |  | 3 |
| AFLS 400VH | Honors Thesis |  |
| POSC 401V | Internship in Poultry Science |  |
| POSC 402V | Research Experience |  |

General Electives (12 hours)

| Students should discuss recommended electives with academic/ <br> faculty adviser |  |
| :--- | ---: |
| $\mathbf{2 0}$ hours from concentration requirements (PSID, PSPP) | $\mathbf{2 0}$ |
| Total Hours | $\mathbf{1 2 0}$ |

## Requirements for a Major in Poultry Science with a Poultry Science Industry Concentration

| PSID Concentration | 3 |  |
| :--- | :--- | :--- |
| AGEC 2303 | Introduction to Agribusiness | 2 |
| FDSC 4122 | Food Microbiology | 3 |
| POSC 4233 | Value Added Muscle Foods | 3 |
| POSC 4213 | Integrated Poultry Management Systems | 9 |
| Select a minimum of 9 hours from the following: |  |  |


| AGEC 3503 | Agricultural Law I |
| :--- | :--- |
| AGEC 3523 | Environmental and Natural Resources Law |
| POSC 4123 | Legal Issues in Animal Agriculture |
| POSC 4163 | Companion Animal Nutrition |
| POSC 4923 | Brain and Behavior |
| Upper Level AGEC Course (3 hrs) |  |

Total Hours

## Poultry Science B.S.A. with Poultry Science Industry Concentration <br> Eight-Semester Degree Program

Students wishing to follow the degree plan should go to the EightSemester Degree Policy (p. 67) for university requirements of the program.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| Satisfies General Education Outcome 3.4: |  |  |
| BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory <br> (ACTS Equivalency $=$ BIOL 1014 Lab) | 4 |  |
| POSC 1003 Introduction to Poultry Science | 3 |  |
| Fine Arts/Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$, 2 | 3 |  |
| UNIV 1001 University Perspectives | 1 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| POSC 2353 Poultry Breeder Management |  | 3 |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) |  | 3 |
| Communication Intensive Elective (Recommend COMM 1313 Public Speaking) (Satisfies General Education Outcomes 1.2 and 5.1) |  | 3 |
| Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3) ${ }^{3}$ |  | 3 |

Year Total: ..... 14 ..... 15
Second Year ..... Fall
POSC 2343 Poultry Production ..... 3Satisfies General Education Outcome 3.4:CHEM 1073 Fundamentals of Chemistry (ACTS4
Equivalency = CHEM 1214 Lecture)\& CHEM 1071L Fundamentals of ChemistryLaboratory (ACTS Equivalency = CHEM 1214 Lab)or CHEM 1123 and CHEM 1121LSatisfies General Education Outcome 3.3:
AGEC 1103 Principles of Agricultural3
Microeconomicsor ECON 2023 Principles of Microeconomics(ACTS Equivalency = ECON 2203)U.S. History or Government State Minimum CoreElective (Satisfies General Education Outcome4.2)POSC 3554 Avian Anatomy4
STAT 2303 Principles of Statistics (ACTSEquivalency = MATH 2103)or AGEC 2403 Quantitative Tools for AgribusinessPOSC 2413 Domestic Animal Microbiology\& POSC 2411L Domestic Animal MicrobiologyLaboratoryor BIOL 2013 and BIOL 2011LFine Arts/Humanities State Minimum Core Elective${ }_{2}$ (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,}$Social Sciences State Minimum Core Elective(Satisfies General Education Outcomes 3.3 and$4.1)^{4}$Communication Intensive Elective (RecommendACOM 3143 Communicating Agriculture to thePublic)
Year Total: ..... 17
Third Year Fall
AGEC 2303 Introduction to Agribusiness ..... 3
CHEM 2613 Organic Physiological Chemistry ..... 4
(ACTS Equivalency = CHEM 1224 Lecture)\& CHEM 2611L Organic Physiological ChemistryLaboratory (ACTS Equivalency = CHEM 1224 Lab)or CHEM 3603 and CHEM 3601LFDSC 4122 Food Microbiology2
PSID Concentration Elective ..... 3
General Elective ..... 3
POSC 4811 Seminar: Professionalism ..... 1or POSC 4801 Seminar: Research TopicsPOSC 3033 Animal Physiology
POSC 3223 Poultry Diseases ..... 3
PSID Concentration Elective ..... 3

## General Elective

AFLS 400VH Honors Thesis or POSC 401V Internship in Poultry Science or POSC 402V Research Experience Year Total: 16

| Fourth Year |  |
| :---: | :---: |
|  | Fall |
| POSC 4314 Egg and Meat Technology | 4 |
| POSC 4811 Seminar: Professionalism or POSC 4831 Seminar: Processing Regulations or POSC 4821 Seminar: Problem Solving or POSC 4801 Seminar: Research Topics | 1 |
| General Elective | 3 |
| PSID Concentration Elective | 3 |
| POSC 3123 Principles of Genetics or BIOL 2323 General Genetics | 3 |
| POSC 4343 Poultry Nutrition |  |
| POSC 4233 Value Added Muscle Foods |  |
| POSC 4213 Integrated Poultry Management Systems (Satisfies General Education Outcome 6.1) |  |
| POSC 4801 Seminar: Research Topics or POSC 4831 Seminar: Processing Regulations or POSC 4821 Seminar: Problem Solving or POSC 4811 Seminar: Professionalism |  |
| General Elective (2-3 hours) |  |
| Year Total: | 14 |

## Total Units in Sequence:

${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
2 The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123 or Intermediate-level world language (usually 2003-level).
${ }^{3}$ The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
4 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

Note, courses cannot be counted twice in degree requirements.

## Requirements for B.S.A. in Poultry Science with Pre-Professional Science Concentration Requirements for a Major in Poultry Science

State minimum core (p.81) and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)
University Requirements (1 hour)

| UNIV 1001 | University Perspectives | 1 |
| :---: | :---: | :---: |
| Communications (12 hours) |  |  |
| Select 6 hours English from state minimum core |  | 6 |
| Communication Intensive Elective - 6hrs (see degree audit for approved course list) |  | 6 |
| U.S. History or Government |  | 3 |
| Select 3 hours from U.S. History or Government State Minimum Core |  |  |
| Mathematics and Statistics (6 hours) |  |  |
| MATH 1203 | College Algebra (ACTS Equivalency $=$ MATH 1103) (or higher) | 3 |

Select one of the following:
AGEC 2403 Quantitative Tools for Agribusiness
STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

Physical and Biological Sciences (16 hours)
BIOL 1543 Principles of Biology (ACTS Equivalency = 4
\& BIOL 1541L BIOL 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
BIOL 2013 General Microbiology (ACTS Equivalency = BIOL 4
\& BIOL 2011L 2004 Lecture)
and General Microbiology Laboratory (ACTS
Equivalency = BIOL 2004 Lab)
or POSC 2413 Domestic Animal Microbiology
\& POSC 2411L and Domestic Animal Microbiology Laboratory
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency 4
\& CHEM 1071L = CHEM 1214 Lecture)
and Fundamentals of Chemistry Laboratory
(ACTS Equivalency = CHEM 1214 Lab)
or CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM
\& CHEM 1121L1424 Lecture)
and University Chemistry II Laboratory (ACTS
Equivalency = CHEM 1424 Lab)
CHEM 2613 Organic Physiological Chemistry (ACTS 4
\& CHEM 2611L Equivalency $=$ CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory
(ACTS Equivalency = CHEM 1224 Lab)
or CHEM 3603 Organic Chemistry I
\& CHEM 3601Land Organic Chemistry I Laboratory
Fine Arts and Humanities (6 hours)
Select 3 hours Fine Arts from state minimum core
Select 3 hours Humanities from state minimum core
Social Sciences (9 hours)
AGEC 1103 Principles of Agricultural Microeconomics 3


## Requirements for a Major in Poultry Science with a Poultry Science Pre-Professional

 Science Concentration
## PSPP Concentration



POSC 4923 Brain and Behavior
Upper Level CHEM or BIOL

## Total Hours

## Poultry Science B.S.A. with Poultry Science Pre-Professional Science Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan should go to the EightSemester Degree Policy (p. 67) for university requirements of the program.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| Satisfies General Education Outcome 3.4: |  |  |
| BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory <br> (ACTS Equivalency = BIOL 1014 Lab) | 4 |  |
| POSC 1003 Introduction to Poultry Science | 3 |  |
| Fine Arts/Humanities State Minimum Core Elective ${ }_{2}$ (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$ | 3 |  |
| UNIV 1001 University Perspectives | 1 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| POSC 2353 Poultry Breeder Management |  | 3 |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) |  | 3 |
| Communication Intensive Elective (3 hrs) (Recommend COMM 1313 Public Speaking) (Satisfies General Education Outcomes 1.2 and 5.1) |  | 3 |
| Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3) ${ }^{3}$ |  | 3 |
| Year Total: | 14 | 15 |


| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| POSC 2343 Poultry Production | 3 |  |
| General Elective (Recommend CHEM 1103/1101L | 4 |  |

General Elective (Recommend CHEM 1103/1101L 4
University Chemistry I)
Satisfies General Education Outcome 3.3:
AGEC 1103 Principles of Agricultural
Microeconomics
or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)
U.S. History or Government State Minimum Core

Elective (Satisfies General Education Outcome
4.2)

POSC 3554 Avian Anatomy

STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
or AGEC 2403 Quantitative Tools for Agribusiness
POSC 2413 Domestic Animal Microbiology
\& POSC 2411L Domestic Animal Microbiology

## Laboratory

or BIOL 2013 and BIOL 2011L
Satisfies General Education Outcome 3.4:
CHEM 1073 Fundamentals of Chemistry (ACTS
Equivalency = CHEM 1214 Lecture)
\& CHEM 1071L Fundamentals of Chemistry
Laboratory (ACTS Equivalency = CHEM 1214 Lab)
or CHEM 1123 and CHEM 1121L
Fine Arts/Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1,}$

Communication Intensive Elective (Recommend ACOM 3143 Communicating Agriculture to the Public)
Year Total: 17

| Third Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| BIOL 2533 Cell Biology | 3 |  |
| CHEM 3603 Organic Chemistry I <br> \& CHEM 3601L Organic Chemistry I Laboratory or CHEM 2613 and CHEM 2611L | 4 |  |
| PSPP Concentration Elective (Recommend PHYS 2013/2011L College Physics I w/lab) | 4 |  |
| General Elective | 3 |  |
| POSC 4811 Seminar: Professionalism <br> or POSC 4831 Seminar: Processing Regulations <br> or POSC 4821 Seminar: Problem Solving <br> or POSC 4801 Seminar: Research Topics | 1 |  |
| POSC 3033 Animal Physiology |  |  |
| POSC 3223 Poultry Diseases |  |  |
| PSPP Concentration Elective (Recommend CHEM 3613/3611L Organic Chemistry II) |  |  |
| PSPP Concentration Elective (Recommend PHYS 2033/2031L College Physics II) |  |  |
| POSC 402V Satisfies General Education Outcome 6.1: |  |  |
| AFLS 400VH Honors Thesis ${ }^{4}$ <br> or POSC 401V Internship in Poultry Science <br> or POSC 402V Research Experience |  |  |
| Year Total: | 15 | 17 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| POSC 4314 Egg and Meat Technology | 4 |  |
| POSC 4811 Seminar: Professionalism | 1 |  |
| or POSC 4831 Seminar: Processing Regulations <br> or POSC 4821 Seminar: Problem Solving <br> or POSC 4801 Seminar: Research Topics |  |  |
| CHEM 3813 Elements of Biochemistry | 3 |  |
| PSPP Concentration Elective | 2 |  |

## Minor in Poultry Science (POSC-M)

A student planning to minor in poultry science should declare the minor with their major dean's office and consult a departmental adviser to discuss requirements. The minor consists of 16 hours to include the following:

Core Requirements (10 hours)

| POSC 1003 | Introduction to Poultry Science | 3 |
| :--- | :--- | :--- |
| POSC 2343 | Poultry Production | 3 |
| Choose 4 hours from the following: | 4 |  |

POSC 3554 Avian Anatomy

| POSC 4314 | Egg and Meat Technology |  |
| :---: | :---: | :---: |
| Controlled POSC Electives (6 hours) |  | 6 |
| Choose a minimum of 6 hours from the following: |  |  |
| POSC 2353 | Poultry Breeder Management |  |
| POSC 3033 | Animal Physiology |  |
| POSC 3223 | Poultry Diseases |  |
| POSC 3554 | Avian Anatomy |  |
| POSC 3123 | Principles of Genetics |  |
| POSC 4314 | Egg and Meat Technology |  |
| POSC 4343 | Poultry Nutrition |  |
| POSC 3013 | Exotic Companion Birds |  |
| POSC 3513 | Current Approaches in Agricultural Laboratory Research |  |
| POSC 4213 | Integrated Poultry Management Systems |  |
| POSC 4233 | Value Added Muscle Foods |  |
| POSC 4923 | Brain and Behavior |  |
| POSC Electiv | (3 hours) |  |

Total Hours

## Requirements for Undergraduate Certificate of Excellence in Poultry

 ScienceStudents entering the Certificate of Excellence Program must 1) meet the admission requirements for the University of Arkansas and 2) have completed 90 hours of coursework with a 2.0 or higher from a regionally accredited institution of higher education.

Students who have completed a Bachelor of Science degree may also consider this program. Typical careers include production/processing/ allied positions in the poultry industry, graduate studies are also an option.

## Curriculum Outline:

| POSC 3033 | Animal Physiology | 3 |
| :---: | :--- | :---: |
| POSC 3223 | Poultry Diseases | 3 |
| POSC 3554 | Avian Anatomy | 4 |
| POSC 4213 | Integrated Poultry Management Systems | 3 |
| POSC 4314 | Egg and Meat Technology | 4 |
| POSC 4343 | Poultry Nutrition | 3 |
| POSC 4801 | Seminar: Research Topics | 1 |
| or POSC 4821 | Seminar: Problem Solving |  |
| POSC 4811 | Seminar: Professionalism | 1 |
| or POSC 4831 | Seminar: Processing Regulations | 3 |
| POSC 401V | Internship in Poultry Science | 3 |

## Faculty

Alrubaye, Adnan A., Ph.D., M.Ed. (University of Arkansas), M.Sc. (University of Baghdad), Assistant Professor, 2016, 2021.
Bottje, Walter G., Ph.D. (University of Illinois-Urbana-Champaign), M.S. (Southern Illinois University), B.S. (Eastern Illinois University), Professor, 1985, 1993.
Caldwell, David J., Ph.D., M.S., and B.S. (Texas A\&M University), Professor, 2019.
Clark, Fred D., Ph.D., D.V.M., M.S., B.S. (Texas A\&M University), Extension Professor, 1994, 2007.
Coon, Craig N., Ph.D., M.S., B.S. (Texas A\&M University), Professor, 1997.

Donoghue, Annie, Ph.D. (F. Edward Herbert School of Medicine), M.S. (Texas A\&M University), B.S. (San Diego State University), Research Professor, 2000.
Dridi, Sami, Ph.D., M.S. (National Polytechnic Institute of Lorraine, France), B.S. (Superior Institute of Mateur, Tunisia), Professor, 2013, 2018.

Erf, Gisela F., Ph.D. (Cornell University), M.S., B.S. (University of Guelph, Canada), Professor, Avian Immunology Professorship, 1994, 2004.

Hanning, Casey Owens, Ph.D., M.S., B.S. (Texas A\&M University), Professor, 2000, 2017.
Hargis, Billy M., Ph.D., D.V.M. (University of Minnesota-Twin Cities), M.S. (University of Georgia), B.S. (University of Minnesota), Distinguished Professor, Sustainable Poultry Health Chair, 2000, 2017.
Kidd, Michael T., Ph.D. (North Carolina State University), M.S., B.S.A. (University of Arkansas), Professor, 2010.
Kong, Byungwhi, Ph.D., M.S. (University of Minnesota-Twin Cities), B.S. (Korea University), Associate Professor, 2006, 2012.
Kuenzel, Wayne J., Ph.D. (University of Georgia), M.S., B.S. (Bucknell University), Professor, 2000.
Kwon, Young Min, Ph.D. (Texas A\&M University), M.S., B.S. (Seoul National University), Associate Professor, 2002, 2008.
Marcy, John A., Ph.D., M.S. (lowa State), B.S. (University of Tennessee), Extension Professor, 1993, 2006.
Orlowski, Sara K., Ph.D., M.S. (University of Arkansas), B.S. (Cornell University), Assistant Professor, 2019.
Rath, Narayan C., Ph.D., M.S. (University of Delhi-India), B.S. (Utkal University-India), Research Professor, 1992, 1998.
Rochell, Samuel J., Ph.D. (University of Illinois at Urbana-Campaign), M.S., B.S. (Auburn University), Assistant Professor, 2016.

Sun, Xiaolun, Ph.D., M.S. (Virginia Polytech Institute and State University), B.S. (Southern China Agricultural University), Assistant Professor, 2016.
Tellez-Isaias, Guillermo, Ph.D. (Texas A\&M University), Visiting Professor, 2002.
Wideman, Robert F., Ph.D. (University of Connecticut), B.A. (University of Delaware), Professor, 1993.

## Courses

POSC 1003. Introduction to Poultry Science. 3 Hours.
To introduce the student to the career opportunities in the poultry science industry. Students will be introduced to biological sciences associated with poultry. Corequisite: Lab component. (Typically offered: Fall)

POSC 1062. Sustainable Integrated Small Animal Farming. 2 Hours.
Practical information on small scale animal production, including practical strategies for farm planning, issues of economic and environmental sustainability, best management practices, biosecurity, disease prevention, and farm safety will be presented. (Typically offered: Spring)
This course is cross-listed with ANSC 1062.
POSC 2343. Poultry Production. 3 Hours.
To develop a basic foundation about the practices utilized to produce broilers and turkeys. Course will highlight hatchery function and management; embryo development and hatching; chick/poultry transportation, preparation and maintenance of facilities for rearing birds, bird environment, nutrition, and health. Also to be covered are the different roles associated with live production in an integrated company. Corequisite: Lab component. (Typically offered: Fall)

## POSC 2353. Poultry Breeder Management. 3 Hours.

Students will be introduced to the management practices used in production of young and adult chickens, turkeys, and other poultry with special emphasis on broiler, breeder, and market egg production. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. (Typically offered: Spring)

POSC 2411L. Domestic Animal Microbiology Laboratory. 1 Hour.
This course is designed for students working on their Poultry Science, Animal Science, and/or Food Science degrees. Students enrolled in this course will learn how to collect samples aseptically from live birds and meat samples, transport samples, and culture samples on a variety of different microbiological media. In addition, students will have the opportunity to visit one of the microbiology labs in the local poultry production facilities. Students will learn how to handle samples, stain bacterial cells, and identify unknown bacteria from field samples. A lab period will be assigned to teaching students on how to use bacteria in food production by teaching students how to prepare and sample yogurt. Corequisite: POSC 2413. (Typically offered: Fall)
This course is cross-listed with ANSC 2411L.

## POSC 2413. Domestic Animal Microbiology. 3 Hours.

Basic concepts of domestic animal and poultry microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Prerequisite: (BIOL 1543 and BIOL 1541L) and (CHEM 1073 or CHEM 1103 or CHEM 1123). Corequisite: POSC 2411L. (Typically offered: Fall)
This course is cross-listed with ANSC 2413.
POSC 3013. Exotic Companion Birds. 3 Hours.
Topics include basic care, health, breeding, bird evolution, anatomy, and nutritional management of commonly kept exotic companion birds, including parrots, cockatoos, macaws, finches, canaries, and pigeons. Discussion will include housing and care for individual pet birds and large scale breeding and production. Lecture/ discussion 3 hours per week. Prerequisite: BIOL 1543. (Typically offered: Fall Odd Years)

## POSC 3033. Animal Physiology. 3 Hours.

Fundamental aspects of central nervous, musculoskeletal, reproductive, digestive, immune, cardiovascular, respiratory and renal systems will be covered. The normal structure and function of these systems will be emphasized. Lecture 3 hours per week. Prerequisite: BIOL 1543 and (CHEM 1123 or CHEM 1073). (Typically offered: Spring)
This course is equivalent to ANSC 3033.

## POSC 3123. Principles of Genetics. 3 Hours.

Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher. (Typically offered: Fall)
This course is cross-listed with ANSC 3123.

## POSC 3223. Poultry Diseases. 3 Hours.

Common diseases affecting poultry reared under commercial conditions will be covered including diagnosis, therapy and prevention. Immunity, sanitation practices, and chemoprophylaxis will also be covered. Lecture 3 hours per week with some demonstrations, slides and videotapes. Prerequisite: ((BIOL 2013 and BIOL 2011L) or (POSC 2413 and POSC 2411L)), and junior standing. (Typically offered: Spring)

POSC 3381. Poultry Judging and Selection. 1 Hour.
Practice in production judging and flock selection. Laboratory 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

POSC 3513. Current Approaches in Agricultural Laboratory Research. 3 Hours. A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543. (Typically offered: Spring Even Years)
This course is cross-listed with POSC 3513H, ANSC 3513H.

## POSC 3513H. Honors Current Approaches in Agricultural Laboratory

## Research. 3 Hours.

A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543. (Typically offered: Spring Even Years)
This course is cross-listed with ANSC 3513H.

## POSC 3554. Avian Anatomy. 4 Hours.

Detailed coverage of the external and internal anatomy of poultry, including formation and development of the egg and embryo. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1543. (Typically offered: Fall)

## POSC 400V. Special Problems. 1-9 Hour.

Special problems in the poultry sciences for advanced students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

## POSC 401V. Internship in Poultry Science. 1-6 Hour.

Supervised work experience with private or government organizations to introduce students to professional areas of work in poultry science. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.

## POSC 402V. Research Experience. 1-6 Hour.

An undergraduate research experience should familiarize students with the research process and expand their knowledge in areas of poultry science through scientific literature searches and hands-on experiential learning. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
POSC 4033. Statistical Process Control in the Food Industry. 3 Hours. Analysis of processing data related to compliance with regulatory limits, quality \& safety limits and internal \& external customer specifications. Emphasizes statistical process control chart development, including understanding data and chart selection, calculating statistical limits, and interpreting process performance. Prerequisite: Instructor consent. (Typically offered: Irregular)

POSC 410V. Special Topics in Poultry Science. 1-4 Hour.
Topics not covered in other courses or for a more intensive study of specific topics in poultry science. (Typically offered: Irregular) May be repeated for degree credit.

## POSC 4123. Legal Issues in Animal Agriculture. 3 Hours.

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation from local to state to federal, depending on the issue will be studied and discussed. (Typically offered: Spring Odd Years)
This course is cross-listed with AGEC 4123, ANSC 4123.

POSC 4163. Companion Animal Nutrition. 3 Hours.
This course is designed to focus on the digestive anatomy, physiology, and nutrient metabolism of non-herbivorous companion animals, primarily dogs and cats. Topics discussed will also include an overview of the pet food industry, its regulations and commonly utilized ingredients. Students will gain a deeper understanding of nutrition as it relates to life stages and various disease states that can affect both dogs and cats. This course will require a Saturday trip to one or two off campus facilities. Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Spring) This course is cross-listed with ANSC 4163.

POSC 4213. Integrated Poultry Management Systems. 3 Hours.
Major managerial systems in the integrated commercial poultry industry.
Development of an understanding of the basic decision making processes of poultry companies and the factors influencing those decisions. Prerequisite: POSC 2353 and AGEC 1103 and AGEC 2303. (Typically offered: Spring)

POSC 4233. Value Added Muscle Foods. 3 Hours.
An intense study of muscle structure and how it relates to the development of further processed meat products. Muscle ultrastructure, protein functionality, product development, and quality analysis will be covered. In class hands on activities will also be included to allow students to obtain experience of producing processed meat products. Prerequisite: POSC 4314. (Typically offered: Spring Odd Years)
POSC 4314. Egg and Meat Technology. 4 Hours.
Study of the science and practice of processing poultry meat and egg products; examination of the physical, chemical, functional and microbiological characteristics of value added poultry products; factors affecting consumer acceptance and marketing of poultry products and the efficiency of production. Corequisite: Lab component. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1073 and CHEM 1071L) and BIOL 1543 and BIOL 1541L. (Typically offered: Fall)

POSC 4343. Poultry Nutrition. 3 Hours.
Principles of nutrition as applied to the formulation of practical chicken and turkey rations. Lecture 3 hours per week. Prerequisite: CHEM 2613 or CHEM 3603 and junior standing. (Typically offered: Spring)
POSC 4613. Muscle Growth and Development. 3 Hours.
This is an undergraduate level course offering detailed insights into skeletal muscle morphological, physiological, cellular, and molecular factors affecting muscle structure and function, with special emphasis on cellular and molecular regulation of muscle growth and development, such as myo-, fibro-, and adipo-genesis. And the relationship between the properties of skeletal muscle and meat quality. ANSC 3033 and(or) CHEM 3813 are recommended as a prerequisite(s). (Typically offered: Fall) This course is cross-listed with ANSC 4613.

POSC 4801. Seminar: Research Topics. 1 Hour.
Required by all poultry science majors. Prerequisite: Junior or Senior standing and COMM 1313. (Typically offered: Spring Odd Years)

POSC 4811. Seminar: Professionalism. 1 Hour.
Addressing issues associated with preparation for finding and retaining your first job in the poultry industry. Lecture 1 hour per week. Prerequisite: Junior or Senior standing. (Typically offered: Fall Odd Years)

POSC 4821. Seminar: Problem Solving. 1 Hour.
Real world problem solving of poultry production systems. Lecture 1 hour per week. Prerequisite: Junior/ senior standing. (Typically offered: Spring Even Years)

POSC 4831. Seminar: Processing Regulations. 1 Hour.
Processing plant procedures and regulations with an emphasis on problem solving. Lecture 1 hour per week. Prerequisite: Junior or senior standing. (Typically offered:
Fall Even Years)

## POSC 4923. Brain and Behavior. 3 Hours.

Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory and autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3033 or POSC 3033) or PSYC 2003, or BIOL 2213, or BIOL 2443, or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with ANSC 4923.

## School of Human Environmental Sciences (HESC)

Donna L. Graham<br>Director

118 Human Environmental Sciences Building
479-575-4305

## School of Human Environmental Sciences Website

The School of Human Environmental Sciences at the University of Arkansas prepares students for a wide variety of professional careers in education, industry, business, government, and community services. The school is concerned with improving the quality of life for individuals and families as they exist and function in society. Human environmental sciences draws knowledge from research, from the physical, biological, and social sciences, and from arts and humanities. It relates this knowledge to an understanding of individuals' and families' needs and goals for food, clothing, shelter, management of resources, and human development and relationships. The School of Human Environmental Sciences has made a substantial contribution to the development of individuals and families through undergraduate and graduate preparation of human environmental scientists and through research in human nutrition, foods, human development, family sciences, apparel and textiles.

## Majors

Six majors are offered in the School of Human Environmental Sciences:

- Apparel Merchandising and Product Development (p. 212)
- Birth through Kindergarten (p. 218)
- Food, Nutrition and Health (p. 221)
- Hospitality Management (p. 225)
- Human Development and Family Sciences (p. 227)
- Human Nutrition and Dietetics (p. 234)


## Minors

Five minors are offered in the School of Human Environmental Sciences:

- Child Services (p. 221)
- Event Management (p. 227)
- Hospitality Management (p. 227)
- Human Development and Family Sciences (p. 231)
- Human Nutrition (p. 236)


## Faculty

Apple, Laurie Marie McAlister, Ph.D. (Oklahoma State University), M.S., B.S. (University of Arkansas), Associate Professor, 2000, 2007.

Becnel, Jennifer N., Ph.D. (Arizona State University), M.A. (University of California-San Francisco). B.A. (San Diego State University), Assistant Professor, 2014.

Bowman, Jennifer, M.S., B.S. (University of Arkansas), Instructor, 2020.
Cho, Eunjoo, Ph.D. (lowa State University), M.S., B.S. (Hanyang
University, Seoul), Associate Professor, 2013, 2019.
Duncan, James M., Ph.D. (Florida State University), M.S. (University of Arkansas), Instructor, 2017.
Fillastre, Michelle D., PH.D., M.S. (Louisiana State University), Instructor, 2020.
Fuller, Serena M., Ph.D. (University of California, Davis), Associate Professor, 2014.
Garrison, Mary Elizabeth, Ph.D., M.S. (Iowa State University), B.S. (Benedictine College), Professor, 2014.
Harding, Lorna, M.S. (University of Alberta, Canada), B.A. (University of Western Ontario, Canada), Instructor, 2004.
Herold, Laura K., Ph.D., M.A. (University of Michigan), B.A. (Oberlin College), Teaching Assistant Professor, 2015.
Killian, Timothy Scott, Ph.D. (University of Missouri-Columbia), M.A. (Wheaton College), B.A. (Central Bible College), Associate Professor, 2001, 2007.
Ma, Weiyi, Ph.D, M.A. (University of Delaware), B.A. (China West Normal University), Assistant Professor, 2017.
McNally, Shelley Ann, Ph.D. (University of Toledo), M.S., B.S. (Ohio University), Professional Practice Assistant Professor, 2016.
Mosley, Jacquelyn Dee, Ph.D. (Texas Tech University), M.S. (Arizona State University), B.A. (University of Northern lowa), Professor, 2021, 2016.

Moxley, Shari Coleman, Ph.D. (University of North Carolina), Instructor, 2013.

O'Brien, Catherine, Ph.D. (University of Illinois, Chicago), M.P.H. (San Diego State University), M.A. (University of California, San Diego), B.S.Ed. (University of Wisconsin, Madison), Instructor, 2016.

Overby, Theresa, B.A. (University of Arkansas, Little Rock), Instructor, 2020.

Pendergraft, Sarah Ann, M.S. (University of Arkansas), B.S. (Texas Christian University), Instructor, 2020.
Post, Rana, M.B.A. (William Woods University), B.S. (University of Missouri, Columbia), Instructor, 2008.
Powell, Rob, M.S., B.S. (Louisiana State University), Instructor, 2020.
Robertson, Lona, Ed.D. (Indiana University, Bloomington), M.S., B.S. (Florida State University), Professor, 2006, 2011.
Siahmakoun, Lobat, M.S. (University of Arkansas), B.S. (Missouri Southern State University), Instructor, 2015.
Southward, Leigh, Ph.D., M.S., B.S. (University of Tennessee), B.S. (Mississippi University for Women), Associate Professor, 2008.
Stallings, Melinda, M.A. (University of Houston-Clear Lake), B.S. (Louisiana State University), Instructor, 2019.
Terrell, Amanda, Ph.D., M.S., B.S. (Oklahoma State University), Assistant Professor, 2017.
Timby, Donia, M.S., B.S. (University of Arkansas), Instructor, 2017.
Traywick, LaVona S., Ph.D. (University of Kentucky), M.A. (University of Arkansas-Little Rock), B.S. (University of Central Arkansas), Associate Professor, 2017.
Trudo, Sabrina P., Ph.D. (University of Washington), B.S. (Brigham Young University), Associate Professor, Twenty First Century Endowed Chair in Human Environmental Sciences, 2015.
Way, Kelly Ann, Ph.D., M.S., B.S. (Oklahoma State University), Associate Professor, 2006, 2012.

## Apparel Merchandising and Product Development Courses

## AMPD 1013. Introduction to Clothing Concepts. 3 Hours.

Origin of dress, the evolution of fashion as an economic power, the sociological and psychological aspects of clothing in various cultures, aesthetics of dress, selection and consumption of clothing. Lecture 3 hours per week. (Typically offered: Fall and Spring)
AMPD 1013H. Honors Introduction to Clothing Concepts. 3 Hours.
Origin of dress, the evolution of fashion as an economic power, the sociological and psychological aspects of clothing in various cultures, aesthetics of dress, selection and consumption of clothing. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to AMPD 1013.
AMPD 1023. Introduction to Apparel Production. 3 Hours.
Course focuses on basic principles of apparel production and analysis of garment components of mass produced apparel. Students utilize computer generated designs in the production process. Laboratory 6 hours per week. Prerequisite: HESC or AMPD students only. (Typically offered: Fall and Spring)
AMPD 2013. Fashion, Buying and Promotion in a Global Market. 3 Hours. Fashion components, marketing theories and practices as they specifically relate to apparel, home goods, and other design driven products in the global market. Focus on principles and techniques on how fashion marketers develop and apply marketing strategies that meet consumer needs at a profit. International buying and promotional aspects of the apparel industry are emphasized. Lecture 3 hours per week. Prerequisite: AMPD major and AMPD 1013. (Typically offered: Fall and Spring)
AMPD 2013H. Honors Fashion, Buying and Promotion in a Global Market. 3 Hours.
Fashion components, marketing theories and practices as they specifically relate to apparel, home goods, and other design driven products in the global market. Focus on principles and techniques on how fashion marketers develop and apply marketing strategies that meet consumer needs at a profit. International buying and promotional aspects of the apparel industry are emphasized. Lecture 3 hours per week. Prerequisite: AMPD major, AMPD 1013 and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to AMPD 2013.

## AMPD 2033. Computer Based Methods for Apparel. 3 Hours.

This course is designed to give students basic experience with CAD (computer aided design) apparel industry software in a computer laboratory environment. Prerequisite: AMPD majors only, AMPD 1013, AMPD 1023 and ASTM 2903 or ISYS 1123 or equivalent. (Typically offered: Fall and Spring)
AMPD 2053. Introduction to Textile Science. 3 Hours.
Textile fibers and fabrics, their structure, properties, manufacture, wearing qualities and methods of laundering, finishing, and dyeing. Artistic and economic selection of materials for clothing and household furnishings. Lecture 3 hours per week. Prerequisite: HESC, AMPD or FCSE students only. (Typically offered: Fall and Spring)

## AMPD 2063. Quality Assessment of Apparel. 3 Hours.

Study of apparel from the perspective of structure, aesthetics, cost and expected performance of the finished product. Lecture 2 hours per week, lab 2 hours per week. Prerequisite: AMPD 1023 and AMPD 2053. (Typically offered: Fall and Spring)

## AMPD 2073. Flat Pattern Drafting. 3 Hours.

A study of product development and production through flat pattern manipulation and the related vocabulary necessary to communicate professionally within the industry. Pre- or Corequisite: AMPD 2063. (Typically offered: Fall and Spring)

## AMPD 3033. Merchandising Math for the Apparel Industry. 3 Hours.

Exploration of activities associated with the procurement of fashion apparel. A fashion analysis is directed toward apparel demands and the creation of a fashion statement by the use of specific quantitative skills. Course follows fashion item from the designer to the store. Lecture 3 hours per week. Prerequisite: MATH 1203 or three credit hours of STAT and AMPD 2013. (Typically offered: Fall and Spring)

AMPD 3043. Fashion Brand Management. 3 Hours.
This course focuses on the fundamental elements of brand, the concept of brand equity, brand relationships with consumers, and the implications of technologies on the branding process in the fashion industry. The course topics include branding basics, the concept of brand equity, brand image, brand positioning, brand communications, the role of emotional and sensory experiences in fashion branding, luxury fashion brands, sustainable fashion branding management, and technology driven branding. Prerequisite: AMPD 2013. (Typically offered: Fall and Spring)

## AMPD 3053. Computer Aided Textile Design. 3 Hours.

This course is designed to give students advanced skills in textile design using industry based computer aided design (CAD) software. Prerequisite: AMPD 2033 and AMPD 2053 or instructor consent. (Typically offered: Fall and Spring)

## AMPD 3063. Digital Apparel Production. 3 Hours.

Use of industry specific computer aided software to perform pattern making, technical package, marketing, and other cross-functional team communication materials. Pre- or Corequisite: AMPD 2073, AMPD 2033, and AMPD 2063. (Typically offered: Fall and Spring)
AMPD 3071. Apparel Merchandising and Product Development Pre-Internship. 1 Hour.
A study of job descriptions, responsibilities at the management level, structural operations, work procedures, job performance evaluations, job application, the resume, and portfolio development in preparation for AMPD 4083, AMPD Internship. Lecture 1 hour per week. Prerequisite: AMPD majors only. (Typically offered: Spring)

## AMPD 3203. Fashion Styling - UARC. 3 Hours.

This course exposes students to the essential skills necessary for success in the field of fashion styling. Future stylists will learn the criteria to produce striking images for all visual media including entertainment, music, print and advertising. In addition, they will gain an understanding of the interdisciplinary collaborative nature within the creative process while working with directors, photographers and production crew. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy. Prerequisite: AMPD majors only. (Typically offered: Fall)

## AMPD 3213. Trend Forecasting - UARC. 3 Hours.

Forecasting is one of the most rapidly growing research areas in fashion as well as in many other industry fields. Anticipating consumer demand is crucial and the ability to trend forecast is a skill required for product development. This course will enable students to develop trend forecasts by analyzing the global environment they live in using varied methodologies. The students will learn how to navigate between existing predictions and translate them for product development. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy. Prerequisite: AMPD majors only. (Typically offered: Fall)

## AMPD 4011. History of Apparel Through Film to 1900. 1 Hour.

This course uses historic costume films to trace the evolution of clothing from ancient Egypt to the Twentieth Century. Emphasis is placed on societal aspects such as politics, religion, economy, technology, education, sports, class structure, and gender roles, and how they affect and change dress. Web-based course. (Typically offered: Fall and Spring)

AMPD 4023. Merchandising Application for the Apparel Industry. 3 Hours.
Application of merchandising theory, principles and practices in a capstone class. An in depth study of innovative apparel business concepts as applied to manufacturers and retailers of apparel including apparel classification, seasonal cycles, stock emphasis, assortment strategies, target customers, and apparel trends. Includes an overview of marketing communication including advertising, personal selling, and sales promotion. Prerequisite: AMPD 3033 and AMPD 3043 and completed 75 credit hours or instructor consent. (Typically offered: Fall and Spring)

AMPD 4053. Historic and Contemporary Apparel. 3 Hours.
This course traces the evolution of clothing from ancient times to the twentieth century with emphasis upon Western civilization and includes the study of contemporary fashion as a social force including the origin, scope, theory, and history of the fashion business, the materials of fashion, the fashion producers, auxiliary fashion enterprises, designers, fashion leaders, and leading market. Cultural and economic factors affecting dress, adornment and customs associated dress will be stressed. The Lecture 3 hours per week. Prerequisite: Completed 75 credit hours or instructor consent. (Typically offered: Fall and Spring)

## AMPD 4063. Advanced Apparel Production. 3 Hours.

An advanced study of product development incorporating technology used in the industry for a career in fashion merchandising and/or product development in a computer laboratory environment. Laboratory 6 hours per week. Prerequisite: AMPD 2063 and AMPD 2073. (Typically offered: Fall and Spring)

AMPD 4063H. Honors Advanced Apparel Production. 3 Hours.
An advanced study of product development incorporating technology used in the industry for a career in fashion merchandising and/or product development in a computer laboratory environment. Laboratory 6 hours per week. Prerequisite: AMPD 2033, AMPD 2063 and AMPD 2073 and honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to AMPD 4063.

## AMPD 4073. Fashion Show Theory and Production. 3 Hours.

A study of the fashion show including the history, purpose, future of, and elements necessary to produce a successful show. A study of fashion show production through experiential project-based learning and committee membership planning and implementing a fashion show. (Typically offered: Spring)
AMPD 4083. Apparel Merchandising and Product Development Internship. 3 Hours.
A practical experience in a retail store or in a work situation related to the apparel industry to gain insight into the field of apparel merchandising and operations. Prerequisite: Junior standing and 2.50 cum GPA and AMPD 2013, AMPD 2033, AMPD 2063, AMPD 2073, AMPD 3033, AMPD 3043, AMPD 3071, COMM 1313 and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
AMPD 4093. Apparel Merchandise Planning and Inventory Control. 3 Hours. Describes today's challenges for both apparel manufacturers and retailers in meeting the consumer's demands for the right products at the right prices - and at the right times. Follows the evolution of the merchandising function with emphasis on production efficiency, highlighting the philosophies of industry executives and the effective integration of the merchandising, store design, marketing, the apparel supply chain and manufacturing functions along the way. Prerequisite: (ECON 2143 or (ECON 2013 and ECON 2023) or (AGEC 1103 and AGEC 2103)) and AMPD 3033 and senior standing or instructor consent. (Typically offered: Fall and Spring)

## AMPD 4103. Evolution of Fashion and Society Through Television Media. 3 Hours.

This course uses television programming from its early beginnings in the 1930s through to the twenty-first century to trace major events, societal changes, and the associated evolution of fashion. The course examines television both as an innovator and diffuser of fashion trends. (Typically offered: Fall and Spring)

AMPD 4111. History of Apparel Through Film from 1900 to Present. 1 Hour.
This course uses historic costume films to trace the evolution of clothing from 1900 to Present. Emphasis is placed on societal aspects such as politics, religion, economy, technology, education, sports, class structure, and gender roles, and how they affect and change dress. Web based course. (Typically offered: Fall and Spring)

## AMPD 4213. Fashion Illustration - UARC. 3 Hours.

The purpose of this course is to develop the fundamentals skills necessary in fashion illustration. Students will be highly encouraged to use various mediums, and also utilize these skills to develop a individual style of drawing for their own design collections. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course\# FASHDRW-317. Prerequisite: AMPD majors only. (Typically offered: Fall)
AMPD 4223. Design Concepts for Fashion Merchandising - UARC. 3 Hours. This course examines the elements of research and design in fashion design, fabrications and merchandising. The student develops creative skills as well as an awareness of the various roles played by workers in the fashion industry. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course \# FASHDES-316. Prerequisite: AMPD majors only. (Typically offered: Fall)

## AMPD 4233. Fashion Design - UARC. 3 Hours.

This course focuses on the key components of the fashion design process including research, trend forecasting, materials investigation and presentation of valuable, market-specific collections. Designers consider current market trends and design concepts as influences on merchandising. Extensive opportunities for the development and communication of a personal design vision in illustrated presentations helps students build portfolio-ready collections. Industry directed projects also provide opportunities to develop brand-conscious yet creative concepts and designs. CAD skills are utilized in a variety of presentational techniques. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course \# FASHDES-316. Prerequisite: AMPD majors only. (Typically offered: Fall)

## AMPD 4243. Pattern Development II - UARC. 3 Hours.

Students learn to drape basic bodice and skirt variations on standard industrial dress forms. Original garments are designed, draped and sewn. Accurate pattern-making, sewing and attention to design fundamentals are stressed throughout the course. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course\# FASD-311. Prerequisite: AMPD majors only. (Typically offered: Fall)

## AMPD 4901. AMPD International Pre-Study Tour. 1 Hour.

A study of specific regional and international fashion markets for apparel studies in preparation for AMPD 4912 AMPD International Study Tour. The course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. AMPD 4901 is content specific to each AMPD 4912 international study tour and must be repeated for each study tour destination. A grade of "C" or better is required to participate in AMPD 4912. Prerequisite: 2.0 minimum GPA. AMPD majors with minimum 30 hours, or consent. (Typically offered: Spring and Summer) May be repeated for up to 4 hours of degree credit.

## AMPD 4901H. Honors AMPD International Pre-Study Tour. 1 Hour.

A study of specific regional and international fashion markets for apparel studies in preparation for AMPD 4912 AMPD Study Tour. The course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. AMPD 4901 is content specific to each AMPD 4912 study tour and must be repeated for each study tour destination. A grade of "C" or better is required to participate in AMPD 4912. Prerequisite: 2.0 minimum GPA. AMPD majors with minimum 30 hours, or consent. (Typically offered: Spring and Summer) May be repeated for up to 4 hours of degree credit.
This course is equivalent to AMPD 4901.

AMPD 4912. AMPD International Study Tour. 2 Hours.
An on-site study of international fashion markets for apparel merchandising and product development. Course further examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets as outlined in AMPD 4901. Course includes study trip; length based upon destination. Additional fees required. Course offered each May Intersession. Prerequisite: AMPD 4901 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Corequisite: AMPD 4901 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.
AMPD 4912H. Honors AMPD International Study Tour. 2 Hours.
An on-site study of international fashion markets for apparel merchandising and product development. Course further examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets as outlined in AMPD 4901. Course includes study trip; length based upon destination. Additional fees required. Course offered each May Intersession. Prerequisite: AMPD 4901 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Corequisite: AMPD 4901 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Summer) May be repeated for up to 8 hours of degree credit.
This course is equivalent to AMPD 4912.

## AMPD 4921. AMPD New York City Pre-Study Tour. 1 Hour.

A pre-study of the New York fashion market for apparel students. Course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. Course is a pre-requisite for AMPD 4952 a 6 day field study in New York City, NY, May Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, and students must be a AMPD majors with a minimum of 30 hours, or consent. (Typically offered: Spring)

## AMPD 4921H. Honors AMPD New York City Pre-Study Tour. 1 Hour.

A pre-study of the New York fashion market for apparel students. Course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. Course is a pre-requisite for AMPD 4952 a 6 day field study in New York City, NY, May Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, students must be a AMPD majors with a minimum of 30 hours, and honors standing or consent. (Typically offered: Spring) This course is equivalent to AMPD 4921.

## AMPD 4931. AMPD Virtual Las Vegas Pre-Study Tour. 1 Hour.

Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. This course is a pre-requisite for AMPD 4962. This course is only offered to AMPD majors. Prerequisite: Students must have a 2.0 minimum GPA and must be an AMPD major with a minimum 30 hours completed, or consent. (Typically offered: Spring)

## AMPD 4931H. Honors AMPD Virtual Las Vegas Pre-Study Tour. 1 Hour.

 Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. This course is a pre-requisite for AMPD 4962. This course is only offered to AMPD majors. Prerequisite: Students must have a 2.0 minimum GPA, must be an AMPD major with a minimum 30 hours completed, and must have honors standing or consent. (Typically offered: Spring)This course is equivalent to AMPD 4931.

## AMPD 4941. AMPD Las Vegas Pre-Study Tour. 1 Hour.

A pre-study of the Las Vegas MAGIC trade show for apparel merchandising and product development. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods to mass markets. Course is a pre-requisite for AMPD 4952 or AMPD 4952H a 6-day field study in Las Vegas, Nevada, August Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, and students must be an AMPD major with a minimum of 30 hours, or consent. (Typically offered: Spring)
AMPD 4941H. Honors AMPD Las Vegas Pre-Study Tour. 1 Hour.
A pre-study of the Las Vegas MAGIC trade show for apparel merchandising and product development. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods to mass markets. Course is a pre-requisite for AMPD 4952 or AMPD 4952H a 6-day field study in Las Vegas, Nevada, August Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, students must be an AMPD major with a minimum of 30 hours, and have honors standing or consent. (Typically offered: Spring) This course is equivalent to AMPD 4941.

## AMPD 4952. AMPD New York City Study Tour. 2 Hours.

The course examines the application of business practices in the design, production, distribution and retailing of goods including sourcing, and manufacturing to mass markets. Students are expected to take an active role in the learning process for the duration of the study abroad experience, including critical thinking, problem identification and self-initiated inquiry. 2 credit hours Summer May Intersession enrollment includes study tour and related assignments to be completed on site. Corequisite: AMPD 4921 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. Prerequisite: AMPD 4921 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. (Typically offered: Spring)

## AMPD 4952H. Honors AMPD New York City Study Tour. 2 Hours.

The course examines the application of business practices in the design, production, distribution and retailing of goods including sourcing, and manufacturing to mass markets. Students are expected to take an active role in the learning process for the duration of the study abroad experience, including critical thinking, problem identification and self-initiated inquiry. 2 credit hours Summer May Intersession enrollment includes study tour and related assignments to be completed on site. Corequisite: AMPD 4921 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 minimum GPA, AMPD major with minimum 30 hours, honors standing and instructor consent. Prerequisite: AMPD 4921 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, honors standing and instructor consent. (Typically offered: Spring)
This course is equivalent to AMPD 4952.

## AMPD 4962. AMPD Virtual Las Vegas Study Tour. 2 Hours.

Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. Corequisite: AMPD 4931 (with a C or better, if corequisite, must have $C$ or better at time of virtual tour), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. Prerequisite: AMPD 4931 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. (Typically offered: Spring)

AMPD 4962H. Honors AMPD Virtual Las Vegas Study Tour. 2 Hours.
Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials.Corequisite: AMPD 4931 (with a C or better, if corequisite, must have C or better at time of virtual tour), 2.0 minimum GPA, AMPD major with minimum 30 hours, instructor consent and honors standing. Prerequisite: AMPD 4931 (with a $C$ or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, instructor consent and honors standing. (Typically offered: Spring)

## AMPD 4972. AMPD Las Vegas Study Tour. 2 Hours.

A 6 day field study of the Las Vegas MAGIC trade show for apparel studies. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods from to mass markets. Course is a 6-day field study in Las Vegas, Nevada, August Intercession. Corequisite: AMPD 4941 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with $\min .30$ hours, and instructor consent. Prerequisite: AMPD 4941 (with a C or better), 2.0 min. GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Spring)

## AMPD 4972H. Honors AMPD Las Vegas Study Tour. 2 Hours.

A 6 day field study of the Las Vegas MAGIC trade show for apparel studies. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods from to mass markets. Course is a 6-day field study in Las Vegas, Nevada, August Intercession. Corequisite: AMPD 4941 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, honors standing and instructor consent. Prerequisite: AMPD 4941 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, honors standing and instructor consent. (Typically offered: Spring)
This course is equivalent to AMPD 4972.

## Hospitality Courses

HOSP 1603. Introduction to Hospitality Management. 3 Hours.
Study of the hospitality industry from a global perspective. Emphasizes an introduction to the different sectors of the hospitality industry: food service, lodging, travel \& tourism, and marketing of the sectors. Exposes students to experienced practitioners who provide real life case studies and perspectives on management in the hospitality environment. Provides career development perspectives and instruction as well as management roles and techniques. (Typically offered: Fall and Spring)

## HOSP 2603. Purchasing and Cost Control. 3 Hours.

Food purchasing with emphasis on specifications. Relationship of food purchasing to available equipment. Receiving, storage, distribution, and inventory control. Meal quality control and costing. Food and nonfood materials, management of the purchasing process, and communication. Specification writing, menu analysis, and costing. Prerequisite: Must be a HESC, HNAD, FNAH, HOSP or IDST with EVMG track major or a EVMG-M student. (Typically offered: Fall and Spring)

## HOSP 2611. Foodservice Sanitation. 1 Hour.

Principles and theory of food safety and sanitation in the hospitality and foodservice industries, focused on prevention of food borne illnesses and ensuring public health and consumer safety. Prerequisite: HNAD, FNAH, or HOSP major, NUTR-M students or CATEBS-FCSE students. (Typically offered: Fall and Spring)

## HOSP 2633. Lodging Property Management. 3 Hours.

Examines the organization, duties and administration of the hotel. Includes: the rooms division, convention/meeting spaces, and general business operations. Preor Corequisite: HOSP 1603. (Typically offered: Fall and Spring)

## HOSP 2643. Intro to Casino Management. 3 Hours.

This course provides an overview of casino operations including the economics of the casino and its interface with hotels and other organizations and the practices and problems associated with the casino management such as staffing, security, controls, taxation and entertainment. Prerequisite: HOSP 1603 and (Hospitality Management Bachelor of Science (HOSPBS) or Hospitality Management Minor (HOSP-M) or Event Management Minor (EVMG-M) students). (Typically offered: Spring)

## HOSP 2653. Introduction to Hospitality Finance. 3 Hours.

Accounting principles, procedures and transactions used for the compilation of financial reports in hospitality industries. Prerequisite: HOSP 1603. (Typically offered: Fall and Spring)

## HOSP 3301. Hospitality Pre-Internship. 1 Hour.

A study of job descriptions, responsibilities at the management level, structural operations, work procedures, job performance evaluations, job application, the resume and portfolio development in preparation for HOSP 4693 Hospitality Management Internship. Prerequisite: HOSP 1603, HOSP majors only, and junior standing. (Typically offered: Fall and Spring)

## HOSP 3623. Introduction to Meetings and Events Management. 3 Hours.

Focuses on the planning and management of meetings and events in the hospitality industry. Includes developing event goals and objectives, site planning and management, event set up, risk management, food and beverage planning and management, budgeting, working with event services vendors, and marketing and promotion of events and meetings. Prerequisite: HOSP 1603, HOSP 2603, and (Hospitality majors (HOSPBS), Event Management Minor (EVMG-M) students or IDSTBA majors with EVMG track). (Typically offered: Fall)

HOSP 3653. Hospitality, Dietetic Management and Human Resources. 3 Hours. Function and methods of management as related to the hospitality, nutrition and dietetic industries. Topics include: recruitment, placement, talent management, training and development, and compensation. Prerequisite: HOSP 1603 or NUTR 1201, and junior standing. (Typically offered: Fall, Spring and Summer)

## HOSP 3673. Event Safety and Venue Management. 3 Hours.

This course will provide students with the information, skills, and tools necessary to help provide a safe environment, reduce liability, and guide individual and group behavior at events. Students will learn how to develop a risk management and safety plan for an event and/or venue, how to identify and plan to avoid potential problems, and how to implement safety and crowd management plans to ensure a safe event. The primary focus of the course will be on live event and venue safety planning. Prerequisite: HOSP 1603, HOSP 2603, HOSP 3623 and (Event Management Minor (EVMG-M) students or IDST major with EVMG track). (Typically offered: Spring)

## HOSP 3713. Beverage Management. 3 Hours.

This course introduces students to the concepts of the beverage industry with an emphasis on management. Standards of hospitality operation are explored as well as a brief overview of the products of the alcohol industry: wine, beer, and spirits. Also included is an overview of non-alcoholic products such as coffee, tea, water, and carbonated beverages. History, cultural relationships, production methods, service and sanitation, and concepts of sales are examined. Prerequisite: HOSP 1603, HOSP 2603, and students must be Hospitality (HOSP) majors; Student must be at least 21 years of age at start of term. (Typically offered: Fall)

HOSP 4602L. Culture and Cuisines of the World Practicum. 2 Hours. Development of service management skills for the hospitality industry through preparation and service of food, staffing, professionalism, recipe standardization, menu planning, cost control, sanitation, safety, and overall quality assurance. Instruction for planning food flow from receiving to service of meals, including choosing proper equipment for the flow plan and service items. Student must have a current Food Managers Certificate which is achieved upon successful completion of HOSP 2611. Laboratory 7 hrs per week. Pre- or Corequisite: HOSP 4603. Prerequisite: NUTR 1213, HOSP 2603, HOSP 2611, Junior standing, Hospitality Management Bachelor of Science in Human Environmental Science (HOSPBS) majors only, and instructor consent required. (Typically offered: Fall and Spring)

HOSP 4603. Culture and Cuisines of the World. 3 Hours.
Explores foods and food ways of various cultural/ethnic groups. Considers origin and migration of foods and customs throughout the world. Studies food's relationship to cultural groups, geographical location, social practices and economic wellbeing. Analyzes impact of multiple cultures on foods, food preparation, and food ways in the U.S. Students must have a current Food Managers Certification, which is achieved upon successful completion of HOSP 2611. Pre- or corequisite: HOSP 4602L. Prerequisite: HOSP 1603, HOSP 2603, HOSP 2611, junior standing, HOSP majors only and instructor consent required. (Typically offered: Fall and Spring)

## HOSP 4613. Festival Management and Analysis. 3 Hours.

This course provides students both knowledge and practical experiences of festival management and analysis. Lectures based on the selected textbook will systematically offer students the understanding of multiple aspects of a festival, such as alignment with the target attendees, connect to community and place, festival media platforms, and monitoring and evaluating festivals. Prerequisite: HOSP 1603, HOSP 2603, and HOSP 3623. (Typically offered: Fall)

## HOSP 4643. Special Events Management. 3 Hours.

Hands-on study of special events. Planning activities include conception, planning, implementation, execution of the hospitality program's annual fundraising event and evaluation. The interaction between staff, customers, guests, vendors, and others necessary to implement a successful special event. Topics including marketing, public relations and volunteer coordination are implemented. Additional focus on catering through, hotels, restaurants, and private companies. Prerequisite: HOSP 1603, HOSP 2603, HOSP 3623 and HOSP majors only. (Typically offered: Spring)

## HOSP 4653. Global Travel and Tourism Management. 3 Hours.

Course recounts the history of travel, explores the future, and discusses the components of tourism from a global perspective. An overview of tourism planning at the global level will be presented. A variety of planning theories, procedures and tourism guidelines to meet the diverse needs of travelers, destination communities, hospitality organizations, public, non-governmental organizations, and the private sector will be introduced in this class. Prerequisite: HOSP 1603, (HOSP 2633 or HOSP 2643), Junior Standing and (Hospitality Management Minor (HOSP-M) students or IDST major with HOSP track). (Typically offered: Spring)

HOSP 4663. Hospitality Management Capstone. 3 Hours.
Integration of previous classroom, laboratory, and practical experiences through development of a comprehensive project. Additional focus on application of critical thinking, demonstration of leadership principles, interaction with industry professionals and development of an awareness of societal and ethical issues and their application to the hospitality industries. Prerequisite: Senior standing. Pre- or corequisite: HOSP 4603, HOSP 4602L, and HOSP 3653. (Typically offered: Spring)

## HOSP 4673. Destination Marketing \& Operations. 3 Hours.

This course is designed to provide students with a basic understanding of the tasks and processes involved in running a successful destination management organization (DMO). The course places heavy emphasis on destination marketing. Prerequisite: HOSP 1603 and junior standing. (Typically offered: Fall)

## HOSP 4693. Hospitality Management Internship. 3 Hours.

Supervised experience in an instructor approved work/learning situation relating to the hospitality industry in multiple aspects of a hospitality organization. Emphasis on application of knowledge and skills to actual job roles and responsibilities related to a future career in the hospitality industry. Requires employment in a hospitality setting for a minimum of 250 clock hours that must be completed in the semester of enrollment. Prerequisite: HOSP 3301, HOSP 2611, HOSP 2633, HOSP 2653, HOSP 3623, HOSP 3653, Junior standing, restricted to HOSP students, 500 hours of documented work-related hospitality industry experience and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## Human Development and Family Sciences Courses

## HDFS 1403. Life Span Development. 3 Hours.

A broad overview of the physical, psychological, and social development of the individual from conception until death. Emphasis is on individual development in a family context. Lecture 3 hours per week. (Typically offered: Fall and Spring)

## HDFS 1403H. Honors Life Span Development. 3 Hours.

A broad overview of the physical, psychological, and social development of the individual from conception until death. Emphasis is on individual development in a family context. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to HDFS 1403.
HDFS 1423. Observation and Foundations for Teaching Young Children. 3 Hours.
Designed to acquaint students with the historical importance of early childhood education, the recognized standards for practice, the variety of program models, and career opportunities available. Emphasis will be placed on theories, evidencebased practice, ethics, diversity, and professional preparation for this knowledgebased, skill-driven field. Students will also obtain knowledge of state and federal laws pertaining to the care and education of young children. (Typically offered: Fall)
HDFS 2401L. Infant and Toddler Development Laboratory. 1 Hour.
Introduction to infant and toddler development. Focus on observation and applied experience with children 0-3 documenting cognitive, emotional, language, physical, and social development, and demonstrating developmentally appropriate practice.
Corequisite: HDFS 2403. Prerequisite: HDFS majors or BRKD majors or HDFS minors or CATEBS-FCSE majors or instructor consent. (Typically offered: Fall and Spring)
HDFS 2403. Infant and Toddler Development. 3 Hours.
Infant and toddler development from conception through toddlerhood with emphasis on physical, emotional, social, language, and cognitive domains. Theoretical and research-based information will be applied to developmentally appropriate practice. Historical and future perspectives will be explored as will the expanding opportunities for professional work with infants and toddlers. Observations in care centers will be assigned. Corequisite: HDFS 2401L. Prerequisite: HDFS majors or BRKD majors or HDFS minors or CATEBS-FCSE majors or by instructor consent. (Typically offered: Fall and Spring)

## HDFS 2413. Family Relations. 3 Hours.

Courtship, marriage, and parenthood in the United States, with attention to cultural and psychological factors which affect relations among family members. Lecture 3 hours per week. (Typically offered: Fall and Spring)

## HDFS 2413H. Honors Family Relations. 3 Hours.

Courtship, marriage, and parenthood in the United States, with attention to cultural and psychological factors which affect relations among family members. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to HDFS 2413.

## HDFS 2433. Child Development. 3 Hours.

Theory, research, and application in physical, cognitive, social, and emotional development of the child, studied in the biocultural context. Begins with prenatal development and continues through adolescence, with special emphasis on early and middle childhood. (Typically offered: Fall and Spring)

HDFS 2433H. Honors Child Development. 3 Hours.
Theory, research, and application in physical, cognitive, social, and emotional development of the child, studied in the biocultural context. Begins with prenatal development and continues through adolescence, with special emphasis on early and middle childhood. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to HDFS 2433.

## HDFS 2463. Introduction to Leadership and Administration in the Helping

 Professions. 3 Hours.The class is a basic introduction of leadership and emotional intelligence as it relates to becoming a successful administrator in the helping professions-based careers. Emphasis will be on administrators' roles as leaders in organizations. Topics include facilities, budget, staff development, and policy manuals. Prerequisite: Human Environmental Science (HESCBS) majors, Human Development \& Family Science (HDFSBS) majors, Birth through Kindergarten (BRKDBS) majors, Human Development \& Family Science (HDFS-M) minors, or departmental consent. (Typically offered: Fall)

## HDFS 2471L. Child Guidance Laboratory. 1 Hour.

Introduction to the guidance system. Focus on discipline techniques that are positive and age/stage appropriate for children ages 3-8. Corequisite: HDFS 2473. Prerequisite: HDFS 2433. (Typically offered: Fall and Spring)

HDFS 2473. Child Guidance. 3 Hours.
Introduction to the guidance system. Focus on discipline techniques that are positive and age/stage appropriate for children ages 3-8. Lecture 3 hours per week plus 1 hour demonstration. Corequisite: HDFS 2471L. Prerequisite: HDFS 2433. (Typically offered: Fall and Spring)

## HDFS 2483. Family Financial Management. 3 Hours.

Economic considerations of the family in a rapidly changing society. Family finance and consumer problems are emphasized. Prerequisite: HDFS 2413 or HDFS 2413H. (Typically offered: Fall and Spring)

## HDFS 2493. Introduction to Cultural Competence. 3 Hours.

Basic introduction to definitions of intercultural competence, diversity, cultural values and beliefs, attitudes and verbal and non-verbal behavior, are examined to identify basic differences among individuals from diverse cultural backgrounds and across populations. (Typically offered: Fall, Spring and Summer)
HDFS 2603. Rural Families and Communities. 3 Hours.
Meaning of sociology and sociological concepts with reference to rural society, families and communities; interdependence of rural and urban population in ecological areas; institutions; social change and adjustment. (Typically offered: Fall and Spring)

HDFS 2603H. Honors Rural Families and Communities. 3 Hours.
Meaning of sociology and sociological concepts with reference to rural society, families and communities; interdependence of rural and urban population in ecological areas; institutions; social change and adjustment. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to HDFS 2603.

HDFS 3333. Language and Literacy Pedagogy for Birth through Kindergarten Educators. 3 Hours.
This course combines theory on emergent language and literacy development with research-based pedagogy for birth through kindergarten classrooms. Topics include: language and literacy development and exceptionalities, English Language Learners, environmental influences, best practice pedagogy, identifying language and literacy delays, and intervention strategies. This course includes a service learning component. Prerequisite: HDFS 2433, HDFS 2403 and HDFS 2401L. (Typically offered: Fall)

## HDFS 3423. Adolescent Development. 3 Hours.

Physiological and psychological development of the older child and youth, from pre-adolescence to adulthood. Theories of adolescent development. Cross-
cultural studies. Peer group influences. Some attention to pathological behaviors. Prerequisite: HDFS 1403 or PSYC 2003. (Typically offered: Fall and Spring)

## HDFS 3423H. Honors Adolescent Development. 3 Hours.

Physiological and psychological development of the older child and youth, from pre-adolescence to adulthood. Theories of adolescent development. Crosscultural studies. Peer group influences. Some attention to pathological behaviors. Prerequisite: HDFS 1403 or PSYC 2003 and honors standing. (Typically offered: Spring Odd Years)
This course is equivalent to HDFS 3423.
HDFS 3443. Families in Crisis. 3 Hours.
An interdisciplinary perspective on internal and external crises faced by contemporary families, including substance abuse, natural disasters and other crisis events. Students will explore the family processes during such experiences and develop strategies for stress management, coping, and recovery. Lecture 3 hours per week. Prerequisite: HDFS 2413 or HDFS 2413H. (Typically offered: Fall)
HDFS 3443H. Honors Families in Crisis. 3 Hours.
An interdisciplinary perspective on internal and external crises faced by contemporary families, including substance abuse, natural disasters and other crisis events. Students will explore the family processes during such experiences and develop strategies for stress management, coping, and recovery. Lecture 3 hours per week. Prerequisite: Honors standing and HDFS 2413 or HDFS 2413H. (Typically offered: Fall)
This course is equivalent to HDFS 3443.
HDFS 3453. Parenting and Family Dynamics. 3 Hours.
Focus is on influence of parenting and family dynamics on individual development, especially factors in family life which contribute to normal psychological development. Topics include family values, the psychology of sex and pregnancy, the transition to parenthood, childbearing techniques, family influences on cognitive and social development, and changes in family relationships during the life cycle. Prerequisite: (HDFS majors, HDFS minors, BRKD majors, CATEBS-FCSE majors, or IDST majors with HDFS track) and (HDFS 1403 or PSYC 2003). (Typically offered: Fall and Spring)

## HDFS 3463. The Hospitalized Child: Child Life Programming. 3 Hours.

Introduces child life programming in health care settings. Topics include: roles and expectations of a Child Life Specialist, importance of play, coping techniques, family advocacy, administration and professionalism. Lecture 3 hours per week.
Prerequisite: HDFS 2433 and (HDFS or BRKD majors, HDFS or CDSV minors, or IDST major with a CDSV or HDFS track). (Typically offered: Fall and Spring)

HDFS 3481. Pre-Internship in Human Development and Family Sciences. 1 Hour.
This course prepares students for their internship experience (HDFS 4483) in Human Development and Family Sciences. Topics covered include professional and ethical behavior when working with people, families and communities. The course will also cover professional and career development topics. By the end of the course, students are expected to have secured an internship position suitable for HDFS 4483. Students should enroll in this course no earlier than the semester before they anticipate enrolling in HDFS 4483. Prerequisite: Junior standing and HDFS majors only. (Typically offered: Fall and Spring)

HDFS 4212L. Math and Science for Young Children Lab. 2 Hours.
Students will plan curriculum for young children ages 0-5 in the areas of math and science. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4213. (Typically offered: Fall)

## HDFS 4213. Math and Science for Young Children. 3 Hours.

Students will plan curriculum for young children ages 0-5 in the areas of math and science. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will design lesson plans for young children and will learn about effective implementation of curriculum. Corequisite: HDFS 4212L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Fall)

## HDFS 4222L. Creative and Social Experiences for Young Children Lab. 2

 Hours.Students will plan curriculum for young children ages 0-5 in the areas of the arts and social emotional learning. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4223. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Spring)
HDFS 4223. Creative and Social Experience for Young Children. 3 Hours. Students will plan curriculum for young children ages 0-5 in the areas of the arts and social emotional learning. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will design lesson plans for young children and will learn about effective implementation of curriculum. Corequisite: HDFS 4222L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Spring)
HDFS 4233. Developmental Assessment in Early Childhood. 3 Hours. Students will learn about developmentally appropriate observation, assessment, and documentation techniques and how to use these in high quality early childhood classrooms. Advantages and limitations of various assessment techniques, considerations used when interpreting findings, and the and making referrals will be discussed. Additional emphasis will be on anti-biased and culturally competent assessment, giving students methods to recognize and support learning and development in all young children. (Typically offered: Fall)

## HDFS 4313. Building Family and Community Relationships. 3 Hours.

This course will help students interested in early childhood to value the role parents play in schools and the role schools play in a community. Various models of parent involvement will be explored. Students will plan a school-community collaborative which values diverse cultures. Prerequisite: (HDFS 2413 or HDFS 2603) and (HDFS or BRKD majors, HDFS or CDSV minors, or IDST major with CDSV track or IDST major with HDFS track). (Typically offered: Spring)

HDFS 4332. Curriculum and Assessment: Birth to Three Years. 2 Hours.
The course will introduce students to curriculum planning and assessment in programs serving children from birth to three years of age. Emphasis will be on responsive relationships and curriculum focused on routines and activities. Corequisite: HDFS 4332L. Prerequisite: HDFS 2403 and HDFS 2401L. (Typically offered: Spring)

HDFS 4332L. Curriculum and Assessment: Birth to Three Years Laboratory. 2 Hours.
Laboratory. Corequisite: HDFS 4332. Prerequisite: HDFS 2403 and HDFS 2401L. (Typically offered: Spring)
HDFS 4342. Curriculum and Assessment: Three Years through Kindergarten. 2 Hours.
Students will plan curriculum and assessment for children three years of age through kindergarten. Emphasis will be on professionalism, philosophy and a code of ethics. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4342L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Fall)
HDFS 4342L. Curriculum and Assessment: Three Years through Kindergarten. 2 Hours.
Laboratory. Corequisite: HDFS 4342. (Typically offered: Fall)
HDFS 4353. Play as Development in Childhood. 3 Hours.
This course will examine the contribution of play to cognitive, social, and emotional development of children. It will provide an overview of play theories and practices in indoor and outdoor settings, with an emphasis on nature-based learning and diversity and inclusion. Prerequisite: HDFS 2433, junior standing and HDFS, BRKD, or IDSTBA major or HDFS or CDSV minor. (Typically offered: Fall and Spring)

## HDFS 4363. Play as Development in Adulthood. 3 Hours.

This course will examine play as it pertains to development throughout life with a particular focus on adulthood. The modes of adult play will be examined, along with the benefits of play across adulthood. Emphasis will be on play, not as opposition to work, but as a part of a full life. Prerequisite: HDFS 1403. (Typically offered: Fall and Spring)

HDFS 4373. Internship: Infant, Toddler, and Preschool Programs. 3 Hours.
This course provides the student with interactive and observational experiences with young children in community-based early childhood programs. Some on-campus meetings will be required. Prerequisite: HDFS 4213, HDFS 4212L, HDFS 4223, and HDFS 4222L. (Typically offered: Spring)

## HDFS 4383. Internship: Kindergarten Programs. 3 Hours.

This course provides the student with interactive and observational experiences with young children in community-based kindergarten programs. Some on-campus meetings will be required. Prerequisite: HDFS 4213, HDFS 4212L, HDFS 4223, and HDFS 4222L. (Typically offered: Spring)
HDFS 4413. Infancy: Brain, Learning and Social Cognition. 3 Hours.
Investigation into how brain mechanisms interact with experience to provide the basis for learning and social cognition. Topics include face perception, motor cognition, imitation, joint attention and shared experience, empathy and altruism, theory of mind, social and moral cognition, language, memory, number, geometry and navigation, object representation, and executive function. Prerequisite: HDFS 2433 or PSYC 3093. (Typically offered: Spring)
HDFS 4413H. Honors Infancy: Brain, Learning and Social Cognition. 3 Hours. Investigation into how brain mechanisms interact with experience to provide the basis for learning and social cognition. Topics include face perception, motor cognition, imitation, joint attention and shared experience, empathy and altruism, theory of mind, social and moral cognition, language, memory, number, geometry and navigation, object representation, and executive function. Prerequisite: Honors standing and HDFS 2433 or PSYC 3093. (Typically offered: Spring) This course is equivalent to HDFS 4413.

## HDFS 4423. Adult Development. 3 Hours.

This course examines the social, psychological, and biological development that occurs throughout adulthood, with an emphasis on middle and later adulthood. Taking a life course perspective, this course particularly focuses on life course trajectories and variabilities across cultural contexts. Prerequisite: HDFS 1403 and Junior Standing. (Typically offered: Fall and Spring)

## HDFS 4443. Gerontology. 3 Hours.

Physiological and psychological development of the aging individual, extended family relations, service networks for the elderly, and retirement activities. Some attention to housing and care needs of persons in advanced years. Lecture 3 hours per week. Seminar. Prerequisite: HDFS 1403 (or HDFS 2413 or PSYC 2003 or SCWK 2133) and junior standing. (Typically offered: Spring)

## HDFS 4473. Multicultural Families. 3 Hours.

The course provides students with opportunities to gain awareness of their own cultures and families, reflect on families from a diverse array of cultures, and develop critical thinking skills needed to effectively engage with people and families from cultures different than their own. Prerequisite: HDFS 2493 and Junior or Senior Standing. (Typically offered: Fall)
HDFS 4483. Internship in Human Development and Family Studies. 3 Hours.
The internship experience provides practical experience for students in settings that are designed to serve the needs of individuals and/or families across the life span. Students must work a minimum of 150 hours in the setting. May be repeated for up to 6 hours of degree credit. Prerequisite: Grade of B or higher in HDFS 3481, junior standing, and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## HDFS 4493. Public Policy Advocacy for Children and Families. 3 Hours.

Public policy advocacy as related to children and family issues. Strategies for advocacy will be emphasized. Lecture three hours per week. Prerequisite: Junior standing and (HDFS majors or IDST majors with HDFS track). (Typically offered: Fall)
HDFS 4493H. Honors Public Policy Advocacy for Children and Families. 3 Hours.
Public policy advocacy as related to children and family issues. Strategies for advocacy will be emphasized. Lecture three hours per week. Prerequisite: Honors and Junior standing, and (HDFS major or IDST major with HDFS track). (Typically offered: Fall)
This course is equivalent to HDFS 4493.

## HDFS 4603. Environmental Sociology. 3 Hours.

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. (Typically offered: Irregular)
This course is cross-listed with SOCI 4603, SUST 4603.
HDFS 4763. Research in HDFS: Methodological Approaches. 3 Hours. This class introduces the methodology of HDFS and other social sciences in the social world. It covers research design, sampling, measurement, and other topics that underlie the social science conclusions presented to you in other classes. The class begins with an introduction to the goals of social science research, then focuses on the understanding of the 3 validities with which social scientists, and consumer of social science, must concern themselves: Internal, Measurement, and External. Each of these three validities is used as the focus of a course section. The class concludes with a fourth section that integrates these topics and other social science methods. It is recommended that HDFS students complete Rural Families and Communities (HDFS 2603) prior to enrolling in this course. Prerequisite: HDFS major and Junior Standing. (Typically offered: Fall)

## HDFS 4773. Research in HDFS: Statistical Approaches. 3 Hours.

This course is an introduction to analytical approaches to research in human development and family sciences and will examine the principles and practices underlying the development of knowledge in the field. Emphases in this course will be on conducting and evaluating data analyses relevant to human environmental sciences majors. Students will become critical consumers of data and develop basic skills to analyze and interpret their own data. Prerequisite: HDFS 4763, STAT 2303, and HDFS major. (Typically offered: Spring)

## Human Environmental Sciences Courses

HESC 255V. Special Topics. 1-6 Hour.
Topics not covered in other courses or a more intensive study of specific topics in the specializations of human environmental sciences. (Typically offered: Irregular) May be repeated for degree credit.

HESC 400V. Special Problems. 1-6 Hour.
Special problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## HESC 455V. Special Topics. 1-6 Hour.

Topics not covered in other courses, a focused study of specific topics in the students' areas of concentration. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HESC 455VH. Honors Special Topics. 1-6 Hour.
Topics not covered in other courses, a focused study of specific topics in the students' areas of concentration. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HESC 455V.

## Nutrition Courses

NUTR 1201. Introduction to the Dietetic Profession. 1 Hour.
Introduction to profession of dietetics and nutrition including history, scope and future of professionals with emphasis on academic preparation, internships, acquisition of professional credentials, career laddering and career opportunities. Guest speakers will supplement lectures and assignments. Prerequisite: HNAD or FNAH majors only or by department consent. (Typically offered: Fall and Spring)

## NUTR 1213. Fundamentals of Nutrition. 3 Hours.

The functions of food, body processes, optimum diets in relation to health and physical fitness. (Typically offered: Fall and Spring)

## NUTR 1213H. Honors Fundamentals of Nutrition. 3 Hours.

The functions of food, body processes, optimum diets in relation to health and physical fitness. (Typically offered: Fall and Spring)
This course is equivalent to NUTR 1213.

## NUTR 2111L. Principles of Foods Laboratory. 1 Hour.

Laboratory exercises and practice applicable of Principles of Foods. Lab 3 hours.
Corequisite: NUTR 2113. (Typically offered: Fall and Spring)

## NUTR 2113. Principles of Foods. 3 Hours.

Physical and chemical characteristics of foods, organized by food science and nutrition, protein foods, phytochemicals, complex and refined carbohydrates, and fats. Emphasis on food preparation and storage methods and effect on foods. Investigation and practice of food preparation basics, cooking and baking techniques, knife skills, food safety, and sensory evaluation of food. Corequisite: NUTR 2111L. Prerequisite: NUTR 1213, a C or higher in HOSP 2611, (CHEM 1073, or CHEM 1103, or CHEM 1203), one of the following programs, minors or concentrations: (HNADBS, FNAHBS, HESCBS, NUTR-M, or CATEBS-FCSE) and students must also have a current ServSafe Manager's Certification. (Typically offered: Fall and Spring)

NUTR 2203. Sports Nutrition. 3 Hours.
The integration of concepts from nutrition and exercise physiology into an applied multidisciplinary study of how food, beverages and dietary supplements influence physical performance. Prerequisite: NUTR 1213. (Typically offered: Summer)

## NUTR 3101L. Culinary Nutrition Lab. 1 Hour.

Students will explore ways to apply evidence based nutrition research to culinary application. It addresses the fundamental culinary skills and knowledge required to prepare meals that impact the nutritional and sensory appeal of food. Corequisite: NUTR 3103. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Fall)

NUTR 3101M. Honors Culinary Nutrition Lab. 1 Hour.
Students will explore ways to apply evidence based nutrition research to culinary application. It addresses the fundamental culinary skills and knowledge required to prepare meals that impact the nutritional and sensory appeal of food. Corequisite:
NUTR 3103H. Prerequisite: NUTR 2113, NUTR 2111L and honors standing. (Typically offered: Fall)
This course is equivalent to NUTR 3101L.

## NUTR 3103. Culinary Nutrition. 3 Hours.

This course is grounded in a food first approach to health and wellness with an emphasis on disease prevention. Students will study the physical and chemical characteristics of foods that increase nutritional value and will include exploration of the culinary nutrition modification process and application of these concepts to planning nutritionally balanced meals. Corequisite: NUTR 3101L. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Fall)

## NUTR 3103H. Honors Culinary Nutrition. 3 Hours.

This course is grounded in a food first approach to health and wellness with an emphasis on disease prevention. Students will study the physical and chemical characteristics of foods that increase nutritional value and will include exploration of the culinary nutrition modification process and application of these concepts to planning nutritionally balanced meals. Corequisite: NUTR 3101M. Prerequisite: NUTR 2113, NUTR 2111L and honors standing. (Typically offered: Fall) This course is equivalent to NUTR 3103.

## NUTR 3203. Human Nutrition. 3 Hours.

Fundamental human nutrition; nutritive value of foods and general functions of nutrients based on concepts derived from inorganic and organic chemistry. Examples relating nutrition to disease used as illustrations to deepen understanding of normal nutrition. Lecture 3 hours per week. Corequisite: CHEM 2613 and CHEM 2611L or CHEM 3603 and CHEM 3601L. Prerequisite: NUTR 1213. (Typically offered: Fall)

## NUTR 3213. Nutrition Education and Counseling. 3 Hours.

Introduction to development of communication skills related to educational theory and techniques, development of educational materials, interpersonal communication skills, group dynamics, public speaking, and interviewing techniques. Includes discussion of counseling theory and methods, and how education and counseling are intertwined for nutrition professionals. Includes development of skills in nutrition counseling. Prerequisite: NUTR 1213, HNAD or FNAH majors only, and Junior or Senior standing. (Typically offered: Fall)

NUTR 3213H. Honors Nutrition Education and Counseling. 3 Hours.
Introduction to development of communication skills related to educational theory and techniques, development of educational materials, interpersonal communication skills, group dynamics, public speaking, and interviewing techniques. Includes discussion of counseling theory and methods, and how education and counseling are intertwined for nutrition professionals. Includes development of skills in nutrition counseling. Prerequisite: NUTR 1213, HNAD or FNAH majors only, Junior or Senior standing, and honors standing. (Typically offered: Fall)
This course is equivalent to NUTR 3213.

## NUTR 3303. Nutrition Assessment. 3 Hours

Principles of nutritional assessment and methodology including anthropometric, biochemical, clinical, and dietary evaluation. Emphasis placed on Nutrition Focused Physical Assessment, the interpretation of indices for all age groups in health and disease for both individuals and groups, and the application of nutrition assessment data in the nutrition care process. Prerequisite: NUTR 3203, junior standing and HNAD/FNAH majors only. (Typically offered: Spring)

## NUTR 3603. Quantity Foods. 3 Hours.

This course focuses on menu planning for a variety of food service organizations, with consideration of age, special needs, diet type, cultural and ethical parameters. Students will design flavorful and appealing menus that meet current nutrition recommendations, guidelines and budgetary constraints. They will learn recipe standardization, quantity production, and overall quality control. Prerequisite: NUTR 1213, HOSP 2603, junior standing and Human Nutrition and Dietetics Bachelor of Science (HNADBS) or Food, Nutrition and Health Bachelor of Science (FNAHBS) majors only. (Typically offered: Spring)

NUTR 4001. Nutrition Seminar. 1 Hour.
Presentation and discussion of selected nutrition topics of current interest. Prerequisite: Senior standing and HNAD or FNAH majors only. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

NUTR 4103. Research Methods in Nutrition. 3 Hours.
This course will cover applications of experimental methods for investigations in nutrition research and cookery. Pre- or Corequisite: STAT 2303. Prerequisite: Major in either Human Nutrition and Dietetics (HNAD), or Food, Nutrition and Health (FNAH) and senior standing only. (Typically offered: Spring)

## NUTR 4213. Advanced Nutrition I. 3 Hours.

This course will cover nutritional, physiological, and biochemical aspects of carbohydrate, protein, and lipid metabolism in humans and their implications in health and disease. Prerequisite: CHEM 3813 and NUTR 3203. (Typically offered: Fall)

NUTR 4223. Life Cycle Nutrition. 3 Hours.
Study of normal nutrition emphasizing quantitative needs for nutrients as functions of biologic processes that vary during stages of the life cycle. Attention is given to preconception, pregnancy, childhood and older adults. Prerequisite: (HNAD majors and NUTR 3203) or (FNAH majors and junior standing). (Typically offered: Fall)

NUTR 4233. Advanced Nutrition II. 3 Hours.
This course will cover nutritional, physiological, and biochemical aspects of vitamins and minerals in humans, their functions and roles in metabolism, and their implications in health and disease. Prerequisite: NUTR 4213. (Typically offered: Spring)
NUTR 4243. Community Nutrition. 3 Hours.
Identifying, assessing, and developing solutions for nutritional problems encountered at the local, state, federal, and international levels. Lecture 3 hours per week. Prerequisite: NUTR 1213, junior standing, and Food, Nutrition and Health Bachelor of Science in Human Environmental Science (FNAHBS) or Human Nutrition and Dietetic Bachelor of Science in Human Environmental Science (HNADBS) majors or Nutrition minors only. (Typically offered: Spring)

## NUTR 4263. Medical Nutrition Therapy I. 3 Hours.

Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Pre- or corequisite: NUTR 3213 and NUTR 4213. Prerequisite:
BIOL 2213, BIOL 2211L, CHEM 3813 and NUTR 3303. (Typically offered: Fall)
NUTR 4273. Medical Nutrition Therapy II. 3 Hours.
Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Lecture 3 hours per week. Prerequisite: NUTR 4263. (Typically offered: Spring)

NUTR 4303. Cultural Perspectives on Foods. 3 Hours.
Cultural competence is growing in importance as our population becomes more culturally diverse. This course covers cuisine and culture of various regions for the purpose of promoting respect and understanding for cultural diversity. Students will learn the history of foods, ingredients, flavor profiles, religious based food practices, etiquette, and customs. Corequisite: Junior or senior standing, and (Human Nutrition and Dietetics majors (HNADBS) or Food, Nutrition and Health majors (FNAHBS) or Hospitality Management (HOSPBS) majors). (Typically offered: Fall)

## NUTR 4401L. Recipe Modification Lab. 1 Hour.

Students will use existing research to identify foods with preventative and functional properties and apply that information to develop recipes for improved nutritional quality and disease management. They will gather data to modify and refine the products and create an educational tool to promote their products. Corequisite: NUTR 4403. (Typically offered: Spring)
NUTR 4403. Recipe Modification. 3 Hours.
Students will use existing research to identify foods with preventative and functional properties and apply that information to develop recipes for improved nutritional quality and disease management. They will gather data to modify and refine the product and create an educational tool to promote their product. Corequisite: NUTR 4401L. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Spring)

## Apparel Merchandising and Product Development (AMPD)

Donna L. Graham<br>Director<br>118 Home Economics Building<br>479-575-4305

The Apparel Merchandising and Product Development (AMPD) program opens the door to careers in the fashion industry. Buyer, product development specialist, fashion coordinator, sales consultant, visual display artist, and quality assurance technician are only a few of the possibilities. Classes in business, retailing, apparel production, science, social science, and the liberal arts give students a basic knowledge about the textile and apparel industries. By selecting from a variety of minors, students can tailor this program to meet their goals. Program strengths include guest speakers who provide insight into today's careers, tours of major fashion centers, and internships, which provide valuable career experience.

## Requirements for a Major in Apparel Merchandising and Product Development

State minimum core (p. 81) and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)

## University Requirements <br> UNIV 1001 University Perspectives

Communication
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)

COMM, ENGL, JOUR or World Language
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)


AMPD Requirements 52
AMPD 1013 Introduction to Clothing Concepts
AMPD 1023 Introduction to Apparel Production
AMPD 2013 Fashion, Buying and Promotion in a Global Market
AMPD 2033 Computer Based Methods for Apparel
AMPD 2053 Introduction to Textile Science
AMPD 2063 Quality Assessment of Apparel
AMPD 2073 Flat Pattern Drafting
AMPD 3033 Merchandising Math for the Apparel Industry
AMPD 3043 Fashion Brand Management
AMPD 3053 Computer Aided Textile Design
AMPD 3063 Digital Apparel Production
AMPD 3071 Apparel Merchandising and Product Development Pre-Internship
AMPD 4023 Merchandising Application for the Apparel Industry
AMPD 4053 Historic and Contemporary Apparel
AMPD 4063 Advanced Apparel Production
AMPD 4083 Apparel Merchandising and Product Development Internship
AMPD 4093 Apparel Merchandise Planning and Inventory Control

Select one pre-study and study tour from the following:
AMPD 4901 AMPD International Pre-Study Tour or AMPD 49:AMPD New York City Pre-Study Tour
or AMPD 49:AMPD Virtual Las Vegas Pre-Study Tour or AMPD 49،AMPD Las Vegas Pre-Study Tour AMPD 4912 AMPD International Study Tour or AMPD 4958MPD New York City Study Tour or AMPD 4968MPD Virtual Las Vegas Study Tour or AMPD 497*MMPD Las Vegas Study Tour

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Computers
ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers (or equivalent course)
or ISYS 112Business Application Knowledge - Computer Competency
ACOM 4243 Graphic Design in AFLS
General Electives \({ }^{2,3} 14\)
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Suggested Electives:
AMPD 4011 History of Apparel Through Film to 1900
AMPD 4103 Evolution of Fashion and Society Through Television Media
AMPD 4111 History of Apparel Through Film from 1900 to Present

AMPD 4073 Fashion Show Theory and Production
MKTG 3433 Introduction to Marketing (Required for Business Minor - additional pre-requisite courses required)
Any 3000-4000 level MKTG (additional pre-requisites required)

## Total Hours

1 Students may substitute AGEC 1103 and AGEC 2103 or ECON 2013 and ECON 2023 for ECON 2143.
2 Elective hours will vary based on exemptions.
3 A minimum of 40 hours must be completed at the 3000-4000 level.

## Apparel Merchandise and Product Development B.S.H.E.S. <br> Nine-Semester Degree Program

Because the Apparel Merchandise and Product Development program requires a summer tour and an internship, it doesn't qualify for the EightSemester Degree Program. Go to the Eight-Semester Degree Policy (p. 67) for university requirements of the program. The program plan below, though, gives a path for completing required courses in a four-year period.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| Summer |  |  |



| US History or Government State | 3 |  |
| :--- | ---: | ---: |
| Minimum Core Elective (Satisfies |  |  |
| General Education Outcome 4.2 |  |  |
| AMPD 4063 Advanced Apparel |  |  |
| Production |  |  |
| AMPD 4093 Apparel Merchandise |  |  |
| Planning and Inventory Control |  |  |
| (Satisfies General Education Outcome |  |  |
| 5.1) |  |  |
| Science State Minimum Core Elective |  |  |
| (Satisfies General Education Outcome |  |  |
| 3.4) |  |  |
| General Electives |  |  |
| Year Total: |  |  |

## Total Units in Sequence:

${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:

| WLLC 398V | Special Studies (must choose "To Rome with <br> Love" special topic for 3 hours) |
| :--- | :--- |
| ITAL 1003 | Elementary Italian I |
| ITAL 1013 | Elementary Italian II |
| MKTG 3433 | Introduction to Marketing |
| FINN 2043 | Principles of Finance |
| FINN 3003 | Personal Financial Management |
| BUSI 330V | Walton College Study Abroad (Must choose "The <br> Business of Art in Rome" special topic for 3 hours) |
| INST 2813 | Introduction to International Relations and Global <br> Studies |

## Total Hours

${ }^{1}$ Must be completed at UA-Fayetteville before study abroad at the Rome Center
${ }^{2}$ For students who have completed AMPD 2073 Flat Pattern Drafting or AMPD 3063 Digital Apparel Production or a UA Rome Center elective course.
${ }^{3}$ Course taken at the Rome Center
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1013, MLIT 1003H, MLIT 1333, THTR 1003, THTR 1013 or THTR 1013H.
2 Or equivalent course for ISYS 1123.
${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
${ }^{4}$ See student degree audit for approved course list.
${ }^{5}$ See faculty/academic advisor for recommended AMPD-related electives.

## Minor in AMPD Global Experience

Apparel Merchandising and Product Development students will have the opportunity to broaden their international knowledge of the apparel industry by participating in a semester long study abroad program. This program will be offered in the fall semesters at the university's Rome Center in Rome, Italy. Apparel Merchandising and Product Development curriculum will provide an on-site study of apparel courses focusing on trend forecasting, styling, fashion illustration, fashion design and pattern development (draping) or elective. The 18-credit hour program will complete a minor in AMPD Global Experiences. Classes include:

| Required Courses (3 hours) |  |  |
| :---: | :---: | :---: |
| COMM 2323 | Interpersonal Communication ${ }^{1}$ | 3 |
| Select select $\mathbf{1 2}$ hours from the following AMPD courses: |  | 12 |
| AMPD 3203 | Fashion Styling - UARC |  |
| AMPD 3213 | Trend Forecasting - UARC |  |
| AMPD 4213 | Fashion Illustration - UARC |  |
| AMPD 4223 | Design Concepts for Fashion Merchandising UARC |  |
| AMPD 4233 | Fashion Design - UARC |  |
| AMPD 4243 | Pattern Development II- UARC ${ }^{2}$ |  |

Required Courses (3 hours)
COMM 2323 Interpersonal Communication ${ }^{1}$

## Rome Center Elective ${ }^{3}$

Recommend selecting 3 hours from the following list:

## Courses

## AMPD 1013. Introduction to Clothing Concepts. 3 Hours.

Origin of dress, the evolution of fashion as an economic power, the sociological and psychological aspects of clothing in various cultures, aesthetics of dress, selection and consumption of clothing. Lecture 3 hours per week. (Typically offered: Fall and Spring)

## AMPD 1013H. Honors Introduction to Clothing Concepts. 3 Hours.

Origin of dress, the evolution of fashion as an economic power, the sociological and psychological aspects of clothing in various cultures, aesthetics of dress, selection and consumption of clothing. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to AMPD 1013.
AMPD 1023. Introduction to Apparel Production. 3 Hours.
Course focuses on basic principles of apparel production and analysis of garment components of mass produced apparel. Students utilize computer generated designs in the production process. Laboratory 6 hours per week. Prerequisite: HESC or AMPD students only. (Typically offered: Fall and Spring)

AMPD 2013. Fashion, Buying and Promotion in a Global Market. 3 Hours. Fashion components, marketing theories and practices as they specifically relate to apparel, home goods, and other design driven products in the global market. Focus on principles and techniques on how fashion marketers develop and apply marketing strategies that meet consumer needs at a profit. International buying and promotional aspects of the apparel industry are emphasized. Lecture 3 hours per week. Prerequisite: AMPD major and AMPD 1013. (Typically offered: Fall and Spring)

[^3]
## AMPD 2033. Computer Based Methods for Apparel. 3 Hours.

This course is designed to give students basic experience with CAD (computer aided design) apparel industry software in a computer laboratory environment. Prerequisite: AMPD majors only, AMPD 1013, AMPD 1023 and ASTM 2903 or ISYS 1123 or equivalent. (Typically offered: Fall and Spring)

## AMPD 2053. Introduction to Textile Science. 3 Hours.

Textile fibers and fabrics, their structure, properties, manufacture, wearing qualities and methods of laundering, finishing, and dyeing. Artistic and economic selection of materials for clothing and household furnishings. Lecture 3 hours per week. Prerequisite: HESC, AMPD or FCSE students only. (Typically offered: Fall and Spring)

## AMPD 2063. Quality Assessment of Apparel. 3 Hours.

Study of apparel from the perspective of structure, aesthetics, cost and expected performance of the finished product. Lecture 2 hours per week, lab 2 hours per week. Prerequisite: AMPD 1023 and AMPD 2053. (Typically offered: Fall and Spring)

## AMPD 2073. Flat Pattern Drafting. 3 Hours.

A study of product development and production through flat pattern manipulation and the related vocabulary necessary to communicate professionally within the industry. Pre- or Corequisite: AMPD 2063. (Typically offered: Fall and Spring)

## AMPD 3033. Merchandising Math for the Apparel Industry. 3 Hours.

Exploration of activities associated with the procurement of fashion apparel. A fashion analysis is directed toward apparel demands and the creation of a fashion statement by the use of specific quantitative skills. Course follows fashion item from the designer to the store. Lecture 3 hours per week. Prerequisite: MATH 1203 or three credit hours of STAT and AMPD 2013. (Typically offered: Fall and Spring)
AMPD 3043. Fashion Brand Management. 3 Hours.
This course focuses on the fundamental elements of brand, the concept of brand equity, brand relationships with consumers, and the implications of technologies on the branding process in the fashion industry. The course topics include branding basics, the concept of brand equity, brand image, brand positioning, brand communications, the role of emotional and sensory experiences in fashion branding, luxury fashion brands, sustainable fashion branding management, and technology driven branding. Prerequisite: AMPD 2013. (Typically offered: Fall and Spring)

## AMPD 3053. Computer Aided Textile Design. 3 Hours.

This course is designed to give students advanced skills in textile design using industry based computer aided design (CAD) software. Prerequisite: AMPD 2033 and AMPD 2053 or instructor consent. (Typically offered: Fall and Spring)

AMPD 3063. Digital Apparel Production. 3 Hours.
Use of industry specific computer aided software to perform pattern making, technical package, marketing, and other cross-functional team communication materials. Pre- or Corequisite: AMPD 2073, AMPD 2033, and AMPD 2063. (Typically offered: Fall and Spring)
AMPD 3071. Apparel Merchandising and Product Development Pre-Internship. 1 Hour.
A study of job descriptions, responsibilities at the management level, structural operations, work procedures, job performance evaluations, job application, the resume, and portfolio development in preparation for AMPD 4083, AMPD Internship. Lecture 1 hour per week. Prerequisite: AMPD majors only. (Typically offered: Spring)

## AMPD 3203. Fashion Styling - UARC. 3 Hours.

This course exposes students to the essential skills necessary for success in the field of fashion styling. Future stylists will learn the criteria to produce striking images for all visual media including entertainment, music, print and advertising. In addition, they will gain an understanding of the interdisciplinary collaborative nature within the creative process while working with directors, photographers and production crew. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy. Prerequisite: AMPD majors only. (Typically offered: Fall)

AMPD 3213. Trend Forecasting - UARC. 3 Hours.
Forecasting is one of the most rapidly growing research areas in fashion as well as in many other industry fields. Anticipating consumer demand is crucial and the ability to trend forecast is a skill required for product development. This course will enable students to develop trend forecasts by analyzing the global environment they live in using varied methodologies. The students will learn how to navigate between existing predictions and translate them for product development. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy. Prerequisite: AMPD majors only. (Typically offered: Fall)

## AMPD 4011. History of Apparel Through Film to 1900. 1 Hour.

This course uses historic costume films to trace the evolution of clothing from ancient Egypt to the Twentieth Century. Emphasis is placed on societal aspects such as politics, religion, economy, technology, education, sports, class structure, and gender roles, and how they affect and change dress. Web-based course. (Typically offered: Fall and Spring)
AMPD 4023. Merchandising Application for the Apparel Industry. 3 Hours.
Application of merchandising theory, principles and practices in a capstone class. An in depth study of innovative apparel business concepts as applied to manufacturers and retailers of apparel including apparel classification, seasonal cycles, stock emphasis, assortment strategies, target customers, and apparel trends. Includes an overview of marketing communication including advertising, personal selling, and sales promotion. Prerequisite: AMPD 3033 and AMPD 3043 and completed 75 credit hours or instructor consent. (Typically offered: Fall and Spring)
AMPD 4053. Historic and Contemporary Apparel. 3 Hours.
This course traces the evolution of clothing from ancient times to the twentieth century with emphasis upon Western civilization and includes the study of contemporary fashion as a social force including the origin, scope, theory, and history of the fashion business, the materials of fashion, the fashion producers, auxiliary fashion enterprises, designers, fashion leaders, and leading market. Cultural and economic factors affecting dress, adornment and customs associated dress will be stressed. The Lecture 3 hours per week. Prerequisite: Completed 75 credit hours or instructor consent. (Typically offered: Fall and Spring)
AMPD 4063. Advanced Apparel Production. 3 Hours.
An advanced study of product development incorporating technology used in the industry for a career in fashion merchandising and/or product development in a computer laboratory environment. Laboratory 6 hours per week. Prerequisite: AMPD 2063 and AMPD 2073. (Typically offered: Fall and Spring)
AMPD 4063H. Honors Advanced Apparel Production. 3 Hours.
An advanced study of product development incorporating technology used in the industry for a career in fashion merchandising and/or product development in a computer laboratory environment. Laboratory 6 hours per week. Prerequisite: AMPD 2033, AMPD 2063 and AMPD 2073 and honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to AMPD 4063.
AMPD 4073. Fashion Show Theory and Production. 3 Hours.
A study of the fashion show including the history, purpose, future of, and elements necessary to produce a successful show. A study of fashion show production through experiential project-based learning and committee membership planning and implementing a fashion show. (Typically offered: Spring)
AMPD 4083. Apparel Merchandising and Product Development Internship. 3 Hours.
A practical experience in a retail store or in a work situation related to the apparel industry to gain insight into the field of apparel merchandising and operations. Prerequisite: Junior standing and 2.50 cum GPA and AMPD 2013, AMPD 2033, AMPD 2063, AMPD 2073, AMPD 3033, AMPD 3043, AMPD 3071, COMM 1313 and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

AMPD 4093. Apparel Merchandise Planning and Inventory Control. 3 Hours. Describes today's challenges for both apparel manufacturers and retailers in meeting the consumer's demands for the right products at the right prices - and at the right times. Follows the evolution of the merchandising function with emphasis on production efficiency, highlighting the philosophies of industry executives and the effective integration of the merchandising, store design, marketing, the apparel supply chain and manufacturing functions along the way. Prerequisite: (ECON 2143 or (ECON 2013 and ECON 2023) or (AGEC 1103 and AGEC 2103)) and AMPD 3033 and senior standing or instructor consent. (Typically offered: Fall and Spring)

AMPD 4103. Evolution of Fashion and Society Through Television Media. 3 Hours.
This course uses television programming from its early beginnings in the 1930s through to the twenty-first century to trace major events, societal changes, and the associated evolution of fashion. The course examines television both as an innovator and diffuser of fashion trends. (Typically offered: Fall and Spring)

AMPD 4111. History of Apparel Through Film from 1900 to Present. 1 Hour. This course uses historic costume films to trace the evolution of clothing from 1900 to Present. Emphasis is placed on societal aspects such as politics, religion, economy, technology, education, sports, class structure, and gender roles, and how they affect and change dress. Web based course. (Typically offered: Fall and Spring)

## AMPD 4213. Fashion Illustration - UARC. 3 Hours.

The purpose of this course is to develop the fundamentals skills necessary in fashion illustration. Students will be highly encouraged to use various mediums, and also utilize these skills to develop a individual style of drawing for their own design collections. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course\# FASHDRW-317. Prerequisite: AMPD majors only. (Typically offered: Fall)
AMPD 4223. Design Concepts for Fashion Merchandising - UARC. 3 Hours. This course examines the elements of research and design in fashion design, fabrications and merchandising. The student develops creative skills as well as an awareness of the various roles played by workers in the fashion industry. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course \# FASHDES-316. Prerequisite: AMPD majors only. (Typically offered: Fall)
AMPD 4233. Fashion Design - UARC. 3 Hours.
This course focuses on the key components of the fashion design process including research, trend forecasting, materials investigation and presentation of valuable, market-specific collections. Designers consider current market trends and design concepts as influences on merchandising. Extensive opportunities for the development and communication of a personal design vision in illustrated presentations helps students build portfolio-ready collections. Industry directed projects also provide opportunities to develop brand-conscious yet creative concepts and designs. CAD skills are utilized in a variety of presentational techniques. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course \# FASHDES-316. Prerequisite: AMPD majors only. (Typically offered: Fall)

## AMPD 4243. Pattern Development II - UARC. 3 Hours.

Students learn to drape basic bodice and skirt variations on standard industrial dress forms. Original garments are designed, draped and sewn. Accurate pattern-making, sewing and attention to design fundamentals are stressed throughout the course. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course\# FASD-311. Prerequisite: AMPD majors only. (Typically offered: Fall)

AMPD 4901. AMPD International Pre-Study Tour. 1 Hour.
A study of specific regional and international fashion markets for apparel studies in preparation for AMPD 4912 AMPD International Study Tour. The course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. AMPD 4901 is content specific to each AMPD 4912 international study tour and must be repeated for each study tour destination. A grade of "C" or better is required to participate in AMPD 4912. Prerequisite: 2.0 minimum GPA. AMPD majors with minimum 30 hours, or consent. (Typically offered: Spring and Summer) May be repeated for up to 4 hours of degree credit.
AMPD 4901H. Honors AMPD International Pre-Study Tour. 1 Hour.
A study of specific regional and international fashion markets for apparel studies in preparation for AMPD 4912 AMPD Study Tour. The course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. AMPD 4901 is content specific to each AMPD 4912 study tour and must be repeated for each study tour destination. A grade of " $C$ " or better is required to participate in AMPD 4912. Prerequisite: 2.0 minimum GPA. AMPD majors with minimum 30 hours, or consent. (Typically offered: Spring and Summer) May be repeated for up to 4 hours of degree credit.
This course is equivalent to AMPD 4901.

## AMPD 4912. AMPD International Study Tour. 2 Hours.

An on-site study of international fashion markets for apparel merchandising and product development. Course further examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets as outlined in AMPD 4901. Course includes study trip; length based upon destination. Additional fees required. Course offered each May Intersession. Prerequisite: AMPD 4901 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Corequisite: AMPD 4901 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

## AMPD 4912H. Honors AMPD International Study Tour. 2 Hours.

An on-site study of international fashion markets for apparel merchandising and product development. Course further examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets as outlined in AMPD 4901. Course includes study trip; length based upon destination. Additional fees required. Course offered each May Intersession. Prerequisite: AMPD 4901 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Corequisite: AMPD 4901 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Summer) May be repeated for up to 8 hours of degree credit.
This course is equivalent to AMPD 4912.

## AMPD 4921. AMPD New York City Pre-Study Tour. 1 Hour.

A pre-study of the New York fashion market for apparel students. Course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. Course is a pre-requisite for AMPD 4952 a 6 day field study in New York City, NY, May Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, and students must be a AMPD majors with a minimum of 30 hours, or consent. (Typically offered: Spring)
AMPD 4921H. Honors AMPD New York City Pre-Study Tour. 1 Hour. A pre-study of the New York fashion market for apparel students. Course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. Course is a pre-requisite for AMPD 4952 a 6 day field study in New York City, NY, May Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, students must be a AMPD majors with a minimum of 30 hours, and honors standing or consent. (Typically offered: Spring) This course is equivalent to AMPD 4921.

## AMPD 4931. AMPD Virtual Las Vegas Pre-Study Tour. 1 Hour.

Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. This course is a pre-requisite for AMPD 4962. This course is only offered to AMPD majors. Prerequisite: Students must have a 2.0 minimum GPA and must be an AMPD major with a minimum 30 hours completed, or consent. (Typically offered: Spring)

AMPD 4931H. Honors AMPD Virtual Las Vegas Pre-Study Tour. 1 Hour.
Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. This course is a pre-requisite for AMPD 4962. This course is only offered to AMPD majors. Prerequisite: Students must have a 2.0 minimum GPA, must be an AMPD major with a minimum 30 hours completed, and must have honors standing or consent. (Typically offered: Spring)
This course is equivalent to AMPD 4931.
AMPD 4941. AMPD Las Vegas Pre-Study Tour. 1 Hour.
A pre-study of the Las Vegas MAGIC trade show for apparel merchandising and product development. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods to mass markets. Course is a pre-requisite for AMPD 4952 or AMPD 4952H a 6-day field study in Las Vegas, Nevada, August Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, and students must be an AMPD major with a minimum of 30 hours, or consent. (Typically offered: Spring)

## AMPD 4941H. Honors AMPD Las Vegas Pre-Study Tour. 1 Hour.

A pre-study of the Las Vegas MAGIC trade show for apparel merchandising and product development. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods to mass markets. Course is a pre-requisite for AMPD 4952 or AMPD 4952H a 6-day field study in Las Vegas, Nevada, August Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, students must be an AMPD major with a minimum of 30 hours, and have honors standing or consent. (Typically offered: Spring) This course is equivalent to AMPD 4941.

## AMPD 4952. AMPD New York City Study Tour. 2 Hours.

The course examines the application of business practices in the design, production, distribution and retailing of goods including sourcing, and manufacturing to mass markets. Students are expected to take an active role in the learning process for the duration of the study abroad experience, including critical thinking, problem identification and self-initiated inquiry. 2 credit hours Summer May Intersession enrollment includes study tour and related assignments to be completed on site. Corequisite: AMPD 4921 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. Prerequisite: AMPD 4921 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. (Typically offered: Spring)

AMPD 4952H. Honors AMPD New York City Study Tour. 2 Hours.
The course examines the application of business practices in the design, production, distribution and retailing of goods including sourcing, and manufacturing to mass markets. Students are expected to take an active role in the learning process for the duration of the study abroad experience, including critical thinking, problem identification and self-initiated inquiry. 2 credit hours Summer May Intersession enrollment includes study tour and related assignments to be completed on site. Corequisite: AMPD 4921 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 minimum GPA, AMPD major with minimum 30 hours, honors standing and instructor consent. Prerequisite: AMPD 4921 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, honors standing and instructor consent. (Typically offered: Spring)
This course is equivalent to AMPD 4952.

## AMPD 4962. AMPD Virtual Las Vegas Study Tour. 2 Hours.

Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. Corequisite: AMPD 4931 (with a C or better, if corequisite, must have $C$ or better at time of virtual tour), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. Prerequisite: AMPD 4931 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. (Typically offered: Spring)

## AMPD 4962H. Honors AMPD Virtual Las Vegas Study Tour. 2 Hours.

Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials.Corequisite: AMPD 4931 (with a C or better, if corequisite, must have C or better at time of virtual tour), 2.0 minimum GPA, AMPD major with minimum 30 hours, instructor consent and honors standing. Prerequisite: AMPD 4931 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, instructor consent and honors standing. (Typically offered: Spring)

## AMPD 4972. AMPD Las Vegas Study Tour. 2 Hours.

A 6 day field study of the Las Vegas MAGIC trade show for apparel studies. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods from to mass markets. Course is a 6-day field study in Las Vegas, Nevada, August Intercession. Corequisite: AMPD 4941 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Prerequisite: AMPD 4941 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Spring)

## AMPD 4972H. Honors AMPD Las Vegas Study Tour. 2 Hours.

A 6 day field study of the Las Vegas MAGIC trade show for apparel studies. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods from to mass markets. Course is a 6-day field study in Las Vegas, Nevada, August Intercession. Corequisite: AMPD 4941 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, honors standing and instructor consent. Prerequisite: AMPD 4941 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, honors standing and instructor consent. (Typically offered: Spring)
This course is equivalent to AMPD 4972.

## Birth through Kindergarten (BRKD)

Donna L. Graham

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The major in Birth through Kindergarten prepares educators to teach infants, toddlers, preschoolers and kindergarteners including those children with disabilities. The program offers students a chance to work in settings that serve young children, including public schools, earlyintervention programs, child care and education centers, and residential placement centers. Successful completion of this degree, as specified in the requirements for a major in Birth through Kindergarten, leads to Arkansas' Integrated Birth through Kindergarten/Special Education teacher license.

Passing scores on the Praxis Core (Reading, Writing, and Math) or equivalent ACT, SAT or GRE scores are a requirement for formal admission into the Birth through Kindergarten major. Passing scores on the relevant Praxis Content exams (Interdisciplinary Early Childhood Education 5023, Education of Young Children 5024 and Principles of Learning and Teaching: Early Childhood 5621) are requirements for teacher licensure. Other specific application procedures and degree requirements are available from Birth through Kindergarten faculty advisers.

## Requirements for a major in Birth through Kindergarten (BRKD)

State minimum core and discipline specific general education requirements: (Course work that meets state minimum core requirements is in bold.)

| University Requirements |  | 1 |
| :---: | :---: | :---: |
| UNIV 1001 | University Perspectives |  |
| Communications |  | 9 |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) |  |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) |  |
| COMM 1313 | Public Speaking (ACTS Equivalency $=$ SPCH 1003) ${ }^{1}$ |  |
| U.S. History or Government ${ }^{2}$ |  | 3 |
| Select 3 hours from U.S. History or Government State Minimum Core |  |  |
| Mathematics ${ }^{2}$ |  | 3 |
| MATH 1203 | College Algebra (ACTS Equivalency $=$ MATH 1103) (or higher level MATH) |  |
| Sciences ${ }^{2}$ |  | 8 |
| Select 8 hours (two lecture/lab combinations) Sciences State Minimum Core |  |  |
| Fine Arts and Humanities ${ }^{2}$ |  | 6 |
| Select 3 hours from Fine Arts State Minimum Core |  |  |
| Select 3 hours Humanities State Minimum Core |  |  |
| Social Sciences |  | 9 |


| PSYC 2003 | General Psychology (ACTS Equivalency = PSYC <br> 1103) |
| :--- | :--- |
| SOCI 2013 | General Sociology (ACTS Equivalency $=$ SOCI <br> 1013) |
| or HDFS 26(Rural Families and Communities |  |
| HDFS 2413 | Family Relations |
| Birth through Kindergarten Requirements |  |
| NUTR 1213 | Fundamentals of Nutrition |
| HDFS 1423 | Observation and Foundations for Teaching Young <br> Children |
| HDFS 2403 | Infant and Toddler Development |
| \& HDFS 2401L and Infant and Toddler Development Laboratory |  |
| HDFS 2433 | Child Development |
| HDFS 2463 | Introduction to Leadership and Administration in <br> the Helping Professions |

HDFS 2473 Child Guidance
\& HDFS 2471L and Child Guidance Laboratory
HDFS 2493 Introduction to Cultural Competence
HDFS 3333 Language and Literacy Pedagogy for Birth through Kindergarten Educators
HDFS 3453 Parenting and Family Dynamics
HDFS 4213 Math and Science for Young Children
\& HDFS 4212L and Math and Science for Young Children Lab
HDFS 4223 Creative and Social Experience for Young Children
\& HDFS 4222L and Creative and Social Experiences for Young Children Lab
HDFS 4233 Developmental Assessment in Early Childhood
HDFS 4313 Building Family and Community Relationships
HDFS 4373 Internship: Infant, Toddler, and Preschool Programs
HDFS 4383 Internship: Kindergarten Programs
CIED 3023 Survey of Exceptionalities
CIED 3113 Emergent Literacy
HIST 3383 Arkansas and the Southwest
SCWK 3633 Child Welfare: 21st Century Perspectives
SPED 4413 ABA and Classroom Management for Teachers
SPED 4493 Introduction to Students with High Incidence Disabilities
CIED 499V Special Topics in Curriculum and Instruction Education (Students must complete a CIED 499V (3 hours) in which the topic is in the area of Special Education. This course must be taken during the summer session.)

## General Electives

 9
## Total Hours

## 120

## Other Requirements for the B.S.H.E.S. Degree in Birth through Kindergarten major: ${ }^{3}$

Both candidacy and retention eligibility for the Arkansas Birth through Kindergarten Integrated Licensure Program require that students meet a set of criteria listed in the catalog. These include the submission of a transcript showing a cumulative grade point average of at least 3.0 , with grades of C or better in all BRKD courses. Students should consult their academic adviser as they near completion of the above requirements to discuss the application process for the Integrated Birth through Kindergarten/Special Education teacher license in Arkansas.

Additional requirements for application to teacher licensure with the state of Arkansas Department of Education include demonstrating basic skills in Reading, Writing, and Mathematics (see Birth-Kindergarten Program Handbook), Praxis Content: Interdisciplinary Early Childhood Education 5023 and Principles of Learning and Teaching: Early Childhood 5621.
${ }^{1}$ Please visit the Bumpers College Majors and Minors page (http:// bumperscollege.uark.edu/academics/majors-and-minors/) for a list of communication/intensive courses.
${ }^{2}$ Go to the State Minimum Core Requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/).
3 Child Maltreatment Certification must be completed.

## Birth through Kindergarten B.S.H.E.S. Eight-Semester Degree Program

Students wishing to follow the degree plan should go to the EightSemester Degree Policy ( $p$. 67) for university requirements of the program.

| First Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| UNIV 1001 University Perspectives | 1 |  |  |
| ENGL 1013 Composition I (ACTS <br> Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |  |
| HDFS 1423 Observation and Foundations for Teaching Young Children | 3 |  |  |
| Fine Arts State Minimum Core Elective (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher level MATH (Satisfies General Education Outcome 2.1) | 3 |  |  |
| General Elective | 3 |  |  |
| HDFS 2413 Family Relations (Satisfies General Education Outcomes 3.3, 4.1, and 4.2) |  | 3 |  |
| PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3) |  | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |  |
| Science State Minimum Core Elective (Satisfies General Education Outcome 3.4) |  | 4 |  |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) |  | 3 |  |
| Year Total: | 16 | 16 |  |


| Second Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| HDFS 2403 Infant and Toddler | 4 |  |  |
| Development |  |  |  |
| \& HDFS 2401L Infant and Toddler |  |  |  |
| Development Laboratory |  |  |  |
| HDFS 2463 Introduction to Leadership and Administration in the Helping | 3 |  |  |
| Professions |  |  |  |
| U.S. History or Government State | 3 |  |  |
| Minimum Core Elective |  |  |  |
| Humanities State Minimum Core | 3 |  |  |
| Elective (Satisfies General Education |  |  |  |
| NUTR 1213 Fundamentals of Nutrition | 3 |  |  |
| HDFS 2433 Child Development |  | 3 |  |
| HDFS 3453 Parenting and Family |  | 3 |  |
| Dynamics |  |  |  |
| Science State Minimum Core Elective |  | 4 |  |
| (Satisfies General Education Outcome |  |  |  |
| 3.4) |  |  |  |
| CIED 3023 Survey of Exceptionalities |  | 3 |  |
| Satisfies General Education Outcome |  |  |  |
| 3.3: |  |  |  |
| SOCI 2013 General Sociology (ACTS |  | 3 |  |
| Equivalency = SOCI 1013) or HDFS 2603 Rural Families and Communities |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Year Total: | 16 | 16 |  |
| Third Year |  |  | Units |
|  | Fall | Spring | Summer |
| HDFS 2473 Child Guidance | 4 |  |  |
| \& HDFS 2471L Child Guidance |  |  |  |
| Laboratory |  |  |  |
| HDFS 2493 Introduction to Cultural | 3 |  |  |
| Competence |  |  |  |
| HDFS 3333 Language and Literacy | 3 |  |  |
| Pedagogy for Birth through |  |  |  |
| Kindergarten Educators |  |  |  |
| HDFS 4233 Developmental | 3 |  |  |
| Assessment in Early Childhood |  |  |  |
| CIED 3113 Emergent Literacy |  | 3 |  |
| HIST 3383 Arkansas and the Southwest |  | 3 |  |
| General Elective |  | 3 |  |
| HDFS 4223 Creative and Social |  | 5 |  |
| Experience for Young Children |  |  |  |
| \& HDFS 4222L Creative and Social |  |  |  |
| Experiences for Young Children Lab |  |  |  |
| CIED 499V Special Topics in |  |  | 3 |
| Curriculum and Instruction Education |  |  |  |
| Year Total: | 13 | 14 | 3 |



## Minor in Child Services

This minor is open to all University of Arkansas students and requires 15 hours.

| Required Courses |  |  |
| :--- | :--- | ---: |
| HDFS 1403 | Life Span Development | 3 |
| HDFS 2433 | Child Development | 3 |
| HDFS 3463 | The Hospitalized Child: Child Life Programming | 3 |
| HDFS 4313 | Building Family and Community Relationships | 3 |
| HDFS 4353 | Play as Development in Childhood | 3 |
| Total Hours |  | $\mathbf{1 5}$ |

## Food, Nutrition and Health (FNAH)

Donna L. Graham
Director
118 Home Economics Building
479-575-4305

Kelly A. Way
Assistant Director
16G Home Economics Building
479-575-4985

Program Description: The School of Human Environmental Sciences offers a major program in Food, Nutrition and Health leading to a B.S.H.E.S. degree. The school also offers a minor in Human Nutrition. Interest and aptitude for the biological and physical sciences as well as public health fields that support nutrition science are central to successfully completing the major program.

## Requirements for B.S.H.E.S. in Food, Nutrition and Health

State minimum core (p.81) and discipline specific general education (p. 72) requirements:
(Course work that meets state minimum core requirements is in bold.)

| University Requirements | 1 |  |
| :--- | :--- | :--- |
| UNIV 1001 | University Perspectives |  |
| Communications | 12 |  |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) <br> (unless exempt) |  |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) <br> (unless exempt) |  |
| COMM 1313 | Public Speaking (ACTS Equivalency = SPCH <br> 1003) |  |

Select one of the following:
ACOM 3143 Communicating Agriculture to the Public or ENGL 30ミTechnical and Professional Writing (ACTS Equivalency = ENGL 2023)
U.S. History and Government

Choose from U.S. History and Government Core Courses
Mathematics
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher level math)

STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

Sciences
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency \& CHEM 1071L= CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)
AND 4 hours from University science core list
Or
CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture)
\& CHEM 1123 and University Chemistry I Laboratory (ACTS
\& CHEM 1121LEquivalency = CHEM 1414 Lab) and University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
Fine Arts and Humanities
Choose from Fine Arts and Humanities Core Courses (Select 3 hours from each)
Social Sciences


| ENGL 3053 Technical and Professional Writing (ACTS Equivalency = ENGL 2023) or ACOM 3143 Communicating Agriculture to the Public |  | 3 |
| :---: | :---: | :---: |
| Electives |  | 9 |
| Year Total: | 16 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| NUTR 3213 Nutrition Education and Counseling | 3 |  |
| NUTR 3103 Culinary Nutrition <br> \& NUTR 3101L Culinary Nutrition Lab | 4 |  |
| Social Science State Minimum Core Elective (Satisfies General Education Outcome 3.3) | 3 |  |
| US History or Government State Minimum Core Elective | 3 |  |
| Electives ${ }^{3}$ | 3 |  |
| NUTR 4243 Community Nutrition |  | 3 |
| Electives ${ }^{3}$ |  | 9 |
| NUTR 4303 Cultural Perspectives on Foods or NUTR 4403/4401L Recipe Modification |  | 3 |
| Year Total: | 16 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| Electives ${ }^{3}$ | 12 |  |
| NUTR 4223 Life Cycle Nutrition | 3 |  |
| Electives ${ }^{3}$ |  | 4 |
| NUTR 4303 Cultural Perspectives on Foods or NUTR 4403 Recipe Modification |  | 3 |
| NUTR 4001 Nutrition Seminar (Satisfies General Education Outcome 6.1) |  | 1 |
| NUTR 4103 Research Methods in Nutrition \& NUTR 4101L |  | 4 |
| Year Total: | 15 | 12 |

## Total Units in Sequence:

${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
2 The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
${ }^{3}$ Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

## Minor in Human Nutrition (NUTR-M)

Required Courses

| NUTR 1213 | Fundamentals of Nutrition |
| :--- | :--- |
| NUTR 3203 | Human Nutrition |
| NUTR 2113 | Principles of Foods |
| \& NUTR 2111L and Principles of Foods Laboratory |  |
| NUTR 4213 | Advanced Nutrition I |


| Select 6 hours from the following: | 6 |  |
| :--- | :--- | :--- |
| NUTR 2203 | Sports Nutrition |  |
| NUTR 4223 | Life Cycle Nutrition |  |
| NUTR 4243 | Community Nutrition |  |

Total Hours

## Courses

NUTR 1201. Introduction to the Dietetic Profession. 1 Hour.
Introduction to profession of dietetics and nutrition including history, scope and future of professionals with emphasis on academic preparation, internships, acquisition of professional credentials, career laddering and career opportunities. Guest speakers will supplement lectures and assignments. Prerequisite: HNAD or FNAH majors only or by department consent. (Typically offered: Fall and Spring)

NUTR 1213. Fundamentals of Nutrition. 3 Hours.
The functions of food, body processes, optimum diets in relation to health and physical fitness. (Typically offered: Fall and Spring)

NUTR 1213H. Honors Fundamentals of Nutrition. 3 Hours.
The functions of food, body processes, optimum diets in relation to health and physical fitness. (Typically offered: Fall and Spring) This course is equivalent to NUTR 1213.

NUTR 2111L. Principles of Foods Laboratory. 1 Hour.
Laboratory exercises and practice applicable of Principles of Foods. Lab 3 hours. Corequisite: NUTR 2113. (Typically offered: Fall and Spring)

## NUTR 2113. Principles of Foods. 3 Hours.

Physical and chemical characteristics of foods, organized by food science and nutrition, protein foods, phytochemicals, complex and refined carbohydrates, and fats. Emphasis on food preparation and storage methods and effect on foods. Investigation and practice of food preparation basics, cooking and baking techniques, knife skills, food safety, and sensory evaluation of food. Corequisite: NUTR 2111L. Prerequisite: NUTR 1213, a C or higher in HOSP 2611, (CHEM 1073, or CHEM 1103, or CHEM 1203), one of the following programs, minors or concentrations: (HNADBS, FNAHBS, HESCBS, NUTR-M, or CATEBS-FCSE) and students must also have a current ServSafe Manager's Certification. (Typically offered: Fall and Spring)

## NUTR 2203. Sports Nutrition. 3 Hours.

The integration of concepts from nutrition and exercise physiology into an applied multidisciplinary study of how food, beverages and dietary supplements influence physical performance. Prerequisite: NUTR 1213. (Typically offered: Summer)

NUTR 3101L. Culinary Nutrition Lab. 1 Hour.
Students will explore ways to apply evidence based nutrition research to culinary application. It addresses the fundamental culinary skills and knowledge required to prepare meals that impact the nutritional and sensory appeal of food. Corequisite: NUTR 3103. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Fall)

## NUTR 3101M. Honors Culinary Nutrition Lab. 1 Hour.

Students will explore ways to apply evidence based nutrition research to culinary application. It addresses the fundamental culinary skills and knowledge required to prepare meals that impact the nutritional and sensory appeal of food. Corequisite: NUTR 3103H. Prerequisite: NUTR 2113, NUTR 2111L and honors standing. (Typically offered: Fall)
This course is equivalent to NUTR 3101L.

## NUTR 3103. Culinary Nutrition. 3 Hours.

This course is grounded in a food first approach to health and wellness with an emphasis on disease prevention. Students will study the physical and chemical characteristics of foods that increase nutritional value and will include exploration of the culinary nutrition modification process and application of these concepts to planning nutritionally balanced meals. Corequisite: NUTR 3101L. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Fall)

## NUTR 3103H. Honors Culinary Nutrition. 3 Hours.

This course is grounded in a food first approach to health and wellness with an emphasis on disease prevention. Students will study the physical and chemical characteristics of foods that increase nutritional value and will include exploration of the culinary nutrition modification process and application of these concepts to planning nutritionally balanced meals. Corequisite: NUTR 3101M. Prerequisite: NUTR 2113, NUTR 2111L and honors standing. (Typically offered: Fall) This course is equivalent to NUTR 3103.

## NUTR 3203. Human Nutrition. 3 Hours.

Fundamental human nutrition; nutritive value of foods and general functions of nutrients based on concepts derived from inorganic and organic chemistry. Examples relating nutrition to disease used as illustrations to deepen understanding of normal nutrition. Lecture 3 hours per week. Corequisite: CHEM 2613 and CHEM 2611L or CHEM 3603 and CHEM 3601L. Prerequisite: NUTR 1213. (Typically offered: Fall)

## NUTR 3213. Nutrition Education and Counseling. 3 Hours.

Introduction to development of communication skills related to educational theory and techniques, development of educational materials, interpersonal communication skills, group dynamics, public speaking, and interviewing techniques. Includes discussion of counseling theory and methods, and how education and counseling are intertwined for nutrition professionals. Includes development of skills in nutrition counseling. Prerequisite: NUTR 1213, HNAD or FNAH majors only, and Junior or Senior standing. (Typically offered: Fall)

## NUTR 3213H. Honors Nutrition Education and Counseling. 3 Hours.

Introduction to development of communication skills related to educational theory and techniques, development of educational materials, interpersonal communication skills, group dynamics, public speaking, and interviewing techniques. Includes discussion of counseling theory and methods, and how education and counseling are intertwined for nutrition professionals. Includes development of skills in nutrition counseling. Prerequisite: NUTR 1213, HNAD or FNAH majors only, Junior or Senior standing, and honors standing. (Typically offered: Fall)
This course is equivalent to NUTR 3213.

## NUTR 3303. Nutrition Assessment. 3 Hours.

Principles of nutritional assessment and methodology including anthropometric, biochemical, clinical, and dietary evaluation. Emphasis placed on Nutrition Focused Physical Assessment, the interpretation of indices for all age groups in health and disease for both individuals and groups, and the application of nutrition assessment data in the nutrition care process. Prerequisite: NUTR 3203, junior standing and HNAD/FNAH majors only. (Typically offered: Spring)

NUTR 3603. Quantity Foods. 3 Hours.
This course focuses on menu planning for a variety of food service organizations, with consideration of age, special needs, diet type, cultural and ethical parameters. Students will design flavorful and appealing menus that meet current nutrition recommendations, guidelines and budgetary constraints. They will learn recipe standardization, quantity production, and overall quality control. Prerequisite: NUTR 1213, HOSP 2603, junior standing and Human Nutrition and Dietetics Bachelor of Science (HNADBS) or Food, Nutrition and Health Bachelor of Science (FNAHBS) majors only. (Typically offered: Spring)
NUTR 4001. Nutrition Seminar. 1 Hour.
Presentation and discussion of selected nutrition topics of current interest.
Prerequisite: Senior standing and HNAD or FNAH majors only. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## NUTR 4103. Research Methods in Nutrition. 3 Hours.

This course will cover applications of experimental methods for investigations in nutrition research and cookery. Pre- or Corequisite: STAT 2303. Prerequisite: Major in either Human Nutrition and Dietetics (HNAD), or Food, Nutrition and Health (FNAH) and senior standing only. (Typically offered: Spring)

## NUTR 4213. Advanced Nutrition I. 3 Hours.

This course will cover nutritional, physiological, and biochemical aspects of carbohydrate, protein, and lipid metabolism in humans and their implications in health and disease. Prerequisite: CHEM 3813 and NUTR 3203. (Typically offered: Fall)

## NUTR 4223. Life Cycle Nutrition. 3 Hours.

Study of normal nutrition emphasizing quantitative needs for nutrients as functions of biologic processes that vary during stages of the life cycle. Attention is given to preconception, pregnancy, childhood and older adults. Prerequisite: (HNAD majors and NUTR 3203) or (FNAH majors and junior standing). (Typically offered: Fall)

## NUTR 4233. Advanced Nutrition II. 3 Hours.

This course will cover nutritional, physiological, and biochemical aspects of vitamins and minerals in humans, their functions and roles in metabolism, and their implications in health and disease. Prerequisite: NUTR 4213. (Typically offered: Spring)

NUTR 4243. Community Nutrition. 3 Hours.
Identifying, assessing, and developing solutions for nutritional problems encountered at the local, state, federal, and international levels. Lecture 3 hours per week.
Prerequisite: NUTR 1213, junior standing, and Food, Nutrition and Health Bachelor of Science in Human Environmental Science (FNAHBS) or Human Nutrition and Dietetic Bachelor of Science in Human Environmental Science (HNADBS) majors or Nutrition minors only. (Typically offered: Spring)
NUTR 4263. Medical Nutrition Therapy I. 3 Hours.
Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Pre- or corequisite: NUTR 3213 and NUTR 4213. Prerequisite:
BIOL 2213, BIOL 2211L, CHEM 3813 and NUTR 3303. (Typically offered: Fall)
NUTR 4273. Medical Nutrition Therapy II. 3 Hours.
Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Lecture 3 hours per week. Prerequisite: NUTR 4263. (Typically offered: Spring)

## NUTR 4303. Cultural Perspectives on Foods. 3 Hours.

Cultural competence is growing in importance as our population becomes more culturally diverse. This course covers cuisine and culture of various regions for the purpose of promoting respect and understanding for cultural diversity. Students will learn the history of foods, ingredients, flavor profiles, religious based food practices, etiquette, and customs. Corequisite: Junior or senior standing, and (Human Nutrition and Dietetics majors (HNADBS) or Food, Nutrition and Health majors (FNAHBS) or Hospitality Management (HOSPBS) majors). (Typically offered: Fall)

NUTR 4401L. Recipe Modification Lab. 1 Hour.
Students will use existing research to identify foods with preventative and functional properties and apply that information to develop recipes for improved nutritional quality and disease management. They will gather data to modify and refine the products and create an educational tool to promote their products. Corequisite: NUTR 4403. (Typically offered: Spring)

## NUTR 4403. Recipe Modification. 3 Hours.

Students will use existing research to identify foods with preventative and functional properties and apply that information to develop recipes for improved nutritional quality and disease management. They will gather data to modify and refine the product and create an educational tool to promote their product. Corequisite: NUTR 4401L. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Spring)

## Hospitality Management (HOSP)

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Director
118 Home Economics Building
479-575-4305
Kelly A. Way
Assistant Director
16G Home Economics Building
479-575-4985
Program Description: The School of Human Environmental Sciences offers a major in Hospitality Management, leading to a B.S.H.E.S. The program also offers two minors: Event Management and Hospitality Management.

## Requirements for B.S.H.E.S. in Hospitality Management

All Hospitality Management students must earn a grade of " C " or higher in all hospitality core required courses. State minimum core and discipline specific general education requirements:
(Course work that meets state minimum core (p. 81) requirements is in bold.)

| University Requirements |
| :--- |
| UNIV 1001 University Perspectives <br> Communications  |
| ENGL 1013 | | Composition I (ACTS Equivalency = ENGL |
| :--- |
| 1013) (unless exempt) |

U.S. History and Government

Choose from U.S. History and Government Core courses Mathematics and Computers

MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)

MATH 2053 Finite Mathematics

## Sciences

Choose from state minimum core science courses
Fine Arts and Humanities

| Choose from Fine Arts, Humanities core courses -- Choose 3 hours from each |  |  |
| :---: | :---: | :---: |
| Social Sciences |  | 9 |
| ECON 2143 | Basic Economics: Theory and Practice |  |
| HDFS 2413 or HDFS 14 | Family Relations a3ife Span Development |  |
| PSYC 2003 <br> or SOCI 201 | General Psychology (ACTS Equivalency = PSYC 1103) <br> 1General Sociology (ACTS Equivalency $=$ SOCI 1013) |  |
| HOSP Requireme | ents | 40 |
| NUTR 1213 | Fundamentals of Nutrition |  |
| HOSP 3301 | Hospitality Pre-Internship |  |
| HOSP 1603 | Introduction to Hospitality Management |  |
| HOSP 2603 | Purchasing and Cost Control |  |
| HOSP 2611 | Foodservice Sanitation |  |
| HOSP 2633 | Lodging Property Management |  |
| HOSP 2653 | Introduction to Hospitality Finance |  |
| HOSP 4602L | Culture and Cuisines of the World Practicum |  |
| HOSP 4603 | Culture and Cuisines of the World |  |
| HOSP 3623 | Introduction to Meetings and Events Management |  |
| HOSP 3653 | Hospitality, Dietetic Management and Human Resources |  |
| HOSP 4643 | Special Events Management |  |
| HOSP 4653 | Global Travel and Tourism Management |  |
| HOSP 4663 | Hospitality Management Capstone |  |
| HOSP 4693 | Hospitality Management Internship ${ }^{1}$ |  |

Additional Requirements ..... 12
ASTM 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers
or ISYS 112:Business Application Knowledge - Computer Competency
BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003)
HDFS 2493 Introduction to Cultural Competence
HOSP 4673 Destination Marketing \& Operations

## Additional Professional and Business courses

12From the departmental codes ACCT, AGEC, ECON, FDSC, FINN, ISYS, MGMT, MKTG, SCMT, OMGT, WCOB and HOSP. Recommended that students take HOSP related courses: HOSP 3673 and HOSP 4613.
General Electives ${ }^{2}$ ..... 11
Total Hours ..... 120

1 Additional 3 hours credit may be earned if second experience is distinctly different from first internship.
2 Recommend world language 6 hours.

## Hospitality Management B.S.H.E.S., Eight-Semester Degree Program

Students wishing to follow the degree plan in Hospitality Management should go to the Eight-Semester Degree Policy (p. 67) for university requirements of the program.


2 The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or Intermediate-level world language (usually 2003-level).
3 Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

## Minor in Event Management

The Event Management minor provides students with expertise for careers in event planning and management. Curriculum covers skills and knowledge including negotiation, event planning, programming, promotion, budget and legal issues. This minor degree is open to all students at the University of Arkansas.

Requirements for a minor in Event Management: The Event Management minor requires 15 hours of coursework. To earn a minor in Event Management, a student must earn a "C" or better in the five courses required for the minor.

| HOSP 1603 | Introduction to Hospitality Management | 3 |
| :--- | :--- | ---: |
| HOSP 2603 | Purchasing and Cost Control | 3 |
| HOSP 3623 | Introduction to Meetings and Events Management | 3 |
| HOSP 3673 | Event Safety and Venue Management | 3 |
| HOSP 4613 | Festival Management and Analysis | 3 |
| Total Hours |  | $\mathbf{1 5}$ |

## Minor in Hospitality Management

This minor degree is designed to give students the expertise needed to pursue careers in the growing hospitality management industry. This minor degree is open to all students at the University of Arkansas.

Requirements for the minor in Hospitality Management: Students must complete 15 credit hours to earn this minor, including courses on tourism, finance, event management, and human resources. To earn a minor Hospitality Management, a student must earn a "C" or better in the five courses required for the minor.

| HOSP 1603 | Introduction to Hospitality Management | 3 |
| :--- | :--- | ---: |
| HOSP 2633 | Lodging Property Management | 3 |
| HOSP 3653 | Hospitality, Dietetic Management and Human <br>  <br>  <br> Resources | 3 |
| HOSP 4653 | Global Travel and Tourism Management | 3 |
| Total Hours 4673 | Destination Marketing \& Operations | 3 |

## Human Development and Family Sciences (HDFS)

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Kelly Way

Assistant Director
16G Home Economics Building
479-575-4985
Students majoring in human development and family sciences prepare for one of the fastest growing employment opportunities in the country. The human services area includes jobs that serve people from conception through the last stages of life. Students develop skills for working with individuals and families in governmental, private, and nonprofit organizations. In addition to the major in Human Development and Family Sciences, the program offers a major in Birth through Kindergarten (p. 218).

## Requirements for B.S.H.E.S. in Human Development and Family Life Sciences with Child Life Concentration Requirements for a Major in Human Development and Family Sciences (HDFS)

State minimum core and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)

## University Requirements 1

UNIV 1001 University Perspectives
Communications
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)
U.S. History or Government ${ }^{1}$

Choose 3 hours from U.S. History or Government from State Minimum Core
Mathematics ${ }^{1}$

| MATH 1203 | College Algebra (ACTS Equivalency $=$ MATH <br> 1103) (or higher level MATH) |
| :--- | :--- |
| STAT 2303 | Principles of Statistics (ACTS Equivalency $=$ MATH <br> 2103) |

Sciences ${ }^{1}$
8
Choose 8 hours of Sciences from State Minimum Core
Fine Arts and Humanities ${ }^{1}$
6
PHIL 2003 Introduction to Philosophy (ACTS Equivalency = PHIL 1103)
or PHIL 2103Introduction to Ethics (ACTS Equivalency = PHIL 1003)

Choose 3 hours Fine Arts from State Minimum Core
Social Sciences
9
HDFS 1403 Life Span Development
HDFS 2413 Family Relations
SOCI 2013 General Sociology (ACTS Equivalency = SOCI 1013)
or ANTH 10́cIntroduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013)
HDFS Requirements
HDFS 2433 Child Development ${ }^{2}$
HDFS 2483 Family Financial Management
HDFS 2493 Introduction to Cultural Competence

| HDFS 3423 | Adolescent Development |
| :--- | :--- | :--- |
| HDFS 3443 | Families in Crisis |

## Additional Requirements for Child Life Concentration ( 15 hours):



COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)
Science State Minimum Core Elective (Satisfies

General Education Outcome 3.4)
PHIL 2103 Introduction to Ethics (ACTS
Equivalency $=$ PHIL 1003)
or PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103)
Year Total:
16

| Second Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| PSYC 2003 General Psychology (ACTS | 3 |  |
| Equivalency = PSYC 1103) (Satisfies General |  |  |
| Education Outcome 3.3) | 3 |  |
| STAT 2303 Principles of Statistics (ACTS | 3 |  |
| Equivalency = MATH 2103) | 3 |  |
| HDFS 2433 Child Development | 4 |  |

HDFS 2483 Family Financial Management
HDFS 2493 Introduction to Cultural Competence 3
HDFS 3423 Adolescent Development
SCWK 3163 On Death and Dying
SOCI 2013 General Sociology (ACTS Equivalency
= SOCI 1013) (Satisfies General Education
Outcome 3.3)
or ANTH 1023 Introduction to Cultural
Anthropology (ACTS Equivalency $=$ ANTH 2013)
Year Total:
16

Third Year \begin{tabular}{r}

Fall | Units |
| ---: |
| Spring |

\end{tabular}

Cognition
HDFS 3453 Parenting and Family Dynamics 3
HDFS 3463 The Hospitalized Child: Child Life 3
Programming
General Elective 3
General Elective 3
Year Total: 15 15

Fourth Year | Units |
| ---: |
| Spring |

HDFS 3481 Pre-Internship in Human Development 1 and Family Sciences
HDFS 3443 Families in Crisis 3
HDFS 4473 Multicultural Families3
HDFS 2473 Child Guidance ..... 3
HDFS 2471L Child Guidance Laboratory ..... 1
General Elective ..... 3
General Elective ..... 2
HDFS 4413 Infancy: Brain, Learning and Social ..... 33


| PSYC $2003 \quad$General <br> $1103)$ | 3 |
| :--- | :--- |


| Total Hours | 15 |
| :--- | :---: |


| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| UNIV 1001 University Perspectives | 1 |  |
| HDFS 1403 Life Span Development (Satisfies <br> General Education Outcomes 3.3, 4.1, 4.2, and <br> 5.1) | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) <br> MATH 1203 College Algebra (ACTS Equivalency <br> $=$ MATH 1103) (or higher level MATH (Satisfies <br> General Education Outcome 2.1)) <br> or MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency = MATH 1113) | 3 |  |
| Fine Arts State Minimum Core (Satisfies General <br> Education Outcome 3.1) |  |  |
| General Elective |  |  |

HDFS 2413 Family Relations (Satisfies General Education Outcomes 3.3, 4.1 and 4.2)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcomes 1.1)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)
Science State Minimum Core (Satisfies General Education Outcome 3.4)
PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003)
or PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103)
Year Total: 16

| Second Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| PSYC 2003 General Psychology (ACTS | 3 |  |

Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3)
STAT 2303 Principles of Statistics (ACTS
3
Equivalency = MATH 2103)
HDFS 2433 Child Development
3
History State Minimum Core (Satisfies General 3

Education Outcome 4.2) ${ }^{2}$
Science State Minimum Core (Satisfies General 4
Education Outcome 3.4)
HDFS 2483 Family Financial Management
HDFS 2493 Introduction to Cultural Competence
HDFS 3423 Adolescent Development
SCWK 3163 On Death and Dying

SOCI 2013 General Sociology (ACTS Equivalency
= SOCI 1013) (Satisfies General Education
Outcome 3.3)
or ANTH 1023 Introduction to Cultural
Anthropology (ACTS Equivalency $=$ ANTH 2013)
Year Total:

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| HDFS 3443 Families in Crisis | 3 |  |
| HDFS 4473 Multicultural Families | 3 |  |
| CNED 3053 The Helping Relationship | 3 |  |
| General Elective | 3 |  |
| General Elective | 3 |  |

HDFS 4413 Infancy: Brain, Learning and Social 3
Cognition
HDFS 3453 Parenting and Family Dynamics 3
HDFS 2603 Rural Families and Communities 3
General Elective 3
General Elective 3
Year Total: 15

Family Studies
HDFS 4773 Research in HDFS: Statistical 3
Approaches
General Elective 3
General Elective 3
Year Total: 15

Total Units in Sequence: 120
${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT or THTR 1013H.
${ }^{2}$ The U.S. History or Government Elective courses which satisfy General Education Outcome 4.2 include: HIST 2003, HIST 2013, or PLSC 2003.
${ }^{3}$ Students must complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with the academic adviser when making course selections.

## Minor in Human Development and Family Sciences

| Required Courses (9 hours) |  |  |
| :---: | :---: | :---: |
| HDFS 1403 | Life Span Development | 3 |
| HDFS 2413 | Family Relations | 3 |
| HDFS 2433 | Child Development | 3 |
| Choose 6 hours of upper division coursework from the following: |  |  |
| HDFS 3423 | Adolescent Development |  |
| HDFS 3443 | Families in Crisis |  |
| HDFS 3453 | Parenting and Family Dynamics |  |
| HDFS 3463 | The Hospitalized Child: Child Life Programming |  |
| HDFS 4313 | Building Family and Community Relationships |  |
| HDFS 4353 | Play as Development in Childhood |  |
| HDFS 4363 | Play as Development in Adulthood |  |
| HDFS 4413 | Infancy: Brain, Learning and Social Cognition |  |
| HDFS 4423 | Adult Development |  |
| HDFS 4473 | Multicultural Families |  |
| HDFS 4493 | Public Policy Advocacy for Children and Families |  |
| Total Hours |  | 15 |

## Human Development and Family Sciences Courses

HDFS 1403. Life Span Development. 3 Hours.
A broad overview of the physical, psychological, and social development of the individual from conception until death. Emphasis is on individual development in a family context. Lecture 3 hours per week. (Typically offered: Fall and Spring)

## HDFS 1403H. Honors Life Span Development. 3 Hours.

A broad overview of the physical, psychological, and social development of the individual from conception until death. Emphasis is on individual development in a family context. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to HDFS 1403.
HDFS 1423. Observation and Foundations for Teaching Young Children. 3 Hours.
Designed to acquaint students with the historical importance of early childhood education, the recognized standards for practice, the variety of program models, and career opportunities available. Emphasis will be placed on theories, evidencebased practice, ethics, diversity, and professional preparation for this knowledgebased, skill-driven field. Students will also obtain knowledge of state and federal laws pertaining to the care and education of young children. (Typically offered: Fall)

## HDFS 2401L. Infant and Toddler Development Laboratory. 1 Hour.

Introduction to infant and toddler development. Focus on observation and applied experience with children 0-3 documenting cognitive, emotional, language, physical, and social development, and demonstrating developmentally appropriate practice. Corequisite: HDFS 2403. Prerequisite: HDFS majors or BRKD majors or HDFS minors or CATEBS-FCSE majors or instructor consent. (Typically offered: Fall and Spring)

HDFS 2403. Infant and Toddler Development. 3 Hours.
Infant and toddler development from conception through toddlerhood with emphasis on physical, emotional, social, language, and cognitive domains. Theoretical and research-based information will be applied to developmentally appropriate practice. Historical and future perspectives will be explored as will the expanding opportunities for professional work with infants and toddlers. Observations in care centers will be assigned. Corequisite: HDFS 2401L. Prerequisite: HDFS majors or BRKD majors or HDFS minors or CATEBS-FCSE majors or by instructor consent. (Typically offered: Fall and Spring)

HDFS 2413. Family Relations. 3 Hours.
Courtship, marriage, and parenthood in the United States, with attention to cultural and psychological factors which affect relations among family members. Lecture 3 hours per week. (Typically offered: Fall and Spring)

## HDFS 2413H. Honors Family Relations. 3 Hours.

Courtship, marriage, and parenthood in the United States, with attention to cultural and psychological factors which affect relations among family members. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to HDFS 2413.

## HDFS 2433. Child Development. 3 Hours.

Theory, research, and application in physical, cognitive, social, and emotional development of the child, studied in the biocultural context. Begins with prenatal development and continues through adolescence, with special emphasis on early and middle childhood. (Typically offered: Fall and Spring)

## HDFS 2433H. Honors Child Development. 3 Hours.

Theory, research, and application in physical, cognitive, social, and emotional development of the child, studied in the biocultural context. Begins with prenatal development and continues through adolescence, with special emphasis on early and middle childhood. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to HDFS 2433.
HDFS 2463. Introduction to Leadership and Administration in the Helping Professions. 3 Hours.
The class is a basic introduction of leadership and emotional intelligence as it relates to becoming a successful administrator in the helping professions-based careers. Emphasis will be on administrators' roles as leaders in organizations. Topics include facilities, budget, staff development, and policy manuals. Prerequisite: Human Environmental Science (HESCBS) majors, Human Development \& Family Science (HDFSBS) majors, Birth through Kindergarten (BRKDBS) majors, Human Development \& Family Science (HDFS-M) minors, or departmental consent. (Typically offered: Fall)

HDFS 2471L. Child Guidance Laboratory. 1 Hour.
Introduction to the guidance system. Focus on discipline techniques that are positive and age/stage appropriate for children ages 3-8. Corequisite: HDFS 2473. Prerequisite: HDFS 2433. (Typically offered: Fall and Spring)

## HDFS 2473. Child Guidance. 3 Hours.

Introduction to the guidance system. Focus on discipline techniques that are positive and age/stage appropriate for children ages 3-8. Lecture 3 hours per week plus 1 hour demonstration. Corequisite: HDFS 2471L. Prerequisite: HDFS 2433. (Typically offered: Fall and Spring)

HDFS 2483. Family Financial Management. 3 Hours.
Economic considerations of the family in a rapidly changing society. Family finance and consumer problems are emphasized. Prerequisite: HDFS 2413 or HDFS 2413H. (Typically offered: Fall and Spring)
HDFS 2493. Introduction to Cultural Competence. 3 Hours.
Basic introduction to definitions of intercultural competence, diversity, cultural values and beliefs, attitudes and verbal and non-verbal behavior, are examined to identify basic differences among individuals from diverse cultural backgrounds and across populations. (Typically offered: Fall, Spring and Summer)

## HDFS 2603. Rural Families and Communities. 3 Hours.

Meaning of sociology and sociological concepts with reference to rural society, families and communities; interdependence of rural and urban population in ecological areas; institutions; social change and adjustment. (Typically offered: Fall and Spring)

## HDFS 2603H. Honors Rural Families and Communities. 3 Hours.

Meaning of sociology and sociological concepts with reference to rural society, families and communities; interdependence of rural and urban population in ecological areas; institutions; social change and adjustment. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to HDFS 2603.
HDFS 3333. Language and Literacy Pedagogy for Birth through Kindergarten Educators. 3 Hours.

This course combines theory on emergent language and literacy development with research-based pedagogy for birth through kindergarten classrooms. Topics include: language and literacy development and exceptionalities, English Language Learners, environmental influences, best practice pedagogy, identifying language and literacy delays, and intervention strategies. This course includes a service learning component. Prerequisite: HDFS 2433, HDFS 2403 and HDFS 2401L. (Typically offered: Fall)

HDFS 3423. Adolescent Development. 3 Hours.
Physiological and psychological development of the older child and youth, from pre-adolescence to adulthood. Theories of adolescent development. Cross cultural studies. Peer group influences. Some attention to pathological behaviors. Prerequisite: HDFS 1403 or PSYC 2003. (Typically offered: Fall and Spring)

## HDFS 3423H. Honors Adolescent Development. 3 Hours.

Physiological and psychological development of the older child and youth, from pre-adolescence to adulthood. Theories of adolescent development. Crosscultural studies. Peer group influences. Some attention to pathological behaviors. Prerequisite: HDFS 1403 or PSYC 2003 and honors standing. (Typically offered: Spring Odd Years)
This course is equivalent to HDFS 3423.

## HDFS 3443. Families in Crisis. 3 Hours.

An interdisciplinary perspective on internal and external crises faced by contemporary families, including substance abuse, natural disasters and other crisis events. Students will explore the family processes during such experiences and develop strategies for stress management, coping, and recovery. Lecture 3 hours per week. Prerequisite: HDFS 2413 or HDFS 2413H. (Typically offered: Fall)

## HDFS 3443H. Honors Families in Crisis. 3 Hours.

An interdisciplinary perspective on internal and external crises faced by contemporary families, including substance abuse, natural disasters and other crisis events. Students will explore the family processes during such experiences and develop strategies for stress management, coping, and recovery. Lecture 3 hours per week. Prerequisite: Honors standing and HDFS 2413 or HDFS 2413H. (Typically offered: Fall)
This course is equivalent to HDFS 3443.
HDFS 3453. Parenting and Family Dynamics. 3 Hours.
Focus is on influence of parenting and family dynamics on individual development, especially factors in family life which contribute to normal psychological development. Topics include family values, the psychology of sex and pregnancy, the transition to parenthood, childbearing techniques, family influences on cognitive and social development, and changes in family relationships during the life cycle. Prerequisite: (HDFS majors, HDFS minors, BRKD majors, CATEBS-FCSE majors, or IDST majors with HDFS track) and (HDFS 1403 or PSYC 2003). (Typically offered: Fall and Spring)

HDFS 3463. The Hospitalized Child: Child Life Programming. 3 Hours. Introduces child life programming in health care settings. Topics include: roles and expectations of a Child Life Specialist, importance of play, coping techniques, family advocacy, administration and professionalism. Lecture 3 hours per week. Prerequisite: HDFS 2433 and (HDFS or BRKD majors, HDFS or CDSV minors, or IDST major with a CDSV or HDFS track). (Typically offered: Fall and Spring)

HDFS 3481. Pre-Internship in Human Development and Family Sciences. 1 Hour.
This course prepares students for their internship experience (HDFS 4483) in Human Development and Family Sciences. Topics covered include professional and ethical behavior when working with people, families and communities. The course will also cover professional and career development topics. By the end of the course, students are expected to have secured an internship position suitable for HDFS 4483. Students should enroll in this course no earlier than the semester before they anticipate enrolling in HDFS 4483. Prerequisite: Junior standing and HDFS majors only. (Typically offered: Fall and Spring)

HDFS 4212L. Math and Science for Young Children Lab. 2 Hours.
Students will plan curriculum for young children ages 0-5 in the areas of math and science. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4213. (Typically offered: Fall)

## HDFS 4213. Math and Science for Young Children. 3 Hours.

Students will plan curriculum for young children ages 0-5 in the areas of math and science. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will design lesson plans for young children and will learn about effective implementation of curriculum. Corequisite: HDFS 4212L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Fall)

HDFS 4222L. Creative and Social Experiences for Young Children Lab. 2 Hours.
Students will plan curriculum for young children ages 0-5 in the areas of the arts and social emotional learning. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4223. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Spring)

HDFS 4223. Creative and Social Experience for Young Children. 3 Hours. Students will plan curriculum for young children ages 0-5 in the areas of the arts and social emotional learning. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will design lesson plans for young children and will learn about effective implementation of curriculum. Corequisite: HDFS 4222L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Spring)

HDFS 4233. Developmental Assessment in Early Childhood. 3 Hours. Students will learn about developmentally appropriate observation, assessment, and documentation techniques and how to use these in high quality early childhood classrooms. Advantages and limitations of various assessment techniques, considerations used when interpreting findings, and the and making referrals will be discussed. Additional emphasis will be on anti-biased and culturally competent assessment, giving students methods to recognize and support learning and development in all young children. (Typically offered: Fall)

HDFS 4313. Building Family and Community Relationships. 3 Hours.
This course will help students interested in early childhood to value the role parents play in schools and the role schools play in a community. Various models of parent involvement will be explored. Students will plan a school-community collaborative which values diverse cultures. Prerequisite: (HDFS 2413 or HDFS 2603) and (HDFS or BRKD majors, HDFS or CDSV minors, or IDST major with CDSV track or IDST major with HDFS track). (Typically offered: Spring)
HDFS 4332. Curriculum and Assessment: Birth to Three Years. 2 Hours. The course will introduce students to curriculum planning and assessment in programs serving children from birth to three years of age. Emphasis will be on responsive relationships and curriculum focused on routines and activities. Corequisite: HDFS 4332L. Prerequisite: HDFS 2403 and HDFS 2401L. (Typically offered: Spring)

HDFS 4332L. Curriculum and Assessment: Birth to Three Years Laboratory. 2 Hours.
Laboratory. Corequisite: HDFS 4332. Prerequisite: HDFS 2403 and HDFS 2401L. (Typically offered: Spring)
HDFS 4342. Curriculum and Assessment: Three Years through Kindergarten. 2 Hours.
Students will plan curriculum and assessment for children three years of age through kindergarten. Emphasis will be on professionalism, philosophy and a code of ethics. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4342L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Fall)
HDFS 4342L. Curriculum and Assessment: Three Years through Kindergarten. 2 Hours.
Laboratory. Corequisite: HDFS 4342. (Typically offered: Fall)
HDFS 4353. Play as Development in Childhood. 3 Hours.
This course will examine the contribution of play to cognitive, social, and emotional development of children. It will provide an overview of play theories and practices in indoor and outdoor settings, with an emphasis on nature-based learning and diversity and inclusion. Prerequisite: HDFS 2433, junior standing and HDFS, BRKD, or IDSTBA major or HDFS or CDSV minor. (Typically offered: Fall and Spring)

## HDFS 4363. Play as Development in Adulthood. 3 Hours.

This course will examine play as it pertains to development throughout life with a particular focus on adulthood. The modes of adult play will be examined, along with the benefits of play across adulthood. Emphasis will be on play, not as opposition to work, but as a part of a full life. Prerequisite: HDFS 1403. (Typically offered: Fall and Spring)

HDFS 4373. Internship: Infant, Toddler, and Preschool Programs. 3 Hours.
This course provides the student with interactive and observational experiences with young children in community-based early childhood programs. Some on-campus meetings will be required. Prerequisite: HDFS 4213, HDFS 4212L, HDFS 4223, and HDFS 4222L. (Typically offered: Spring)

## HDFS 4383. Internship: Kindergarten Programs. 3 Hours.

This course provides the student with interactive and observational experiences with young children in community-based kindergarten programs. Some on-campus meetings will be required. Prerequisite: HDFS 4213, HDFS 4212L, HDFS 4223, and HDFS 4222L. (Typically offered: Spring)
HDFS 4413. Infancy: Brain, Learning and Social Cognition. 3 Hours.
Investigation into how brain mechanisms interact with experience to provide the basis for learning and social cognition. Topics include face perception, motor cognition, imitation, joint attention and shared experience, empathy and altruism, theory of mind, social and moral cognition, language, memory, number, geometry and navigation, object representation, and executive function. Prerequisite: HDFS 2433 or PSYC 3093. (Typically offered: Spring)

HDFS 4413H. Honors Infancy: Brain, Learning and Social Cognition. 3 Hours. Investigation into how brain mechanisms interact with experience to provide the basis for learning and social cognition. Topics include face perception, motor cognition, imitation, joint attention and shared experience, empathy and altruism, theory of mind, social and moral cognition, language, memory, number, geometry and navigation, object representation, and executive function. Prerequisite: Honors standing and HDFS 2433 or PSYC 3093. (Typically offered: Spring) This course is equivalent to HDFS 4413.

## HDFS 4423. Adult Development. 3 Hours.

This course examines the social, psychological, and biological development that occurs throughout adulthood, with an emphasis on middle and later adulthood. Taking a life course perspective, this course particularly focuses on life course trajectories and variabilities across cultural contexts. Prerequisite: HDFS 1403 and Junior Standing. (Typically offered: Fall and Spring)

## HDFS 4443. Gerontology. 3 Hours.

Physiological and psychological development of the aging individual, extended family relations, service networks for the elderly, and retirement activities. Some attention to housing and care needs of persons in advanced years. Lecture 3 hours per week. Seminar. Prerequisite: HDFS 1403 (or HDFS 2413 or PSYC 2003 or SCWK 2133) and junior standing. (Typically offered: Spring)

## HDFS 4473. Multicultural Families. 3 Hours.

The course provides students with opportunities to gain awareness of their own cultures and families, reflect on families from a diverse array of cultures, and develop critical thinking skills needed to effectively engage with people and families from cultures different than their own. Prerequisite: HDFS 2493 and Junior or Senior Standing. (Typically offered: Fall)

HDFS 4483. Internship in Human Development and Family Studies. 3 Hours. The internship experience provides practical experience for students in settings that are designed to serve the needs of individuals and/or families across the life span. Students must work a minimum of 150 hours in the setting. May be repeated for up to 6 hours of degree credit. Prerequisite: Grade of B or higher in HDFS 3481, junior standing, and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HDFS 4493. Public Policy Advocacy for Children and Families. 3 Hours. Public policy advocacy as related to children and family issues. Strategies for advocacy will be emphasized. Lecture three hours per week. Prerequisite: Junior standing and (HDFS majors or IDST majors with HDFS track). (Typically offered: Fall)

## HDFS 4493H. Honors Public Policy Advocacy for Children and Families. 3

 Hours.Public policy advocacy as related to children and family issues. Strategies for advocacy will be emphasized. Lecture three hours per week. Prerequisite: Honors and Junior standing, and (HDFS major or IDST major with HDFS track). (Typically offered: Fall)
This course is equivalent to HDFS 4493.

## HDFS 4603. Environmental Sociology. 3 Hours.

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. (Typically offered: Irregular)
This course is cross-listed with SOCI 4603, SUST 4603.

## HDFS 4763. Research in HDFS: Methodological Approaches. 3 Hours.

This class introduces the methodology of HDFS and other social sciences in the social world. It covers research design, sampling, measurement, and other topics that underlie the social science conclusions presented to you in other classes.
The class begins with an introduction to the goals of social science research, then focuses on the understanding of the 3 validities with which social scientists, and consumer of social science, must concern themselves: Internal, Measurement, and External. Each of these three validities is used as the focus of a course section. The class concludes with a fourth section that integrates these topics and other social science methods. It is recommended that HDFS students complete Rural Families and Communities (HDFS 2603) prior to enrolling in this course. Prerequisite: HDFS major and Junior Standing. (Typically offered: Fall)

## HDFS 4773. Research in HDFS: Statistical Approaches. 3 Hours.

This course is an introduction to analytical approaches to research in human development and family sciences and will examine the principles and practices underlying the development of knowledge in the field. Emphases in this course will be on conducting and evaluating data analyses relevant to human environmental sciences majors. Students will become critical consumers of data and develop basic skills to analyze and interpret their own data. Prerequisite: HDFS 4763, STAT 2303, and HDFS major. (Typically offered: Spring)

## Human Environmental Sciences Courses

HESC 255V. Special Topics. 1-6 Hour.
Topics not covered in other courses or a more intensive study of specific topics in the specializations of human environmental sciences. (Typically offered: Irregular) May be repeated for degree credit.

HESC 400V. Special Problems. 1-6 Hour.
Special problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HESC 455V. Special Topics. 1-6 Hour.
Topics not covered in other courses, a focused study of specific topics in the students' areas of concentration. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HESC 455VH. Honors Special Topics. 1-6 Hour.
Topics not covered in other courses, a focused study of specific topics in the students' areas of concentration. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HESC 455 V .

# Human Nutrition and Dietetics (HNAD) 

Donna L. Graham
Director
118 Home Economics Building
479-575-4305
Kelly A. Way
Assistant Director
16G Home Economics Building
479-575-4985
Program Description: Nutrition and Dietetics is for the student who intends to become a Registered Dietitian (RD), a credential that is required for one to counsel individuals related to any type of diet. Courses required are those necessary as prerequisites to application for a post-baccalaureate dietetic internship. Upon successful completion of the post-baccalaureate dietetic internship, the graduate is eligible to take the Registration Exam, the board examination for the RD credential. Graduates of this program who choose not to apply for a post-
baccalaureate dietetic internship are eligible upon completion of the Bachelor's degree to take the board examination to become a Dietetic Technician, Registered (DTR).

## Requirements for B.S.H.E.S. in Human Nutrition and Dietetics

State minimum core (p.81) and discipline specific general education (p. 72) requirements include the following. All students in Human Nutrition and Dietetics must earn a grade of " C " or higher in all NUTR and science required core courses
(Course work that meets state minimum core requirements is in bold.)

| University Requirements |  |
| :---: | :---: |
| UNIV 1001 | University Perspectives |
| Communications |  |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) (unless exempt) |
| ENGL 1023 | Composition II (ACTS Equivalency $=$ ENGL 1023) (unless exempt) |
| COMM 1313 | Public Speaking (ACTS Equivalency $=$ SPCH 1003) |

Select one of the following:
ENGL 3053 Technical and Professional Writing (ACTS Equivalency = ENGL 2023)
or ACOM 31 Communicating Agriculture to the Public
U.S. History and Government

Choose from U.S. History and Government Core Course
Mathematics
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher)

STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

| Sciences | 27-31 |
| :---: | :---: |
| BIOL 1543 <br> \& BIOL 1541L | Principles of Biology (ACTS Equivalency $=\mathrm{BIOL}$ 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) |
| Select 4-8 hours: |  |
| CHEM 1073 <br> \& CHEM 1071 | Fundamentals of Chemistry (ACTS Equivalency = LCHEM 1214 Lecture) <br> and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) |
| Or |  |
| CHEM 1103 <br> \& CHEM 1101L <br> \& CHEM 1123 <br> \& CHEM 1121L | University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) <br> and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) <br> and University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |

Take Additional Science Courses Below:
BIOL 2013 General Microbiology (ACTS Equivalency = BIOL
\& BIOL 2011L 2004 Lecture)
and General Microbiology Laboratory (ACTS
Equivalency = BIOL 2004 Lab)

| $\begin{aligned} & \text { BIOL } 2213 \\ & \text { \& BIOL } 2211 \mathrm{~L} \end{aligned}$ | Human Physiology (ACTS Equivalency $=$ BIOL 2414 Lecture) <br> and Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab) |
| :---: | :---: |
| BIOL 2443 <br> \& BIOL 2441L | Human Anatomy (ACTS Equivalency = BIOL 2404 Lecture) <br> and Human Anatomy Laboratory (ACTS <br> Equivalency = BIOL 2404 Lab) |
| CHEM 2613 <br> \& CHEM 2611 | Organic Physiological Chemistry (ACTS <br> LEquivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory <br> (ACTS Equivalency = CHEM 1224 Lab) |
| CHEM 3813 | Elements of Biochemistry |
| Fine Arts and Hu | umanities 6 |
| Fine Arts and | Humanities Core Courses (select 3 hours from each) |
| Social Sciences | 9 |
| PSYC 2003 | $\begin{aligned} & \text { General Psychology (ACTS Equivalency = PSYC } \\ & \text { 1103) } \end{aligned}$ |
| HDFS 2493 | Introduction to Cultural Competence |
| Select 3 hours | from Social Science state minimum core list |
| NUTR Requirem | ents: 46 |
| NUTR 1201 | Introduction to the Dietetic Profession |
| NUTR 1213 | Fundamentals of Nutrition |
| NUTR 2113 <br> \& NUTR 2111L | Principles of Foods Land Principles of Foods Laboratory |
| HOSP 2603 | Purchasing and Cost Control |
| HOSP 2611 | Foodservice Sanitation |
| NUTR 3203 | Human Nutrition |
| NUTR 3213 | Nutrition Education and Counseling |
| NUTR 3303 | Nutrition Assessment |
| NUTR 3603 | Quantity Foods |
| HOSP 3653 | Hospitality, Dietetic Management and Human Resources |
| NUTR 4001 | Nutrition Seminar |
| NUTR 4103 | Research Methods in Nutrition |
| NUTR 4213 | Advanced Nutrition I |
| NUTR 4223 | Life Cycle Nutrition |
| NUTR 4243 | Community Nutrition |
| NUTR 4263 | Medical Nutrition Therapy I |
| NUTR 4273 | Medical Nutrition Therapy II |
| General Electives |  |
| Total Hours | 120 |

## Human Nutrition and Dietetics B.S.H.E.S. Eight-Semester Degree Program

Students wishing to follow the degree plan in Human Nutrition and Dietetics should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

BIOL 2213 Human Physiology (ACTS Equivalency = BIOL 2414 Lecture)
\& BIOL 2211L Human Physiology Laboratory
(ACTS Equivalency $=$ BIOL 2414 Lab)
or BIOL 2443 and BIOL 2441L
Satisfies General Education Outcomes 3.3, 4.1, and 4.2:
HDFS 2493 Introduction to Cultural Competence
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3) ${ }^{3}$
Year Total: 14

| Third Year | Fall |
| :--- | ---: |
|  | 3 |
| NUTR 3213 Nutrition Education and Counseling | 3 |
| CHEM 3813 Elements of Biochemistry | 4 |
| BIOL 1543 Principles of Biology (ACTS |  |
| Equivalency = BIOL 1014 Lecture) |  |
| \& BIOL 1541L Principles of Biology Laboratory |  |
| (ACTS Equivalency = BIOL 1014 Lab) |  |
| HOSP 3653 Hospitality, Dietetic Management and | 3 |
| Human Resources |  |
| NUTR 3203 Human Nutrition | 3 |
| BIOL 2013 General Microbiology (ACTS |  |
| Equivalency = BIOL 2004 Lecture) |  |
| \& BIOL 2011L General Microbiology Laboratory |  |
| (ACTS Equivalency = BIOL 2004 Lab) |  |
| STAT 2303 Principles of Statistics (ACTS |  |
| Equivalency = MATH 2103) |  |
| NUTR 3303 Nutrition Assessment |  |
| NUTR 3603 Quantity Foods |  |
| General Electives |  |
| Year Total: |  |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| NUTR 4213 Advanced Nutrition I | 3 |  |
| NUTR 4223 Life Cycle Nutrition | 3 |  |
| NUTR 4263 Medical Nutrition Therapy I | 3 |  |
| General Electives | 3 |  |
| US History or Government State Minimum Core | 3 |  |

Elective
NUTR 4273 Medical Nutrition Therapy II
NUTR 4243 Community Nutrition
NUTR 4103 Research Methods in Nutrition
NUTR 4001 Nutrition Seminar (Satisfies General Education Outcome 6.1)
ENGL 3053 Technical and Professional Writing (ACTS Equivalency = ENGL 2023)
or ACOM 3143 Communicating Agriculture to the Public
Year Total:
15 Education Outcome 3.3 include:
AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Minor in Human Nutrition (NUTR-M)

1 The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
${ }^{2}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013 H.
${ }^{3}$ The Social Sciences Elective courses which satisfy the General

Required Courses
NUTR 1213 Fundamentals of Nutrition
NUTR 3203 Human Nutrition
NUTR 2113 Principles of Foods
\& NUTR 2111L and Principles of Foods Laboratory
NUTR 4213 Advanced Nutrition I
Select 6 hours from the following: 6
NUTR 2203 Sports Nutrition
NUTR 4223 Life Cycle Nutrition
NUTR 4243 Community Nutrition
Total Hours

## Courses

NUTR 1201. Introduction to the Dietetic Profession. 1 Hour.
Introduction to profession of dietetics and nutrition including history, scope and future of professionals with emphasis on academic preparation, internships, acquisition of professional credentials, career laddering and career opportunities. Guest speakers will supplement lectures and assignments. Prerequisite: HNAD or FNAH majors only or by department consent. (Typically offered: Fall and Spring)

NUTR 1213. Fundamentals of Nutrition. 3 Hours.
The functions of food, body processes, optimum diets in relation to health and physical fitness. (Typically offered: Fall and Spring)

NUTR 1213H. Honors Fundamentals of Nutrition. 3 Hours.
The functions of food, body processes, optimum diets in relation to health and physical fitness. (Typically offered: Fall and Spring)
This course is equivalent to NUTR 1213.
NUTR 2111L. Principles of Foods Laboratory. 1 Hour.
Laboratory exercises and practice applicable of Principles of Foods. Lab 3 hours.
Corequisite: NUTR 2113. (Typically offered: Fall and Spring)

## NUTR 2113. Principles of Foods. 3 Hours.

Physical and chemical characteristics of foods, organized by food science and nutrition, protein foods, phytochemicals, complex and refined carbohydrates, and fats. Emphasis on food preparation and storage methods and effect on foods. Investigation and practice of food preparation basics, cooking and baking techniques, knife skills, food safety, and sensory evaluation of food. Corequisite: NUTR 2111L. Prerequisite: NUTR 1213, a C or higher in HOSP 2611, (CHEM 1073, or CHEM 1103, or CHEM 1203), one of the following programs, minors or concentrations: (HNADBS, FNAHBS, HESCBS, NUTR-M, or CATEBS-FCSE) and students must also have a current ServSafe Manager's Certification. (Typically offered: Fall and Spring)

## NUTR 2203. Sports Nutrition. 3 Hours.

The integration of concepts from nutrition and exercise physiology into an applied multidisciplinary study of how food, beverages and dietary supplements influence physical performance. Prerequisite: NUTR 1213. (Typically offered: Summer)

## NUTR 3101L. Culinary Nutrition Lab. 1 Hour.

Students will explore ways to apply evidence based nutrition research to culinary application. It addresses the fundamental culinary skills and knowledge required to prepare meals that impact the nutritional and sensory appeal of food. Corequisite: NUTR 3103. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Fall)

NUTR 3101M. Honors Culinary Nutrition Lab. 1 Hour.
Students will explore ways to apply evidence based nutrition research to culinary application. It addresses the fundamental culinary skills and knowledge required to prepare meals that impact the nutritional and sensory appeal of food. Corequisite: NUTR 3103H. Prerequisite: NUTR 2113, NUTR 2111L and honors standing. (Typically offered: Fall)
This course is equivalent to NUTR 3101L.

## NUTR 3103. Culinary Nutrition. 3 Hours.

This course is grounded in a food first approach to health and wellness with an emphasis on disease prevention. Students will study the physical and chemical characteristics of foods that increase nutritional value and will include exploration of the culinary nutrition modification process and application of these concepts to planning nutritionally balanced meals. Corequisite: NUTR 3101L. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Fall)

## NUTR 3103H. Honors Culinary Nutrition. 3 Hours.

This course is grounded in a food first approach to health and wellness with an emphasis on disease prevention. Students will study the physical and chemical characteristics of foods that increase nutritional value and will include exploration of the culinary nutrition modification process and application of these concepts to planning nutritionally balanced meals. Corequisite: NUTR 3101M. Prerequisite: NUTR 2113, NUTR 2111L and honors standing. (Typically offered: Fall) This course is equivalent to NUTR 3103.

## NUTR 3203. Human Nutrition. 3 Hours.

Fundamental human nutrition; nutritive value of foods and general functions of nutrients based on concepts derived from inorganic and organic chemistry. Examples relating nutrition to disease used as illustrations to deepen understanding of normal nutrition. Lecture 3 hours per week. Corequisite: CHEM 2613 and CHEM 2611L or CHEM 3603 and CHEM 3601L. Prerequisite: NUTR 1213. (Typically offered: Fall)

## NUTR 3213. Nutrition Education and Counseling. 3 Hours.

Introduction to development of communication skills related to educational theory and techniques, development of educational materials, interpersonal communication skills, group dynamics, public speaking, and interviewing techniques. Includes discussion of counseling theory and methods, and how education and counseling are intertwined for nutrition professionals. Includes development of skills in nutrition counseling. Prerequisite: NUTR 1213, HNAD or FNAH majors only, and Junior or Senior standing. (Typically offered: Fall)

NUTR 3213H. Honors Nutrition Education and Counseling. 3 Hours.
Introduction to development of communication skills related to educational theory and techniques, development of educational materials, interpersonal communication skills, group dynamics, public speaking, and interviewing techniques. Includes discussion of counseling theory and methods, and how education and counseling are intertwined for nutrition professionals. Includes development of skills in nutrition counseling. Prerequisite: NUTR 1213, HNAD or FNAH majors only, Junior or Senior standing, and honors standing. (Typically offered: Fall)
This course is equivalent to NUTR 3213.
NUTR 3303. Nutrition Assessment. 3 Hours.
Principles of nutritional assessment and methodology including anthropometric, biochemical, clinical, and dietary evaluation. Emphasis placed on Nutrition Focused Physical Assessment, the interpretation of indices for all age groups in health and disease for both individuals and groups, and the application of nutrition assessment data in the nutrition care process. Prerequisite: NUTR 3203, junior standing and HNAD/FNAH majors only. (Typically offered: Spring)

NUTR 3603. Quantity Foods. 3 Hours.
This course focuses on menu planning for a variety of food service organizations, with consideration of age, special needs, diet type, cultural and ethical parameters. Students will design flavorful and appealing menus that meet current nutrition recommendations, guidelines and budgetary constraints. They will learn recipe standardization, quantity production, and overall quality control. Prerequisite: NUTR 1213, HOSP 2603, junior standing and Human Nutrition and Dietetics Bachelor of Science (HNADBS) or Food, Nutrition and Health Bachelor of Science (FNAHBS) majors only. (Typically offered: Spring)
NUTR 4001. Nutrition Seminar. 1 Hour.
Presentation and discussion of selected nutrition topics of current interest. Prerequisite: Senior standing and HNAD or FNAH majors only. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## NUTR 4103. Research Methods in Nutrition. 3 Hours.

This course will cover applications of experimental methods for investigations in nutrition research and cookery. Pre- or Corequisite: STAT 2303. Prerequisite: Major in either Human Nutrition and Dietetics (HNAD), or Food, Nutrition and Health (FNAH) and senior standing only. (Typically offered: Spring)

## NUTR 4213. Advanced Nutrition I. 3 Hours.

This course will cover nutritional, physiological, and biochemical aspects of carbohydrate, protein, and lipid metabolism in humans and their implications in health and disease. Prerequisite: CHEM 3813 and NUTR 3203. (Typically offered: Fall)

## NUTR 4223. Life Cycle Nutrition. 3 Hours.

Study of normal nutrition emphasizing quantitative needs for nutrients as functions of biologic processes that vary during stages of the life cycle. Attention is given to preconception, pregnancy, childhood and older adults. Prerequisite: (HNAD majors and NUTR 3203) or (FNAH majors and junior standing). (Typically offered: Fall)
NUTR 4233. Advanced Nutrition II. 3 Hours.
This course will cover nutritional, physiological, and biochemical aspects of vitamins and minerals in humans, their functions and roles in metabolism, and their implications in health and disease. Prerequisite: NUTR 4213. (Typically offered: Spring)

## NUTR 4243. Community Nutrition. 3 Hours.

Identifying, assessing, and developing solutions for nutritional problems encountered at the local, state, federal, and international levels. Lecture 3 hours per week. Prerequisite: NUTR 1213, junior standing, and Food, Nutrition and Health Bachelor of Science in Human Environmental Science (FNAHBS) or Human Nutrition and Dietetic Bachelor of Science in Human Environmental Science (HNADBS) majors or Nutrition minors only. (Typically offered: Spring)

## NUTR 4263. Medical Nutrition Therapy I. 3 Hours.

Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Pre- or corequisite: NUTR 3213 and NUTR 4213. Prerequisite:
BIOL 2213, BIOL 2211L, CHEM 3813 and NUTR 3303. (Typically offered: Fall)
NUTR 4273. Medical Nutrition Therapy II. 3 Hours.
Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Lecture 3 hours per week. Prerequisite: NUTR 4263. (Typically offered: Spring)

NUTR 4303. Cultural Perspectives on Foods. 3 Hours.
Cultural competence is growing in importance as our population becomes more culturally diverse. This course covers cuisine and culture of various regions for the purpose of promoting respect and understanding for cultural diversity. Students will learn the history of foods, ingredients, flavor profiles, religious based food practices, etiquette, and customs. Corequisite: Junior or senior standing, and (Human Nutrition and Dietetics majors (HNADBS) or Food, Nutrition and Health majors (FNAHBS) or Hospitality Management (HOSPBS) majors). (Typically offered: Fall)

## NUTR 4401L. Recipe Modification Lab. 1 Hour.

Students will use existing research to identify foods with preventative and functional properties and apply that information to develop recipes for improved nutritional quality and disease management. They will gather data to modify and refine the products and create an educational tool to promote their products. Corequisite: NUTR 4403. (Typically offered: Spring)

NUTR 4403. Recipe Modification. 3 Hours.
Students will use existing research to identify foods with preventative and functional properties and apply that information to develop recipes for improved nutritional quality and disease management. They will gather data to modify and refine the product and create an educational tool to promote their product. Corequisite: NUTR 4401L. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Spring)

## Fay Jones School of Architecture and Design

## Mission and Objectives

The Fay Jones School of Architecture and Design, founded in 1946 by John G. Williams at the University of Arkansas, houses professional design programs of architecture, interior architecture and design and landscape architecture together with liberal studies programs. All combine studio design education with innovative teaching in history and theory; building and intelligent technologies and urban design and resiliency. A broad range of course offerings equips graduates with the knowledge and critical agility required to meet the challenges of designing for a changing world. Design instruction occurs in studio sequences that provide educational experiences appropriate for students who wish to pursue both traditional and non-traditional forms of professional practice. Fundamental principles and techniques design and design thinking are stressed and all curriculums empower students by developing skill, knowledge, and a deep sense of responsibility to their environment and to the cultures they will serve. The school's curriculum surveys issues and opportunities in built and natural settings, as well as addressing complex social, physical, and cultural and diverse relationships that constitute the human-made environment. In summary, the school prepares its students with critical frameworks for professional skills, and applied learning experiences that equip them to assume leadership roles in the profession and in their communities.

## Degrees Offered

The Fay Jones School of Architecture and Design offers three professionally accredited programs. The five-year Bachelor of Architecture (B.Arch.), the four-year Bachelor of Interior Architecture and Design (B.I.A.D.) and the nine-semester Bachelor of Landscape Architecture (B.L.A.).

The Bachelor of Science in Architectural Studies serve students who are interested in the design disciplines, but not professional practice. The four-year program is well suited for students who seek careers or graduate education in allied design disciplines.

## Minors

Students in architecture, interior architecture and design and landscape architecture may pursue academic minors in approved degree programs of other colleges on campus, providing they meet the specific requirements for that minor, as well as any of the school's minors in History of Architecture and Design, Planting Design, Design with Plants, Sustainable Landscape Design and Management, Planning, and Sustainability. An Interior Design minor is available only to students in the Fay Jones School of Architecture and Design.

## Accreditations

All three professional degree programs in the Fay Jones School are nationally accredited.

The architecture program was founded in 1946 and has been accredited by the National Architectural Accrediting Board (NAAB) since 1958. The landscape architecture program was established in 1975 and has been accredited by the Landscape Architecture Accreditation Board (LAAB) of the American Society of Landscape Architects (ASLA) since 1983. The Interior Architecture and Design program was established in 1974 and has been accredited by the Council for Interior Design Accreditation (CIDA) since 1993. The school holds memberships in the Association of Collegiate Schools of Architecture (ACSA) and the Council of Educators in Landscape Architecture (CELA) and the Interior Design Educators Council (IDEC), organizations that comprise North American schools of architecture, landscape architecture and interior design.

## Facilities and Resources

The three academic units of the Fay Jones School - architecture, interior architecture and design and landscape architecture - together with its administrative offices are located in Vol Walker Hall and its state of the art addition, the Steven L. Anderson Design Center. Harmoniously combining traditional and contemporary architecture, our award-winning facilities not only offer students in the Fay Jones School extraordinary opportunities for collaboration among its three design disciplines, but also model best practices for new and historic preservation construction, all adhering to high standards of sustainable design. At the same time, we value making connections with the entire state and our nation, pursuing learning experiences for our students that foster civic engagement and responsibility. So too, the school is aware of the increasing global nature of design practice and offers field trips, guest lectures, learning opportunities in applied design and research, and, especially, a variety of approved study abroad programs.

## Design Studio

The design studio sequence is the core of each discipline within the school. Studio projects are complemented by topical lectures that inform the design process. These learning experiences develop and nurture the
intellectual and creative skills of students and allow them to approach problem solving in a disciplined, logical, and analytical manner. The amount and complexity of material covered, the fast pace of assignments, and the presentation of work for critical discussion among faculty and other students combine to produce a challenging learning atmosphere.

## Library Resources

The collections in the Fine Arts Library include traditional print resources on the visual arts (painting, drawing, sculpture, ceramics, printmaking, and photography), architecture, and landscape architecture. Types of materials include books, exhibition catalogs, reference books, and periodicals. Electronic resources supporting the art (https://libraries.uark.edu/eresources/listing.asp? Category=Arts+and+Humanities\&Listing=Art), architecture (https:// libraries.uark.edu/eresources/listing.asp?Category=Arts+and +Humanities\&Listing=Architecture), landscape architecture (https:// libraries.uark.edu/eresources/listing.asp?Category=Arts+and +Humanities\&Listing=Landscape+Architecture), and interior design (https://libraries.uark.edu/eresources/listing.asp? Category=Arts+and+Humanities\&Listing=Interior+Design) programs include Art Full Text (https://libraries.uark.edu/eresources/ help.asp?TitleCode=ARTABS), Avery Index to Architectural Periodicals (https://libraries.uark.edu/eresources/help.asp? TitleCode=EbscoAvery), Bibliography of the History of Art (https:// libraries.uark.edu/eresources/helpweblinks.asp?LinkID=6065), and Oxford Art Online (https://libraries.uark.edu/eresources/help.asp? TitleCode=OxfordArt) among others. The Fine Arts Library also maintains course reserves for faculty wishing to place materials on reserve for their classes. Visual resources such as slides and other materials are available in the Art Department slide library. Archives and manuscripts related to art or architecture can be found in Special Collections (https:// libraries.uark.edu/specialcollections/) in Mullins Library. The Libraries participate in ARTstor (https://libraries.uark.edu/eresources/help.asp? TitleCode=ARTSTOR).

The C. Murray Smart Multimedia Center, located in Vol Walker Hall, contains a vast online digital image database relating to architecture, architectural history, interior design, landscape architecture and urban design.

## Digital Drawing and Fabrication Resources

Fabrication Laboratories Website (https://fayfabricationlabs.uark.edu)
Located in the lower levels of Vol Walker Hall and an annex location on Government Avenue in Fayetteville, the Fabrication Laboratories (http://fayfabricationlabs.uark.edu/) are an open environment for all students and faculty in the Fay Jones School of Architecture and Design. Material experimentation, prototyping and representing scale models are an essential part of the design culture at the Fay Jones School. The Fabrication Labs are flexible work spaces that support hands-on learning and research by offering a variety of equipment in four facilities: Wood Lab, 3D Print Lab, Laser and CNC Lab, and the Build Lab. The Fabrication Labs are under the direction of the Fay Jones School's Dean's Office and the Fabrication Laboratories manager.

## Garvan Woodland Gardens

Garvan Woodland Gardens Website (http://www.garvangardens.org/)
Located on Lake Hamilton in Hot Springs, Arkansas, Garvan Woodland Gardens is an integral unit of the school. The land and endowment were the result of a bequest to the department of landscape architecture
in 1985. This 210-acre woodland habitat features a variety of garden settings and unique architectural structures designed and developed by world-renowned specialists in botanical gardens, landscape architecture and architecture.

Garvan Woodland Gardens' mission is to preserve and enhance a unique part of the Ouachita environment; provide people with a place of learning, research, cultural enrichment, and serenity; develop and sustain gardens, landscapes, and structures of exceptional aesthetics, design, and construction; and partner with and serve communities of which the Gardens is a part.

An internship program offers opportunities for summer study and employments.

## University of Arkansas Community Design Center <br> Community Design Center Website (http://uacdc.uark.edu/)

Since 1995 the University of Arkansas Community Design Center (UACDC) has provided award-winning, innovative planning to communities and organizations throughout Arkansas. A nationally recognized leader in urban design, sustainable development, and education UACDC design solutions advance triple-bottom line thinking: simultaneously solving for economic, ecological, and social criteria. The center's work is multi-disciplinary as it addresses new challenges in affordable housing, context sensitive highway design, low impact development, transit-oriented development, big box urbanism, watershed urbanism, and agricultural urbanism. In the tradition of a teaching office, students collaborate with the center's professional design staff and allied consultants while authoring their own proposals. The goal is to prepare designers for leadership in "wicked problem solving" that leads to intelligent development of the built environment.

## Off-Campus Study Requirement

Each student in the professional program in architecture, landscape architecture and interior design is required to complete an approved offcampus study experience focusing upon complex urban relationships, and fostering cultural diversity. Approved programs in the Fay Jones School vary. They range from a semester in Rome to five- to ten-week programs in Europe or Latin America.

A special international programs fee supports the school's international programs. These fees are assessed to all students participating in the professional (five-year) degrees in architecture, landscape architecture and interior design designated in the "Fees and Cost Estimates" section of this catalog. The international program and any travel fees offsets the costs of maintaining off-campus programs that are not a part of the school's university-funded budget, as well as enhancing studentcentered activities. Students are assessed the international fee each semester up until the semester they study abroad. At that time, they will be assessed for any remaining semesters plus any additional program costs not covered by the international study fees. The fee is assessed for each study abroad program and is not regulated by the catalog year of the students' first enrollment in the Fay Jones School of Architecture and Design. All travel fees are non-refundable under any circumstances including withdrawal from the respective professional programs. For further information, see notes on related program fees under "Fees and Cost Estimates" for the university.

## School Academic Regulations

## Plus/Minus Grading System

The Fay Jones School of Architecture and Design utilizes a plus/minus grading system that assigns numerical values to 12 different grades. These values are used for architecture, interior design and landscape architecture courses when grade-point averages are calculated. The 12step grading system with assigned values is as follows:

| Grade | Value |
| :--- | :--- |
| A | 4.00 |
| A- | 3.67 |
| B+ | 3.33 |
| B | 3.00 |
| B- | 2.67 |
| C+ | 2.33 |
| C | 2.00 |
| C- | 1.67 |
| D+ | 1.33 |
| D | 1.00 |
| D- | 0.67 |
| F | 0.00 |

## School Scholarships

More than 100 awards and scholarships are available to students in the Fay Jones School of Architecture and Design. Most are awarded annually on the basis of recommendations made by the scholarship committee of the school.

## Student Organizations

## American Institute of Architecture Students

The American Institute of Architecture Students (AIAS) is a national organization whose purpose is "to organize architecture students and combine their efforts to advance the science and art of architecture, to promote excellence in architectural education, training and practice, and to foster an appreciation of architecture and related disciplines among all persons." All students in the school's architecture program are eligible for membership.

## American Society of Landscape Architects, Student Chapter

The purpose of the student chapter of the American Society of Landscape Architects is to bring together the landscape architecture students to combine their interests and efforts, to extend their knowledge of the profession of landscape architecture, and to help advance the profession while preparing for a professional career. All students in the school's landscape architecture program are eligible for membership.

## American Society of Interior Designers Student Chapter

The American Society of Interior Design Student Chapter (ASID) is dedicated to representing the entire profession and encouraging the highest possible standards for the practice of interior design. Their purpose is to encourage interaction with professionals in interior design and allied professions and to develop leadership qualities. All students in the school's interior design program are eligible for membership.

## National Organization of Minority Architects

The National Organization of Minority Architects (NOMA) mission is to champion diversity within the design professions by promoting the excellence, community engagement, and professional development of its members.

## Tau Sigma Delta Honor Society

The Alpha Eta Chapter of Tau Sigma Delta is the only national collegiate honor society recognized in the fields of architecture, landscape architecture, interior design and allied arts. All students in the school are eligible for membership.

Elections to membership are made by the existing membership, subject to approval by the faculty, from the top 20 percent of each class of fourthyear and fifth-year students maintaining a minimum 3.00 cumulative grade-point average. In addition, leadership, character, and promise of professional merit are considered in making selections.

## Sigma Lambda Alpha

Sigma Lambda Alpha, founded and chartered by the Council of Educators in Landscape Architecture (CELA), is an international honor society that encourages, recognizes and rewards academic excellence in preparation for the profession of landscape architecture. Any landscape architecture junior or senior with an average of 3.2 or higher is eligible for membership.

## Ownership of Work

All original work submitted for credit, including design studio projects, becomes the property of the Fay Jones School of Architecture and Design. Students are required to maintain portfolios documenting all academic and design studio work. Digital copies of all work completed in a studio must be submitted to the studio year coordinator in order to receive a grade for the studio.

## School Computer Policy

All students enrolled in the school are required to purchase, for their first year, a personal computer matching or exceeding specifications issued by school (https://fayjones.uark.edu/_resources/PDFs/ RecommendedLaptopSpecifications.pdf). The specifications are the same for all departments. All students will need their computers in the fall semester of the first year.

Recommendations for educationally priced computers are available on the UA Information Technology Services (https://its.uark.edu/software-equipment/tech-store/student-recommendations.php\#fay-jones-school-ofarchitecture).

A substantial amount of software may be required depending on specific course requirements, most of which is free for students to download at school's Technical Support page (http://fayjones.uark.edu/people/current-students/technical-support.php).

## Office of the Dean of the School

Vol Walker Hall, Room 120

## Dean

Peter MacKeith

## Associate Dean

Ethel Goodstein-Murphree
World Wide Web: fayjones.uark.edu

## E-mail: fjsoa@uark.edu

## School Admission Requirements

Each program within the Fay Jones School of Architecture and Design has its own requirements for admission to their general and professional programs. The page below provides admission requirements for:

- The Department of Architecture
- The Department Interior Architecture and Design
- The Department of Landscape Architecture


## Department of Architecture Admissions

The department of architecture maintains two distinct tracks of study for entering freshmen to accommodate all students interested in pursuing a degree in architecture. The two tracks of study are designed to foster learning and to build strong foundations for entering students with different skill levels and high school backgrounds. Students accepted to the University of Arkansas with the intention to participate in the B.Arch. or B.S. programs in the department of architecture will be classified as fall/ spring studio students or summer/summer studio students and assigned to either the fall/spring studio track or summer/summer studio track based upon department admissions policies described below.

## Fall/Spring Studio

Students must meet all of the following requirements:

- 25 ACT or better
- 3.5 GPA in high school
- College preparatory curriculum to include physics and an upper level math (Pre-Calculus or higher)

Space in the studio is limited to 120 students with priority given to first year students who are admitted to the University of Arkansas and indicate architecture or architectural studies as their intended degree program by Nov. 15.

Students are reviewed at the end of the fall semester and may continue in the program if they meet the following criteria:

- "C" or better in ARCH 1015, Architectural Design I
- "C" or better in PHYS 1044, Physics for Architects I or an approved equivalent
- " C " or better in ARCH 1212, Design Thinking I: Foundations in Technology
- Present a 2.0 GPA

Students who do not meet those criteria will receive a letter and be advised accordingly.

## Summer/Summer Studio

Summer studio students meet the University of Arkansas minimum requirements for admission but do not meet the above noted department criteria for the fall/spring studio. These students can enroll in ARCH 1015, Architectural Design I in the summer if they meet the following criteria:

- "C" or better in PHYS 1044, Physics for Architects I or an approved equivalent
- Present a 2.0 GPA

Students who do not meet these criteria will be delayed until they satisfy the admissions criteria for the Department of Architecture. Students will be
reviewed at the end of the first summer session and will not be allowed to continue in the program if they do not meet the following criteria:

```
- "C" or better in ARCH 1015, Architectural Design I
- "C" or better in ARCH 1212, Design Thinking I: Foundations in Technology
- Maintain a 2.0 GPA
```


## Architecture Department Transfer Students

Transfer students who are admitted to the Fay Jones School of Architecture start the design studio sequence in the summer and must meet the following requirements:

- Completion of an approved general physics course and an approved mathematics course.
- To enter Design I in the summer, students must successfully pass Physics for Architects I (or another approved upper level physics course) with a minimum of $C$ or better, complete an approved math course and present a 2.0 GPA overall.
- Students admitted to the university with a completed two-year associate of arts or associate of science degree from an Arkansas state-supported two-year or four-year college or university, as stated in ACT 182, will have general education (core) requirements waived. All students must complete any lower division discipline specific courses required for the major, as well as all courses required to comply with the conditions of accreditation.

Lack of knowledge or misinterpretation of policies and/or regulations on the part of individual students will not be considered a valid reason for failure to fulfill requirements.

Transferring from Accredited Schools of Architecture: Students transferring from an accredited professional program in architecture must have their architecture courses reviewed for acceptance and for determination of studio placement by submitting materials for review. Please contact the school's advising center for a specific list of required materials.

NOTE: All students must complete or receive transfer credit for either PHYS 1044 Physics for Architects I or PHYS 2013 and PHYS 2011L College Physics I, MATH 1213 Plane Trigonometry, MATH 2043 Survey of Calculus or MATH 2053 Finite Mathematics and all other first year university core curriculum courses prior to entry into ARCH 2016 Architectural Design III and its co-requisites in architectural structures and history.

Ultimate responsibility for completion of entrance requirements rests with each student. For questions concerning admissions, please contact the school's advising center for additional information.

## Admission to the Professional Program

The department of architecture offers students the opportunity to prepare for architectural practice or related endeavors. With this opportunity comes a responsibility for demonstrating a commitment to personal growth and success in the professional program.

Students are admitted to the first year of the architecture curriculum based on the above described by the university and the school. Every semester, students' grades in all architecture courses, especially the design studio, are evaluated to assess their progress and performance.

Upon completion of the third year of the five-year architecture curriculum, including completion of the 35 semester-credit hour university's state minimum (general education) core required, students will be evaluated for admission to the professional program. Admission to the Professional Degree Program in the Department of Architecture requires a minimum 2.00 grade-point average in the University Core and each of the sub-disciplines of Architecture: History/Theory, Technology and Design.

Students admitted to the professional program will continue in the established studio curriculum sequence and are to complete the final two years of design studio at the school. In addition to completing the design studio sequence, students are encouraged to take maximum advantage of the opportunities that professional and free electives provide for preprofessional development, cultivation of specialization in and related to the profession, and/or preparation for graduate education.

Interior Architecture and Design Program Admissions: Students are admitted to the first year of the interior architecture and design curriculum based on criteria established by the university and by the program. They are evaluated each semester by grades in lecture courses and by grades for performance and progress in the design studio sequence.

Admission to the Professional Program for Interior Architecture and Design

The interior architecture and design program offers prospective students the opportunity to prepare for professional practice or related endeavors. With this opportunity comes a responsibility for demonstrating a commitment to personal growth and success in the professional program.

At the completion of IARD 2804 Interior Design Studio III in the interior architecture and design curriculum, students will be evaluated for admission into the professional program on the basis of academic performance in the university core and the required interior architecture and design curriculum. Admission is based on available desks and requires a majority vote of a departmental admissions committee. Students admitted to the professional program will continue in the established studio curriculum sequence and are to complete the final five studios at the school. Students with less than a cumulative 2.5 GPA in IARD and ARCH courses will not be admitted to the professional program. Students who are not admitted are encouraged to consider alternative programs in the school and the university.

## Department of Landscape Architecture Admissions

All students (including freshmen, international, and transfer students) admitted to the University of Arkansas are eligible for participation in the landscape architecture program in the school. Space in the studio is limited with priority given to first year students who are admitted and indicate landscape architecture or landscape architectural studies on their admissions application by November 15th. Students who require developmental work because of low ACT or SAT scores or universityadministered math placement examinations or who require courses to remove deficiencies may not register for courses carrying LARC departmental designations. Upon completion of required developmental work and maintaining a grade-point average of 2.00 or more on at least 12 credit hours, students may enroll in landscape architecture (LARC) courses.

## Admission to the Professional Program in Landscape Architecture

The department of landscape architecture offers a professional education grounded in liberal arts studies, which prepares students for landscape architecture practice in the private, public, and not-for-profit sectors. Successful completion of the program requires commitment to personal growth and excellence.

Students are admitted to the first year of the landscape architecture program based upon the established criteria by the University of Arkansas. Academic and professional performance is evaluated by grades in the course work, design studios, and construction labs. After two years in the program, students submit a portfolio of work at the end of the spring semester for application to continue in the professional program. Applicants who have a grade-point average below a 2.5 will not be allowed to continue in the program. Contact the department head for specific portfolio submission requirements and schedule of deadlines. All candidates will be notified of their acceptance or rejection in writing, normally by the first of August.

Students will be evaluated on general academic performance and in the landscape architecture curriculum as well as professional conduct. All department faculty serve on the admissions committee. Any appeal to the committee's decision may be made by submitting a letter to the department head one week before the first week of the subsequent fall semester. The appeal will be presented to the entire faculty for consideration and will require the candidate to present their case in person.

Students who fail to gain admission to the Bachelor of Landscape Architecture degree program will be referred to the department head and the school's academic adviser for appeal procedures and alternative degree programs in the school and the university.

## Honors

## Fay Jones School of Architecture and Design Honors Program

The Honors Program of the Fay Jones School of Architecture and Design is proud to be one of the six individual honors programs partnered with the University of Arkansas Honors College. The Fay Jones School Honors Program is rooted in the best traditions of design education: responsibility and service to the societies and cultures to which we are inextricably connected, and the nurturing of the individual curiosity and capabilities of our students. Honors requirements are the same in all departments (Architecture, Interior Architecture and Design and Landscape Architecture) and can be found below.

The Fay Jones School of Architecture and Design Honors Program provides opportunities for students of superior academic and creative ability to enhance and enrich their professional and liberal education. Students in the Architecture Honors Program are eligible to graduate cum laude, magna cum laude, and summa cum laude. All other students who attain a cumulative GPA of 3.5 or higher will be eligible to graduate with distinction, a classification separate from the cum laude awards. The school's Honors Program requires 18 credits of honors coursework.

## Admission to the Fay Jones School Honors Program

The Honors College will automatically enroll freshmen who are accepted as honors students before summer orientation in the Fay Jones School Honors Program. At summer orientation, these honors students will fill out the Fay Jones School Honors Program enrollment form.

Freshmen who were not admitted by the Honors College before orientation but who come to orientation with the qualifying 28 composite ACT score and 3.75 high school GPA will also fill out the Fay Jones

School Honors Program Enrollment form at orientation. Students who do not present both 28 composite ACT and 3.75 high school GPA, but who subsequently earn and maintain a 3.5 GPA in their coursework at the $U$ of A, will be invited to enroll in the Fay Jones Honors Program as soon as they attain a 3.5 GPA, provided it is still possible for them to complete all of the Honors program requirements at the time of their enrollment.

Transfer students may be invited to join the Fay Jones School Honors Program if they maintain a cumulative GPA of 3.5 or higher in courses completed at the University of Arkansas.

Every semester, the school's advising center will apprise the Fay Jones School Honors Program Committee of students who have achieved this level of excellence and are eligible to join the Fay Jones School Honors Program. Invitations are extended to students by the end of the semester in which the candidacy is advanced.

## Confirmation of Intent to Complete the Fay Jones School Honors Program

At the end of the first semester of the third year, students will sign a form, confirming their intention to complete the remaining requirements for their honors degree. Students found not to have successfully completed the honors core course(s) needed to satisfy their Honors degree requirements (i.e., sufficient credits in University Core and/or Professional Core Honors courses) will be dismissed from the honors program at this time.

## Dismissal from the Fay Jones School Honors Program

The Fay Jones School Honors Program students who fail to maintain a 3.5 cumulative GPA, depending on their year level, will receive a onesemester probation period prior to dismissal from the program.

## Honors Independent Study Policy

Honors students may take as many regular or honors independent study credits as they deem desirable, but only one three-credit honors independent study course may be substituted for an Honors Professional Elective course. Furthermore, the substitution will be permitted only if all of the following conditions are satisfied:

- That the honors independent study course not be taken concurrently with capstone credit studio.
- That the honors independent study course not be taught by the student's capstone director.
- That honors independent study course be substituted for no more than three credits of a student's required professional electives credits.

It is recommended that students considering this option seek special advising from their faculty mentor. As it is helpful for students to know what is expected of them, the work of the honors independent study (research paper, models, prototypes, etc.) should be determined, and agreed upon, by the professor and student before the student registers for the credits. The school's advising center will register a student for an Honors Special Projects course only upon request of a syllabus or prospectus for the independent study from the student.

## Honors Capstone

All honors students will pursue a capstone project during the final year of their undergraduate program. Honors students will invest three credit hours in the development of a capstone project that will articulate research topics identified in the ARDS 3153H Honors Methods of Design Inquiry course taken spring semester in a students' third year. Guidelines
for topic selection and preparation of the honors capstone project are available from the Honors Committee.

All Fay Jones Honors students are held to the highest standard with regard to academic achievement and academic integrity. Students violating the Academic Integrity policy that receive a sanction of \# 1.0 at the University of Arkansas will be permanently removed from the Fay Jones Honors Program without the ability to reapply. The student may appeal the decision to the University's Academic Integrity Board; if the sanction is overturned and removed, the student will be reinstated into the Fay Jones Honors Program.

The honors capstone is a student-directed project supervised by a capstone director with expertise in the capstone topic. The capstone director, who must be a faculty member in the Fay Jones School, chairs a capstone committee to be comprised of two other members, typically, a departmental faculty member and a non-departmental faculty member who brings additional fields of knowledge to the project. In rare cases when the capstone director, in consultation with the School's Honors Committee and the student, determines that a non-departmental faculty member with expertise appropriate to the capstone in question cannot be identified on campus, an extra-disciplinary member from within the Fay Jones School (e.g., faculty in architectural history, technology, or other allied field) may fill the position of the non-departmental member. Any such exceptions to the standard membership of a capstone committee should be infrequent. The point of including non-departmental participation is to help ensure that a student's research is understandable and valid to an informed community outside of the disciplines of architecture, interior design or landscape architecture. Additional faculty, both departmental or non-departmental, as well as non-academic experts, may participate in any honors capstone as non-committee members, if the capstone director welcomes their involvement. Students will complete and present a written prospectus for the Honors Capstone no later than the Friday before summer break in their third year of study. The prospectus will be a product of the ARDS 3153H Honors Methods of Design Inquiry course. Students shall meet a schedule of interim requirements established by the capstone committee in consultation with the School's Honors Committee.

## Requirements for Fay Jones School of Architecture and Design Honors Program Scholars

Completion of 18 hours of honors designated courses, to include a minimum of:

| Honors elective (any Honors course at the university) 3 <br> Honors Professional Core (any Honors professional core in the Fay <br> Jones School) 3 <br> Honors Professional Electives or upper-level (3000+) university <br> honors courses 6 <br> ARDS 3153H Honors Methods of Design Inquiry <br> ARDS 5143H Honors Capstone |  |
| :--- | ---: |
| Total Hours | 3 |

## Architectural Studies (ARCH)

Department Office
115 Vol Walker Hall

## Bachelor of Science in Architectural Studies

The Bachelor of Science in Architectural Studies incorporates course work from the school with liberal studies for students with interests that fall outside the parameters of the accredited professional degree program. The architectural studies program provides opportunities for students who wish to prepare for graduate study in an accredited architecture program or in an allied discipline, such as architectural history, historic preservation, urban planning, or construction management, as well as serving students who seek opportunities in related fields that may not require the five-year accredited degree.

Architectural Studies degree candidates may pursue an academic minor. The minor must be in a field other than the major area, and students must notify the department of their intention to minor. An academic minor ordinarily consists of 15-18 hours.

Although foreign study is not required of candidates for the four-year degree, students in the architectural studies curriculum are encouraged to participate in the school's approved off-campus study programs.

To take maximum advantage of the opportunities the four-year degree offers for pre-professional development (cultivation of specialization in and related to the field, and/or preparation for graduate study) each candidate for the Architectural Studies degree will work with a faculty adviser to develop a program of study emphasizing a student's special interests.

## Requirements for a Bachelor of Science Degree in Architectural Studies:

1. Completion of the following 31 -hour architectural studies program: Architectural Design
ARCH 1015 Fundamental Design Skills 5

ARCH 1025 Fundamental Design Methodology 5
Architectural Technology
ARCH 1212 Design Thinking I: Foundations in Technology 2
ARCH 2132 Environmental Technology I 2
History and Theory of Architecture
ARCH $1013 \quad$ Diversity and Design
ARCH 1222 Design Thinking II: Foundations in History 2
ARCH 2233 History of Architecture I 3
ARCH 2243 History of Architecture II 3
ARCH 4433 History of Architecture III 3
ARCH 4523 Architectural Theory 3
(Students interested in Landscape Architecture may substitute LARC 3413 for ARCH 2233 or ARCH 2243.)

## Total Hours

31
2. Completion of the following 35 -hour state minimum core (p. 81): English Composition

| ENGL 1013 | Composition I (ACTS Equivalency $=$ ENGL <br> 1013) |
| :--- | :--- |
| ENGL 1023 | Composition II (ACTS Equivalency $=$ ENGL <br> $1023)$ |

American History or Government
Select one of the following:
3
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
$\left.\begin{array}{lll}\text { HIST } 2013 & \begin{array}{l}\text { History of the American People, 1877 to Present } \\ \text { (ACTS Equivalency = HIST 2123) }\end{array} \\ \text { PLSC } 2003 & \begin{array}{l}\text { American National Government (ACTS } \\ \text { Equivalency = PLSC 2003) }\end{array} \\ \text { Mathematics }\end{array} \quad \begin{array}{ll}\text { Select one of the following: }\end{array}\right]$

Total Hours
3. Completion of 45 hours of electives as follows:

Professional Concentration Electives
Concentration tracks can include: M.Arch. preparation; historic preservation; environmental technologies and sustainability; urban and regional planning; a recognized minor in an allied discipline; and other similar programs of study, subject to approval; including at least nine hours of upper-level courses in FJSOA.
Upper Division Electives outside of FJSOA
Interdisciplinary Core 9
Nine hours to include at least one course in IDES and one course in LARC

Total Hours
4. Free Electives 12
5. A minimum of 120 hours with a 2.00 cumulative grade-point average at this institution both in all work attempted and in course work completed in the Fay Jones School of Architecture.
6. Presentation of at least 40 semester hours in courses numbered 3000 or above or courses in the Fay Jones School of Architecture (or allied discipline) numbered 2000 with specific course prerequisites.
7. UNIV 1001 University Perspectives does not count toward degree credit.

## Architectural Studies B.S. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program. During the first year, students who have been admitted to the fall-spring design studio and students who have been to the summersummer design studio follow different schedules, both of which are listed below, with the fall-spring studio first and then the summer-summer studio. The second, third and fourth years are identical for both scenarios.

## Fall-Spring Design Studio



HIST 2013 History of the American
People, 1877 to Present (ACTS
Equivalency = HIST 2123)
PLSC 2003 American National
Government (ACTS Equivalency = PLSC 2003)

PHYS 1044 Physics for Architects I
Fine Arts or Humanities Core

These students may continue into
ARCH 1015 Architectural Design I in the summer if they meet the following criteria: "C" or better in PHYS 1044 Physics for Architects I or an approved equivalent; Maintain a 2.0 GPA. Students who do not meet these criteria will be delayed until they satisfy the admissions criteria for the Department of Architecture. Students will be reviewed at the end of the first summer session and will not be allowed to continue in the program if they do not meet the following criteria: "C" or better in ARCH 1015 Architectural Design I; "C" or better in ARCH 1212 Design Thinking I: Foundations in Technology; Maintain a 2.0 GPA.
ENGL 1023 Composition II (ACTS
Equivalency = ENGL 1023)
Social Science Core
PHYS 1054 Physics for Architects II
(strongly recommended)
Fine Arts or Humanities Core
(whichever is still needed)
ARCH 1015 Fundamental Design Skills
ARCH 1212 Design Thinking I:
Foundations in Technology
ARCH 1025 Fundamental Design Methodology
ARCH 1222 Design Thinking II:
Foundations in History
Year Total:

ARCH 2132 Environmental Technology
Social Science Core ..... 3
ARCH 2233 History of Architecture I ..... 3
Select one of the following (if still ..... 0-3
needed):
HIST 2003 History of the AmericanPeople to 1877 (ACTS Equivalency =
HIST 2113)
PLSC 2003 American National
Government (ACTS Equivalency =
PLSC 2003)
HIST 2013 History of the American
People, 1877 to Present (ACTS
Equivalency = HIST 2123)
Interdisciplinary Core Requirement 3
ARCH 2243 History of Architecture II 3
Social Science Core 3
Interdisciplinary Core Requirement 3
Free Elective 3
Fine Arts or Humanities Core (if still 3
needed)
Year Total: 14

| Third Year | Fall | Units <br> Spring <br> Summer |  |
| :--- | ---: | ---: | ---: |
| ARCH 4433 History of Architecture III | 3 |  |  |
| Social Science Core (if still needed) | $0-3$ |  |  |
| Interdisciplinary Core Requirement | 3 |  |  |
| Concentration or Minor Elective | 3 |  |  |
| Upper-level Arts and Sciences 3000- <br> plus Course Requirement | 3 |  |  |
| Fine Arts or Humanities Core |  | 3 |  |
| ARCH 4523 Architectural Theory |  | 3 |  |
| Concentration or Minor Elective | 3 |  |  |
| Upper-level Arts and Sciences 3000- <br> plus Course Requirement <br> Year Total: | 12 | 3 |  |


| Fourth Year |  |  | Units |
| :--- | ---: | ---: | ---: |
| Fall | Spring | Summer |  |

## Academic Policies

1. Any student receiving a grade of " $D(+/-)$ " in a pre-professional program studio course is subject to a comprehensive review of his/her
semester's work by the Design Review Committee. The committee can require the student to retake the studio, prior to advancing to the next studio in sequence, in order to demonstrate competence by achieving a grade of " $C$ " (2.00) or better. A student receiving an " $F$ " in any required design studio must repeat that studio before progressing.
2. Each student's progress through the Design Studio sequence is monitored and governed by the faculty and subject to a design review process.
3. Any student receiving an "l" in a design studio must complete all work necessary to receive a grade in that studio prior to the first day of the next studio in the student's prescribed sequence. Students carrying a grade of "l" will not be permitted to enroll in subsequent studios.
4. Prior to graduation, a student must present a 2.00 cumulative gradepoint average in all work at this institution.

## Faculty

Baker, Emily, M.Arch. (Cranbrook Academy of Art), B.Arch. (University of Arkansas), Assistant Professor, 2017.
Blackwell, Marlon, M. Arch. (Syracuse University), B.Arch. (Auburn University), Distinguished Professor, 1992, 2010.
Boelkins, Jonathan, M.Arch. (Washington University in St. Louis), B.Arch. (University of Arkansas), Instructor, 2017.

Colangelo, Jessica L., M.Arch. (Princeton University), B.Arch. (Rice University), Assistant Professor, 2018.
Del Gesso, Emilio, B.A. (University of Rome), Assistant Professor, 1997.
Elberfeld, Nathaniel, S.M.Arch.S. (Massachusetts Institute of
Technology), M.Arch. (Washington University in St. Louis), B.S. (William and Mary), Visiting Assistant Professor, 2021.
Fitzpatrick, Lynn, M.Arch. (Rice University), B.S. (Cornell University),
Teaching Associate Professor, 1999, 2023.
Folan, John, M.Arch (University of Pennsylvania), B.S.Arch (University of Illinois), Professor, 2019.
Goodstein-Murphree, Ethel S., Ph.D. (University of Michigan-Ann
Arbor), B.Arch., B.S. (City University of New York), Professor, 1992, 1998.
Herman, Greg, M.Arch. (Rice University), B.Arch. (University of Cincinnati), Associate Professor, 1991, 1998.
Holland, Brian, M.Arch.,(University of Pennsylvania), B.Arch., (California State Polytechnic University, Pomona), Assistant Professor, 2018.
Jacobus, Frank R., M.Arch. (University of Texas at Austin), Associate Professor, 2012, 2015.
Kennedy, David, M.Des. (Harvard University), B.Arch. (Carnegie Mellon University), Assistant Professor, 2021.
Kuhns, Alyssa, M.I.D. (Pratt Institute), B.Arch. (Carnegie Mellon University), Assistant Professor, 2021.
Luoni, Stephen D., M.Arch. (Yale University), B.S.Arch. (Ohio State University), Professor, 2003, 2006.
MacKeith, Peter, M.Arch. (Yale University), B.A. (University of Virginia), Professor, 2014.
Messadi, Tahar, Ed.D., M.Arch. (University of Michigan-Ann Arbor), B.Arch. (Universite de Constantine, Algeria), Associate Professor, 2003, 2009.

Rotolo, Chuck, M.Arch. (Washington University in St. Louis), B.Arch. (Louisiana State University), Assistant Professor, 2005.
Rudzinski, Russell D., M.A. (Washington University in St. Louis), B.Arch. (Syracuse University), Assistant Professor, 2000.
Sexton, Kim, Ph.D., M.A., M.Phil. (Yale University), B.A. (State University of New York at Binghampton), Associate Professor, 1999, 2005.
Shannon, Graham F., M.Arch. (Rice University), B.Arch., B.A. (University of Arkansas), Professor, 1979, 1990.
Terry, Laura, M.F.A. (Savannah State University), B.S. (Auburn
University), Associate Professor, 1998, 2007.

Turner, Alison, M.A. (Parsons School of Design), B.A. (Kentucky State University), Assistant Professor, 2008.
Veloso, Pedro, M.Sc. (University of Sao Paulo), B.Arch., B.U.D.
(University of Brasilia), Assistant Professor, 2021.

## Courses

ARCH 1003. Basic Course in the Arts: Architecture Lecture. 3 Hours.
A general introduction to architecture, exploring the designed environment, including cities and buildings and their histories, technologies and users, in a holistic manner. May not be presented towards satisfaction of major requirements in either the B.Arch or B.A. in architectural studies degrees. (Typically offered: Fall and Spring)

ARCH 1003H. Honors Basic Course in the Arts: Architecture Lecture. 3 Hours.
A general introduction to architecture, exploring the designed environment, including cities and buildings and their histories, technologies, and users, in a holistic manner. May not be presented towards satisfaction of major requirements in either the B.Arch or B.A. in architectural studies degrees. Prerequisite: Honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 1003.
ARCH 1013. Diversity and Design. 3 Hours.
Explores the reciprocal relationship between diversity and design in America, investigating how race, gender, religion, ability, age, class, and location affect and are affected by the design of media, products, architecture, and cities/regions. Positive and negative effects of diversity and design are discussed. (Typically offered: Summer)

## ARCH 1015. Fundamental Design Skills. 5 Hours.

Fundamental design skills; development of visual and verbal communication skills including observation skills, design technologies, analysis and representation in both 2 -dimensions and 3 -dimensions through analog and digital tools; creative and critical thinking skills. (Typically offered: Fall and Spring)

## ARCH 1025. Fundamental Design Methodology. 5 Hours.

Fundamental design skills; use of precedents for understanding principles of design and natural and formal ordering systems; design development using both iterative and alternative methods of exploration in both 2-dimensions and 3-dimensions using analog and digital tools; continued development of visual and verbal communication skills. Prerequisite: ARCH 1015. (Typically offered: Spring and Summer)
ARCH 1212. Design Thinking I: Foundations in Technology. 2 Hours.
This course will raise pertinent questions about the role of architectural technology in design through studying the important theories about technology from Vitruvius to contemporary practice and understanding how they have been manifested in built form. (Typically offered: Fall and Summer)
ARCH 1222. Design Thinking II: Foundations in History. 2 Hours.
Explores the role of architectural history in design thinking, introducing divergent canons and traditions in a global context and emphasizing understanding of the relationships among buildings, spaces and places and the social, political and technological circumstances in which the work was theorized, produced, and lived. Prerequisite: ARCH 1212. (Typically offered: Spring and Summer)
ARCH 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARCH 2016. Architectural Design III. 6 Hours.
Introduction of formal principles and strategies used in space making, focusing on the development of plans and sections. Precedents and the understanding of them through analysis and syntheses are used as a means of examining the past and the present while providing a framework from which personal design sensibilities can evolve. Corequisite: ARCH 2113 and ARCH 2132 and ARCH 2233. Prerequisite: ARCH 1025 and ARCH 1222. (Typically offered: Fall)

## ARCH 2026. Architectural Design IV. 6 Hours.

An elaboration of space-making, addressing three-dimensional aspects of formmaking, including the influence of structural systems, articulation of the vertical section, and exterior expression; the role of site as a generator of form; and the overarching importance of technics, including the materiality of space, structure, and light. Corequisite: ARCH 2123 and ARCH 2243. Prerequisite: ARCH 2016 and ARCH 2113 and ARCH 2132 and ARCH 2233. (Typically offered: Spring)
ARCH 2113. Architectural Structures I. 3 Hours.
Introduction to statics and strength of materials. Building loads are examined as to their effect on the elements of architectural projects. Simple post and beam structures are the focus of this course. Bending, axial, and shear stress are examined in beams and columns. Materials studied include wood, steel, and concrete. Corequisite: ARCH 2016 and ARCH 2132. Prerequisite: ARCH 1212. (Typically offered: Fall)
ARCH 2113H. Honors Architectural Structures I. 3 Hours.
Introduction to statics and strength of materials. Building loads are examined as to their effect on the elements of architectural projects. Simple post and beam structures are the focus of this course. Bending, axial, and shear stress are examined in beams and columns. Materials studied include wood, steel, and concrete. Corequisite: ARCH 2016 and ARCH 2132. Prerequisite: ARCH 1212. (Typically offered: Fall)
This course is equivalent to ARCH 2113.

## ARCH 2123. Architectural Structures II. 3 Hours.

Introduction to the basic theories of structures, structural behavior, and the design of simple structural systems capable of resisting gravity and lateral forces. Provides a basic understanding of structural behavior, organization of framing systems and location of lateral force resisting elements for building structures and other technical systems. Corequisite: ARCH 2026. Prerequisite: ARCH 2113 and ARCH 2132. (Typically offered: Spring)

## ARCH 2123H. Honors Architectural Structures II. 3 Hours.

Introduction to the basic theories of structures, structural behavior, and the design of simple structural systems capable of resisting gravity and lateral forces. Provides a basic understanding of structural behavior, organization of framing systems and location of lateral force resisting elements for building structures and other technical systems. Corequisite: ARCH 2026. Prerequisite: ARCH 2113, ARCH 2132 and honors candidacy. (Typically offered: Spring)
This course is equivalent to ARCH 2123.

## ARCH 2132. Environmental Technology I. 2 Hours.

Introduces theories and concepts of the building thermal, luminous and sonic environments with focus on solar geometry-shading, climate-thermal stresses, natural ventilation, daylight, sound isolation and noise control. The application of these systems to support the design of an environmentally responsive building and its enclosure is addressed. Corequisite: ARCH 2016 and ARCH 2113. Prerequisite: ARCH 1212. (Typically offered: Fall)

## ARCH 2132H. Honors Environmental Technology I. 2 Hours.

Introduces theories and concepts of the building thermal, luminous and sonic environments with focus on solar geometry-shading, climate-thermal stresses, natural ventilation, daylight, sound isolation and noise control. The application of these systems to support the design of an environmentally responsive building and its enclosure is addressed. Corequisite: ARCH 2016 and ARCH 2113. Prerequisite: ARCH 1212. (Typically offered: Fall)
This course is equivalent to ARCH 2132.
ARCH 2233. History of Architecture I. 3 Hours.
Critical study and analysis of world architecture from ancient times through the Middle Ages, comprising the ancient Americas, Asia, Mesopotamia, and Egypt; Classical, Byzantine, and Islamic architecture and vernacular design; and the early Christian, Romanesque, and Gothic periods. (Typically offered: Fall)

## ARCH 2233H. Honors History of Architecture I. 3 Hours.

Critical study and analysis of world architecture from ancient times through the Middle Ages, comprising the ancient Americas, Asia, Mesopotamia, and Egypt; Classical, Byzantine, and Islamic architecture and vernacular design; and the early Christian, Romanesque, and Gothic periods. Prerequisite: Honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 2233.
ARCH 2243. History of Architecture II. 3 Hours.
Critical study and analysis of world architecture from the fifteenth to the midnineteenth centuries. Encompasses early modern Europe (Renaissance, Baroque, and Neoclassical) as well as two or more of the following: colonial New Spain, early modern Japan, and/or early modern Islamic empires in Africa, the Middle East, and Asia. Vernacular American building is surveyed as well as architecture in the nineteenth-century, including Beaux-Arts design and the introduction of industrial materials. Prerequisite for architecture majors only: ARCH 2233. (Typically offered: Spring)

## ARCH 2243H. Honors History of Architecture II. 3 Hours.

Critical study and analysis of world architecture from the fifteenth to the midnineteenth centuries. Encompasses early modern Europe (Renaissance, Baroque, and Neoclassical) as well as two or more of the following: colonial New Spain, early modern Japan, and/or early modern Islamic empires in Africa, the Middle East, and Asia. Vernacular American building is surveyed as well as architecture in the nineteenth-century, including Beaux-Arts design and the introduction of industrial materials. Prerequisite: Architecture majors only. Corequisite: ARCH 2233 and honors candidacy. (Typically offered: Spring)
This course is equivalent to ARCH 2243.

## ARCH 2600. Undergraduate Research Assistant. 0 Hours.

Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARCH 2993. Art and Culture in Italy. 3 Hours.
The evolution of culture and aesthetics and their immediate relationship with the creation of Italy's masterpieces in art and architecture. Includes site visits and lectures. Offered in the Rome study abroad semester. (Typically offered: Fall and Spring)

## ARCH 3016. Architectural Design V. 6 Hours.

Emphasis on issues of design process, exploration of internal and external determinants of form and the integration of appropriate technologies in design solutions. Corequisite: ARCH 4433. Prerequisite: ARCH 2026 and ARCH 2123 and ARCH 2243. (Typically offered: Fall)

## ARCH 3026. Architectural Design VI. 6 Hours.

Studio-based analysis and design of structural and enclosure systems for buildings with particular emphasis on systems interface and application within the context of design exercises. Investigations of the appropriate use of materials and assemblies for varied programmatic and environmental criteria. Twelve hours of studio each week. Corequisite: ARCH 4523. Prerequisite: ARCH 3016 and ARCH 3143. (Typically offered: Spring)

## ARCH 303V. Special Projects. 1-6 Hour.

Individual or group investigation in research, visual communication, history, or design concerning special interests of student or faculty. (Typically offered: Irregular) May be repeated for degree credit.

ARCH 303VH. Honors Special Projects. 1-6 Hour.
Individual or group investigation in research, visual communication, history, or design concerning special interests of student or faculty. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit. This course is equivalent to ARCH 303 V .

## ARCH 3143. Building Materials and Assemblies. 3 Hours.

Introduction and comprehensive survey of primary building materials and methods of assembly: their history, properties, use and configuration - both traditional and contemporary, in the service of building construction; their impact on the form, expression and performance of building structures and envelopes. Prerequisite: ARCH 2132, ARCH 2113 and ARCH 2123. (Typically offered: Fall)

## ARCH 3253. Environmental Technology II. 3 Hours.

Covers theoretical foundations and applications of building environmental systems: HVAC with duct layout and controls, indoor air quality, electric lighting, power, acoustics, fire safety and egress, and water and waste. The important role of such systems in the design of buildings is examined through a series of small projects assignments. Prerequisite: ARCH 3016 and ARCH 3143. (Typically offered: Spring)

## ARCH 3600. Undergraduate Research Assistant. 0 Hours.

Undergraduate research. (Typically offered: Fall, Spring and Summer)

## ARCH 4016. Comprehensive Studio. 6 Hours.

Emphasis on issues of typology, context and technological suitability as sources of theoretical and developmental responses. Corequisite: ARCH 4152. Prerequisite: ARCH 3026. (Typically offered: Fall)

## ARCH 4023. Advanced Architectural Studies. 3 Hours.

Advanced seminars in subjects to special interest to students and faculty. (Typically offered: Fall and Spring) May be repeated for degree credit.

ARCH 4023H. Honors Advanced Architectural Studies. 3 Hours.
Advanced seminars in subjects to special interest to students and faculty.
Prerequisite: Honors candidacy. (Typically offered: Fall and Spring) May be repeated for degree credit.
This course is equivalent to ARCH 4023.
ARCH 4116. Architectural Design - Rome. 6 Hours.
Investigation of complex design problems in the context of the city of Rome, utilizing advanced issues in architectural design and planning. Prerequisite: ARCH 3026 or ARCH 4016. (Typically offered: Fall and Spring)

## ARCH 4126. Architectural Design Latin America. 6 Hours.

Introduces a complex social and physical urban condition through a process of formal analysis and design executed in a designated country augmented by an intense graphic investigation of urban form encountered through related field trips to the distinct cultural and geographic regions. Prerequisite: ARCH 3026 or ARCH 4016. (Typically offered: Summer)

## ARCH 4152. Building Systems Integration. 2 Hours.

Promotes the synthesis of building technologies, systems selection and integration in the resolution of a building design. Specifically, the student demonstrates knowledge in the ability to generate digital and analog graphic resolutions highlighting the design response of material, structural and environmental systems in a building. Corequisite: ARCH 4016. Prerequisite: ARCH 2113 and ARCH 2123 and ARCH 2132 and ARCH 3143 and ARCH 3253. (Typically offered: Fall and Spring)

## ARCH 4152H. Honors Building Systems Integration. 2 Hours.

Promotes the synthesis of building technologies, systems selection and integration in the resolution of a building design. Specifically, the student demonstrates knowledge in the ability to generate digital and analog graphic resolutions highlighting the design response of material, structural and environmental systems in a building. Corequisite: ARCH 4016. Prerequisite: ARCH 2113 and ARCH 2123 and ARCH 2132 and ARCH 3143 and ARCH 3253. (Typically offered: Fall and Spring) This course is equivalent to ARCH 4152.

## ARCH 4433. History of Architecture III. 3 Hours.

Critical study and analysis of the history and theories of modern architecture from the mid-nineteenth century to the present. Prerequisite: ARCH 2233 and ARCH 2243 or IARD 2883. (Typically offered: Fall)

ARCH 4433H. Honors History of Architecture III. 3 Hours.
Critical study and analysis of the history and theories of modern architecture from the mid-nineteenth century to the present. Prerequisite: ARCH 2233, ARCH 2243 and honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 4433.
ARCH 4523. Architectural Theory. 3 Hours.
Introduction to the lexicon of architecture and the ideas and ideologies that provide the conceptual and critical infrastructure for the discipline. Reading and discussion of representative theory texts. Emphasis on twentieth century modernism and postmodernism, including contemporary speculations on possible and emerging forms of practice after theory. Prerequisite: ARCH 2233, ARCH 2243, and ARCH 4433. (Typically offered: Spring)
ARCH 4523H. Honors Architectural Theory. 3 Hours.
Introduction to architectural theories and their relationship to modern historiography. Case studies are employed for the critical evaluation of significant texts and the discernment of concepts embedded in textual structures. Reading theory through established historical categories establishes critical insight to the original deployment, negation and resurfacing of architectural theories. Prerequisite: ARCH 2233, ARCH 2243, and ARCH 4433. (Typically offered: Spring) This course is equivalent to ARCH 4523.

ARCH 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARCH 4653. Architecture of the City. 3 Hours.
Analysis of Rome's urban form and historical and theoretical information in support of the students' experience. Includes site visits and lectures. Offered in the Rome study abroad semester. (Typically offered: Fall and Spring)
ARCH 4653H. Honors Architecture of the City. 3 Hours.
Analysis of Rome's urban form and historical and theoretical information in support of the students' experience. Includes site visits and lectures. Offered in the Rome study abroad semester. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ARCH 4653.

## ARCH 4673. Modern and Contemporary Rome. 3 Hours.

Explores different local conditions that determine main architectural changes that have taken place in Rome during the last century of its urban history. Important works, leading figures and major concepts in contemporary European architecture will be described to introduce examples of modern and contemporary architecture in Rome. (Typically offered: Fall and Spring)

## ARCH 4673H. Honors Modern and Contemporary Rome. 3 Hours.

Explores different local conditions that determine main architectural changes that have taken place in Rome during the last century of its urban history. Important works, leading figures and major concepts in contemporary European architecture will be described to introduce examples of modern and contemporary architecture in Rome. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ARCH 4673.
ARCH 4853. Renaissance and Baroque Architecture. 3 Hours.
Study of Renaissance and Baroque architecture in Europe and the New World from 1400 to 1700 . With reference to an array of texts, drawings, and the edifices themselves, this course charts the evolution of a commanding Western architectural tradition. Renaissance and Baroque -- with close attention to the social, humanistic, and religious contexts that produced it. Prerequisite: ARCH 4433. (Typically offered: Irregular)
This course is equivalent to ARHS 4753.

## ARCH 4863H. Honors St. Peter's and the Vatican. 3 Hours.

Examines art and architectural history of St. Peter's Basilica in Rome from antiquity to present. Emphasis on the Renaissance/Baroque church and its early Christian predecessor. Students consider the impact of devotional practices and papal politics on the church, the Vatican Palace, and its renown artworks including the Sistine ceiling. Prerequisite: ARCH 2233 or ARCH 2233H, and ARCH 2243 or ARCH 2243H and ARCH 4433 or ARCH 4433H. (Typically offered: Irregular)
This course is equivalent to ARHS 4733.
ARCH 4933. Introduction to Historic Preservation. 3 Hours.
Introduces theoretical, methodological and practical issues of architectural preservation in Europe and, more specifically, in Italy. Addresses history and theory of restoration, basic principles of architectural preservation and methodology in the study and praxis of preservation applied to architecture and the issues posed by the preservation of modern architecture. (Typically offered: Fall and Spring)

ARCH 5016. Option Studio I. 6 Hours.
Project development dependent upon the synthesis of knowledge and application of critical thinking addressing architectural issues at multiple scales. Prerequisite: ARCH 4016, or ARCH 4116, or ARCH 4126. (Typically offered: Fall) May be repeated for degree credit.

## ARCH 5026. Option Studio II. 6 Hours.

Project resolution including demonstrated skill in generating design ideas supported by clear understanding of issues resulting in comprehensive development and presentation of architectural issues at multiple scales. (Typically offered: Spring) May be repeated for degree credit.

## ARCH 5314. Architectural Professional Practice. 4 Hours

Study of role and responsibility of the architect, owner, and contractor relationships; professional ethics; organization of the architect's office; contracts and other documents; risk management strategies; and the preparation of the technical specifications and bidding documents of the Project Manual. Prerequisite: ARCH 4016 or ARCH 4116 or ARCH 4126. (Typically offered: Fall)

ARCH 5493. History of Urban Form. 3 Hours.
The study of pre-industrial urban and architectural design strategies in cities from the Classical through the Baroque eras and their rediscovery in the late 20th century, providing the student with a designer's understanding of a broad range of exemplary urban spaces and the buildings that shape them. Prerequisite: ARCH 2233 and ARCH 2243 and ARCH 4433. (Typically offered: Irregular)

ARCH 5493H. Honors History of Urban Form. 3 Hours.
The study of pre-industrial urban and architectural design strategies in cities from the Classical through the Baroque eras and their rediscovery in the late 20th century, providing the student with a designer's understanding of a broad range of exemplary urban spaces and the buildings that shape them. Prerequisite: ARCH 2233 and ARCH 2243 and ARCH 4433. (Typically offered: Irregular)
This course is equivalent to ARCH 5493.
ARCH 5953. Preservation Practice Field Trip. 3 Hours.
Intensive field study of a domestic or foreign site of significant or precedentsetting preservation activity, through a field trip and a course of pre-travel lectures. (Intersessions) Prerequisite: ARCH 4943 or instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## Architecture (ARCH)

## Department Office

115 Vol Walker Hall

The Bachelor of Architecture prepares students for registration and licensure to practice architecture. Architects are licensed professionals trained in the art and science of the design and construction of buildings and structures that primarily provide shelter. Additionally, architects may be involved with designing the total built environment-from how a building integrates with its surrounding landscape to architectural or
construction details that involve the interior of the building to designing and creating furniture to be used in a specific space. An architect will create the overall aesthetic and look of buildings and structures, but the design of a building involves far more than its appearance. Buildings also must be functional, safe and economical and must suit the specific needs of the people who use them. Most importantly, they must be built with the public's health, safety and welfare in mind.

## Architecture - National Architectural Accrediting Board

In the United States, most registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards. Doctor of Architecture and Master of Architecture degree programs may require a pre-professional undergraduate degree in architecture for admission. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The University of Arkansas Fay Jones School of Architecture and Design's department of architecture offers the following NAAB-accredited degree program:

- B.Arch. (157 undergraduate credits)

The last accreditation visit for the B.Arch. programs was conducted in February 2014.

The National Architectural Accrediting Board (NAAB) only accredits professional programs offering the Bachelor of Architecture, which requires a minimum of five years of study, and the Master of Architecture degrees. These professional degrees are structured to educate those who aspire to registration and licensure to practice as architects. The curricular requirements for awarding these degrees must include three components - general studies, professional studies, and electives. Together these three components comprise a liberal education in architecture and ensure that graduates will be technically competent, critical thinkers who are capable of defining multiple career paths within a changing societal context.

No four-year degrees are accredited by NAAB, but the Bachelor of Science in Architectural Studies degree is excellent for those who want a foundation in the field of architecture as preparation for either continued education in a professional degree program or for employment in fields related to architecture.

## Bachelor of Architecture Degree

In addition to the State Minimum Core Requirements (https:// catalog.uark.edu/undergraduatecatalog/gened/stateminimum/), the following course requirements must be met.

Students must complete:
State Minimum Core Requirements including:

## Mathematics

Select one of the following:
MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203)

| MATH 2043 | $\begin{aligned} & \text { Survey of Calculus (ACTS Equivalency }=\text { MATH } \\ & \text { 2203) } \end{aligned}$ |  |
| :---: | :---: | :---: |
| MATH 2053 | Finite Mathematics |  |
| Laboratory Science (8 hours required) |  |  |
| Select four hours from the following: |  |  |
| PHYS 1044 | Physics for Architects I |  |
| PHYS 2013 \& PHYS 201 | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` |  |
| Strongly recommend |  |  |
| Select four hours from the following: |  |  |
| PHYS 1054 | Physics for Architects II |  |
| PHYS 2033 <br> \& PHYS 203 | ```College Physics II (ACTS Equivalency = PHYS 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)``` |  |
| Architectural Design |  |  |
| Completion of the following 94 hour professional program: |  |  |
| ARCH 1015 | Fundamental Design Skills | 5 |
| ARCH 1025 | Fundamental Design Methodology | 5 |
| ARCH 2016 | Architectural Design III | 6 |
| ARCH 2026 | Architectural Design IV | 6 |
| ARCH 3016 | Architectural Design V | 6 |
| ARCH 3026 | Architectural Design VI | 6 |
| ARCH 4016 | Comprehensive Studio | 6 |
| ARCH 4116 | Architectural Design - Rome | 6 |
| ARCH 5016 | Option Studio I | 6 |
| ARCH 5026 | Option Studio II | 6 |
| Architectural Technology |  |  |
| ARCH 1212 | Design Thinking I: Foundations in Technology | 2 |
| ARCH 2113 | Architectural Structures I | 3 |
| ARCH 2123 | Architectural Structures II | 3 |
| ARCH 2132 | Environmental Technology I | 2 |
| ARCH 3143 | Building Materials and Assemblies | 3 |
| ARCH 3253 | Environmental Technology II | 3 |
| ARCH 4152 | Building Systems Integration | 2 |
| History and Theory of Architecture |  |  |
| ARCH 1222 | Design Thinking II: Foundations in History | 2 |
| ARCH 2233 | History of Architecture I | 3 |
| ARCH 2243 | History of Architecture II | 3 |
| ARCH 4433 | History of Architecture III | 3 |
| ARCH 4523 | Architectural Theory | 3 |

## Professional Practice

ARCH 5314 Architectural Professional Practice 4
Completion of 28 hours of electives, as follows:
Professional Electives
Chosen from upper-level courses (courses numbered 3000 or above) taught on the Fayetteville campus or approved study abroad programs in the Fay Jones School of Architecture and Design and allied disciplines.
Free Electives
Total Hours

1. A minimum of 157 hours with a 2.00 cumulative grade-point average at this institution both in all work attempted and in all professional course work attempted is required.
2. Participation for at least one semester in an approved international educational experience. (See Off-Campus Study Requirement (p. 238).)

NOTE: No more than three hours of physical education and/or R.O.T.C. may be counted toward a degree. Courses not acceptable toward degree credit include those of a remedial or orientation nature and whose content are considered to be measurably duplicated elsewhere in the curriculum.

By following the preceding curriculum, students will meet the state minimum core requirements. They must also meet all other university requirements for graduation. See the university Academic Regulations (p. 60).

Sample curriculum for the Bachelor of Architecture degree can be obtained from the school's advising center.

## Professional Licensure Degree Requirement

The National Architectural Accrediting Board (NAAB) only accredits professional programs offering the Bachelor of Architecture, which requires a minimum of five years of study, and the Master of Architecture degrees. These professional degrees are structured to educate those who aspire to registration and licensure to practice as architects. The curricular requirements for awarding these degrees must include three components - general studies, professional studies, and electives. Together these three components comprise a liberal education in architecture and ensure that graduates will be technically competent, critical thinkers who are capable of defining multiple career paths within a changing societal context.

While no four-year degrees are accredited by NAAB, the Bachelor of Science in Architectural Studies degree is excellent for those who want a foundation in the field of architecture as preparation for either continued education in a professional degree program or for employment in fields related to architecture.

## Architecture B.Arch. Ten-Semester Degree Program

The professional program for a Bachelor of Architecture Degree requires 10 semesters of coursework and is not eligible for the EightSemester Degree Completion Program. It also requires admission to the professional program after the third year of classes. However, the following 10 -semester sample plan shows how a first-year student could obtain a Bachelor of Architecture Degree in five years if the student is admitted to the Fall-Spring Architectural Design Studio and subsequently is admitted to the professional program. Students not accepted into the fall studio will begin ARCH 1015 in the first summer session (granted all fall requirements are met) followed by ARCH 1025 in the second summer session.

Students should be aware that PHYS 1044, PHYS 1054 (or an approved alternate laboratory science in the state minimum core) and one of the listed MATH courses must be completed before students can begin second-year courses in Architecture. Transfer students and students who change majors and seek exceptions to the sample curriculum will be reviewed on an individual basis.

Students in the professional program are required to participate in an approved study abroad experience. Students can chose from either a
fall or spring semester of 4th year in Rome, Italy or a summer program (summer prior to 4th or 5th year) in a designated Latin or Central American country. Students can elect to participate in both but only one program can serve as a substitution for one fourth-year studio semester. Should a student participate in both study aboard programs, the additional program would go to professional elective hours.

| First Year |  | Units |
| :--- | ---: | ---: |
| Spring |  |  |
| ARCH 1015 Fundamental Design Skills |  |  |

Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3) ${ }^{2,4}$
ARCH 2026 Architectural Design IV
ARCH 2123 Architectural Structures II
ARCH 2243 History of Architecture II

| Social Sciences State Minimum Core (Satisfies <br> General Education Outcome 3.3) 2, 4 |  |  |
| :---: | :---: | :---: |
| Year Total: | 17 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| ARCH 3016 Architectural Design V | 6 |  |
| ARCH 3143 Building Materials and Assemblies | 3 |  |
| ARCH 4433 History of Architecture III (Satisfies | 3 |  |
| General Education Outcomes 1.2 and 4.2) |  |  |
| Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{2}$, 5, 6 | 3 |  |

ARCH 3026 Architectural Design VI 6
ARCH 3253 Environmental Technology II 3
ARCH 4523 Architectural Theory (Satisfies 3
General Education Outcome 5.1)
Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3)2, 4
Fine Arts or Humanities State Minimum Core 3
(Satisfies General Education Outcome 3.1 or 3.2 ), ${ }^{2}$,
5, 6
Year Total: 15 18

| Fourth Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ARCH 4116 Architectural Design - Rome |  |  |
| or ARCH 4016 Comprehensive Studio | 6 |  |
| (ARCH 4016 Satisfies General Education Outcome |  |  |
| 6.1) | 3 |  |
| ARCH 4653 Architecture of the City | 3 |  |

ARCH 4152 Building Systems Integration 2
ARCH 4016 Comprehensive Studio 6
or ARCH 4116 Architectural Design - Rome
Professional Elective 3
Free Elective 3
Year Total: 12 14

| Fifth Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| ARCH 5016 Option Studio I | 6 |  |
| Free Elective | 3 |  |
| ARCH 5314 Architectural Professional Practice | 4 |  |
| Professional Elective | 3 |  |
| ARCH 5026 Option Studio II |  | 6 |
| Professional Electives |  | 6 |
| Free Elective | 16 | 3 |
| Year Total: |  | 15 |6

Units
SpringFree Elective3

Total Units in Sequence: 157
${ }^{1}$ Students are reviewed at the end of the fall semester and may continue the program if they meet the following criteria: " $C$ " or better
in ARCH 1015, Architectural Design I; "C" or better in PHYS 1044, Physics for Architects I or an approved equivalent; "C" or better in ARCH 1212, Design Thinking I: Foundations in Technology; Maintain a 2.0 GPA. Students who do not meet these criteria will receive a letter and be advised accordingly.
${ }^{2}$ All state minimum core courses must be completed by the end of the third year. Admission to ARCH 4016 is contingent upon admission to the professional program.
${ }^{3}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053, MATH 1213, or MATH 2043.
4 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
5 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013 H.
6
The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
7 If the student participates in the Rome program in the spring semester, the course plan for fourth year is reversed. Students may also choose to participate in the 10 -week Latin American study abroad program in the summer before their 3rd or 4th year. If a student chooses to do both programs, only one studio will count towards the required studio sequence. The additional hours may count towards professional programs.

## Academic Policies

In addition to the requirements of the university, the following academic policies are applicable to all students in the Department of Architecture.

1. Any student receiving a grade of " $D(+/-)$ " in a pre-professional program studio course is subject to a comprehensive review of his/her semester's work by the Design Review Committee. The committee can require the student to retake the studio, prior to advancing to the next studio in sequence, in order to demonstrate competence by achieving a grade of " C " (2.00) or better. A student receiving an " F " in any required design studio must repeat that studio before progressing.
2. Each student's progress through the Design Studio sequence is monitored and governed by the faculty and subject to a design review process.
3. Admission to the Professional Degree Program in the Department of Architecture requires a minimum 2.00 grade-point average in the University Core and each of the sub-disciplines of Architectural History/ Theory, Technology, and Design.
4. Enrollment in any $4^{\text {th }}$ year design studio, including comprehensive design studio (ARCH 4016 ), the Rome Center Design Studio (ARCH 4116), and the Latin American summer studio (ARCH 4126) is contingent upon admission to the professional program in architecture as described above.
5. Successful completion of the upper level studios of the professional degree program (ARCH 4016, ARCH 4116, ARCH 4126, ARCH 5016, and ARCH 5026) requires demonstration of competence as evidenced by achieving a grade of " $C$ " (2.00) or better in those courses. Failure to achieve this minimum standard will require retaking the studio.
6. Any student receiving an "l" in a design studio must complete all work necessary to receive a grade in that studio prior to the first day of the next studio in the student's prescribed sequence. Students carrying a grade of "l" will not be permitted to enroll in subsequent studios.
7. Prior to graduation, a student must present a 2.00 cumulative gradepoint average in all work at this institution.

## Design Review (Grade Appeal) Procedure The Design Review Process

Design Review is a process initiated by a faculty member, the Department Head or a student in order that (1) a faculty member may review a student's design work within a studio course, or (2) a student may appeal grades and/or seek resolution of conflicts with studio faculty in which it is believed that questions of fairness and equity have been raised by the application of the published grading policy of the faculty member. Faculty reviews are predicated upon, but are not limited to, the review of student work that has received a "D" grade or lower.

The Department Head will appoint a Design Review (Appeals) Committee at the beginning of each academic year. The Committee shall be composed of three (3) members of the permanent faculty. Additional or alternate members of the Committee may be appointed at the discretion of the Department Head or the Associate Dean.

Grade appeals initiated by students will occur during the week prior to the start of classes in the subsequent semester. Grade appeals may be filed through petition to the Office of the Associate Dean as soon as the student receives his or her final grade, but no later than the first day of the subsequent semester, (Monday of the week prior to the start of classes). In instances when the appeal concerns a change of an incomplete grade, petition for review should be made as soon as possible after the award of the final grade, and the review will be scheduled at the discretion of the Associate Dean.

## Protocol for the Design Review (Appeal) Process

1. Students are encouraged to meet with the faculty member(s) who has awarded the contested grade prior to filing a grade appeal. The student may request that his/her faculty advisor, a member of the professional advising staff, or the Associate Dean facilitate this meeting.
2. When a Design Review (Appeal) has been scheduled, the student shall exhibit, at the place and time specified by the Associate Dean's office, ALL work assigned and attempted for the studio in the semester under review. Faculty are required to provide the Design Committee with the course syllabus, grading policy, semester assignments, mid-term course assessment, and a written evaluation (a one-page rationale) of the full semester's work at least 48 -hours in advance of the Design Review.
3. The Design Review (Appeal) will consist of separate and independent meetings of the Design Review (Appeal) Committee with the student and the faculty member(s). Following these meetings, the Committee will convene to evaluate the merits of the review (appeal). The Committee is expected to serve as both objective reviewers of the work and as advisers to the student.
4. The Design Review (Appeal) committee will keep minutes of its deliberations. All recommendations from the Committee shall have written explanations and/or justifications, which will be provided to the student, the faculty member, and the Associate Dean, and made part of the student's academic file. The Associate Dean will be responsible for communicating the results of a Review (Appeal) to the student.

## The outcome of the Design Review

1. A recommendation to the faculty member regarding the grade appeal of the student. Action upon that recommendation is undertaken solely at the discretion of the faculty member. No faculty member is compelled to change a grade in response to the recommendation of the Design Review Committee.
2. A requirement for the student to repeat the design studio course and any co-requisite.
3. A recommendation for enrollment in the subsequent studio course, while advising the student of the need to achieve and maintain a cumulative 2.00 (in the studio sequence) for admission to the professional program.
4. An academic advising plan to guide the student toward successful completion of his/her degree requirements or the pursuit of an alternate career path.

All efforts shall be made to achieve clarity and reconciliation, so that the student is able to move forward positively in his/her academic career.

## Requirements for a Minor in History of Architecture and Design

## Pre-requisites for the Minor in History of Architecture and Design (HARD-M):

For Fay Jones School students:


Requirements for the Minor in History of Architecture and Design:
History of Architecture and Design Core Courses ${ }^{1}$
Select three courses from the following:

| ARCH 2233 | History of Architecture I ${ }^{1}$ |
| :---: | :---: |
| ARCH 2243 | History of Architecture II ${ }^{1}$ |
| ARCH 4433 | History of Architecture III |
| ARCH 4523 | Architectural Theory |
| LARC 3413 | History of Landscape Architecture I |
| LARC 4413 | History of Landscape Architecture II |
| LARC 4033 | Landscape Architecture Theory |
| IARD 2883 | History of Interior Design |
| Advanced History of Architecture and Design Courses |  |
| Select 9 credit hours of 3000-plus level courses from the following: |  |
| ARCH 4553 | 2 |
| ARCH 4673 | Modern and Contemporary Rome ${ }^{2}$ |
| ARCH 4853 | Renaissance and Baroque Architecture |
| ARCH 4863 |  |
| ARCH 5493 | History of Urban Form |
| ARCH 4023 | Advanced Architectural Studies (variable topics in history of architecture) ${ }^{3}$ |
| LARC 402V | Special Studies (variable topics in the history of landscape architecture) ${ }^{3}$ |

## Total Hours

1 A Fay Jones School student can present only 9 hours of courses required for the major field of study for credit for the minor. 3000plus courses that are not required for the major can be presented for "advanced" credit in the minor.
2 Only 3 hours of credit earned in Study Abroad courses can be presented for credit toward the History of Architecture and Design minor.
3 A menu of variable topics courses that will qualify for credit toward the History of Architecture and Design Minor is published every semester.

## Faculty

Baker, Emily, M.Arch. (Cranbrook Academy of Art), B.Arch. (University of Arkansas), Assistant Professor, 2017.
Blackwell, Marlon, M.Arch. (Syracuse University), B.Arch. (Auburn University), Distinguished Professor, 1992, 2010.
Boelkins, Jonathan, M.Arch. (Washington University in St. Louis), B.Arch. (University of Arkansas), Instructor, 2017.

Colangelo, Jessica L., M.Arch. (Princeton University), B.Arch. (Rice University), Assistant Professor, 2018.
Del Gesso, Emilio, B.A. (University of Rome), Assistant Professor, 1997.
Elberfeld, Nathaniel, S.M.Arch.S. (Massachusetts Institute of
Technology), M.Arch. (Washington University in St. Louis), B.S. (William and Mary), Visiting Assistant Professor, 2021.
Fitzpatrick, Lynn, M.Arch. (Rice University), B.S. (Cornell University), Teaching Associate Professor, 1999, 2023.
Folan, John, M.Arch (University of Pennsylvania), B.S.Arch (University of Illinois), Professor, 2019.
Goodstein-Murphree, Ethel S., Ph.D. (University of Michigan-Ann Arbor), B.Arch., B.S. (City University of New York), Professor, 1992, 1998.
Herman, Greg, M.Arch. (Rice University), B.Arch. (University of Cincinnati), Associate Professor, 1991, 1998.
Holland, Brian, M.Arch.,(University of Pennsylvania), B.Arch., (California State Polytechnic University, Pomona), Assistant Professor, 2018.
Jacobus, Frank R., M.Arch. (University of Texas at Austin), Associate Professor, 2012, 2015.

Kennedy, David, M.Des. (Harvard University), B.Arch. (Carnegie Mellon University), Assistant Professor, 2021.
Kuhns, Alyssa, M.I.D. (Pratt Institute), B.Arch. (Carnegie Mellon University), Assistant Professor, 2021.
Luoni, Stephen D., M.Arch. (Yale University), B.S.Arch. (Ohio State University), Professor, 2003, 2006.
MacKeith, Peter, M.Arch. (Yale University), B.A. (University of Virginia), Professor, 2014.
Messadi, Tahar, Ed.D., M.Arch. (University of Michigan-Ann Arbor), B.Arch. (Universite de Constantine, Algeria), Associate Professor, 2003, 2009.

Rotolo, Chuck, M.Arch. (Washington University in St. Louis), B.Arch. (Louisiana State University), Assistant Professor, 2005.
Rudzinski, Russell D., M.A. (Washington University in St. Louis), B.Arch. (Syracuse University), Assistant Professor, 2000.
Sexton, Kim, Ph.D., M.A., M.Phil. (Yale University), B.A. (State University of New York at Binghampton), Associate Professor, 1999, 2005.
Shannon, Graham F., M.Arch. (Rice University), B.Arch., B.A. (University of Arkansas), Professor, 1979, 1990.
Terry, Laura, M.F.A. (Savannah State University), B.S. (Auburn University), Associate Professor, 1998, 2007.
Turner, Alison, M.A. (Parsons School of Design), B.A. (Kentucky State University), Assistant Professor, 2008.
Veloso, Pedro, M.Sc. (University of Sao Paulo), B.Arch., B.U.D. (University of Brasilia), Assistant Professor, 2021.

## Courses

ARCH 1003. Basic Course in the Arts: Architecture Lecture. 3 Hours.
A general introduction to architecture, exploring the designed environment, including cities and buildings and their histories, technologies and users, in a holistic manner. May not be presented towards satisfaction of major requirements in either the B.Arch or B.A. in architectural studies degrees. (Typically offered: Fall and Spring)

ARCH 1003H. Honors Basic Course in the Arts: Architecture Lecture. 3 Hours.
A general introduction to architecture, exploring the designed environment, including cities and buildings and their histories, technologies, and users, in a holistic manner. May not be presented towards satisfaction of major requirements in either the B.Arch or B.A. in architectural studies degrees. Prerequisite: Honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 1003.
ARCH 1013. Diversity and Design. 3 Hours.
Explores the reciprocal relationship between diversity and design in America, investigating how race, gender, religion, ability, age, class, and location affect and are affected by the design of media, products, architecture, and cities/regions. Positive and negative effects of diversity and design are discussed. (Typically offered: Summer)

## ARCH 1015. Fundamental Design Skills. 5 Hours.

Fundamental design skills; development of visual and verbal communication skills including observation skills, design technologies, analysis and representation in both 2-dimensions and 3-dimensions through analog and digital tools; creative and critical thinking skills. (Typically offered: Fall and Spring)

## ARCH 1025. Fundamental Design Methodology. 5 Hours.

Fundamental design skills; use of precedents for understanding principles of design and natural and formal ordering systems; design development using both iterative and alternative methods of exploration in both 2-dimensions and 3-dimensions using analog and digital tools; continued development of visual and verbal communication skills. Prerequisite: ARCH 1015. (Typically offered: Spring and Summer)

ARCH 1212. Design Thinking I: Foundations in Technology. 2 Hours.
This course will raise pertinent questions about the role of architectural technology in design through studying the important theories about technology from Vitruvius to contemporary practice and understanding how they have been manifested in built form. (Typically offered: Fall and Summer)
ARCH 1222. Design Thinking II: Foundations in History. 2 Hours.
Explores the role of architectural history in design thinking, introducing divergent canons and traditions in a global context and emphasizing understanding of the relationships among buildings, spaces and places and the social, political and technological circumstances in which the work was theorized, produced, and lived. Prerequisite: ARCH 1212. (Typically offered: Spring and Summer)
ARCH 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

## ARCH 2016. Architectural Design III. 6 Hours.

Introduction of formal principles and strategies used in space making, focusing on the development of plans and sections. Precedents and the understanding of them through analysis and syntheses are used as a means of examining the past and the present while providing a framework from which personal design sensibilities can evolve. Corequisite: ARCH 2113 and ARCH 2132 and ARCH 2233. Prerequisite: ARCH 1025 and ARCH 1222. (Typically offered: Fall)

## ARCH 2026. Architectural Design IV. 6 Hours.

An elaboration of space-making, addressing three-dimensional aspects of formmaking, including the influence of structural systems, articulation of the vertical section, and exterior expression; the role of site as a generator of form; and the overarching importance of technics, including the materiality of space, structure, and light. Corequisite: ARCH 2123 and ARCH 2243. Prerequisite: ARCH 2016 and ARCH 2113 and ARCH 2132 and ARCH 2233. (Typically offered: Spring)

## ARCH 2113. Architectural Structures I. 3 Hours.

Introduction to statics and strength of materials. Building loads are examined as to their effect on the elements of architectural projects. Simple post and beam structures are the focus of this course. Bending, axial, and shear stress are examined in beams and columns. Materials studied include wood, steel, and concrete. Corequisite: ARCH 2016 and ARCH 2132. Prerequisite: ARCH 1212. (Typically offered: Fall)

## ARCH 2113H. Honors Architectural Structures I. 3 Hours.

Introduction to statics and strength of materials. Building loads are examined as to their effect on the elements of architectural projects. Simple post and beam structures are the focus of this course. Bending, axial, and shear stress are examined in beams and columns. Materials studied include wood, steel, and concrete. Corequisite: ARCH 2016 and ARCH 2132. Prerequisite: ARCH 1212. (Typically offered: Fall)
This course is equivalent to ARCH 2113.

## ARCH 2123. Architectural Structures II. 3 Hours.

Introduction to the basic theories of structures, structural behavior, and the design of simple structural systems capable of resisting gravity and lateral forces. Provides a basic understanding of structural behavior, organization of framing systems and location of lateral force resisting elements for building structures and other technical systems. Corequisite: ARCH 2026. Prerequisite: ARCH 2113 and ARCH 2132. (Typically offered: Spring)

## ARCH 2123H. Honors Architectural Structures II. 3 Hours.

Introduction to the basic theories of structures, structural behavior, and the design of simple structural systems capable of resisting gravity and lateral forces. Provides a basic understanding of structural behavior, organization of framing systems and location of lateral force resisting elements for building structures and other technical systems. Corequisite: ARCH 2026. Prerequisite: ARCH 2113, ARCH 2132 and honors candidacy. (Typically offered: Spring)
This course is equivalent to ARCH 2123.

## ARCH 2132. Environmental Technology I. 2 Hours.

Introduces theories and concepts of the building thermal, luminous and sonic environments with focus on solar geometry-shading, climate-thermal stresses, natural ventilation, daylight, sound isolation and noise control. The application of these systems to support the design of an environmentally responsive building and its enclosure is addressed. Corequisite: ARCH 2016 and ARCH 2113. Prerequisite: ARCH 1212. (Typically offered: Fall)

ARCH 2132H. Honors Environmental Technology I. 2 Hours.
Introduces theories and concepts of the building thermal, luminous and sonic environments with focus on solar geometry-shading, climate-thermal stresses, natural ventilation, daylight, sound isolation and noise control. The application of these systems to support the design of an environmentally responsive building and its enclosure is addressed. Corequisite: ARCH 2016 and ARCH 2113. Prerequisite: ARCH 1212. (Typically offered: Fall)
This course is equivalent to ARCH 2132.

## ARCH 2233. History of Architecture I. 3 Hours.

Critical study and analysis of world architecture from ancient times through the Middle Ages, comprising the ancient Americas, Asia, Mesopotamia, and Egypt; Classical, Byzantine, and Islamic architecture and vernacular design; and the early Christian, Romanesque, and Gothic periods. (Typically offered: Fall)

ARCH 2233H. Honors History of Architecture I. 3 Hours.
Critical study and analysis of world architecture from ancient times through the Middle Ages, comprising the ancient Americas, Asia, Mesopotamia, and Egypt; Classical, Byzantine, and Islamic architecture and vernacular design; and the early Christian, Romanesque, and Gothic periods. Prerequisite: Honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 2233.
ARCH 2243. History of Architecture II. 3 Hours.
Critical study and analysis of world architecture from the fifteenth to the midnineteenth centuries. Encompasses early modern Europe (Renaissance, Baroque, and Neoclassical) as well as two or more of the following: colonial New Spain, early modern Japan, and/or early modern Islamic empires in Africa, the Middle East, and Asia. Vernacular American building is surveyed as well as architecture in the nineteenth-century, including Beaux-Arts design and the introduction of industrial materials. Prerequisite for architecture majors only: ARCH 2233. (Typically offered: Spring)

## ARCH 2243H. Honors History of Architecture II. 3 Hours.

Critical study and analysis of world architecture from the fifteenth to the midnineteenth centuries. Encompasses early modern Europe (Renaissance, Baroque, and Neoclassical) as well as two or more of the following: colonial New Spain, early modern Japan, and/or early modern Islamic empires in Africa, the Middle East, and Asia. Vernacular American building is surveyed as well as architecture in the nineteenth-century, including Beaux-Arts design and the introduction of industrial materials. Prerequisite: Architecture majors only. Corequisite: ARCH 2233 and honors candidacy. (Typically offered: Spring)
This course is equivalent to ARCH 2243.
ARCH 2600. Undergraduate Research Assistant. 0 Hours
Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARCH 2993. Art and Culture in Italy. 3 Hours.
The evolution of culture and aesthetics and their immediate relationship with the creation of Italy's masterpieces in art and architecture. Includes site visits and lectures. Offered in the Rome study abroad semester. (Typically offered: Fall and Spring)

## ARCH 3016. Architectural Design V. 6 Hours.

Emphasis on issues of design process, exploration of internal and external determinants of form and the integration of appropriate technologies in design solutions. Corequisite: ARCH 4433. Prerequisite: ARCH 2026 and ARCH 2123 and ARCH 2243. (Typically offered: Fall)

## ARCH 3026. Architectural Design VI. 6 Hours.

Studio-based analysis and design of structural and enclosure systems for buildings with particular emphasis on systems interface and application within the context of design exercises. Investigations of the appropriate use of materials and assemblies for varied programmatic and environmental criteria. Twelve hours of studio each week. Corequisite: ARCH 4523. Prerequisite: ARCH 3016 and ARCH 3143. (Typically offered: Spring)

ARCH 303V. Special Projects. 1-6 Hour.
Individual or group investigation in research, visual communication, history, or design concerning special interests of student or faculty. (Typically offered: Irregular) May be repeated for degree credit

## ARCH 303VH. Honors Special Projects. 1-6 Hour

Individual or group investigation in research, visual communication, history, or design concerning special interests of student or faculty. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit. This course is equivalent to ARCH 303V.

ARCH 3143. Building Materials and Assemblies. 3 Hours.
Introduction and comprehensive survey of primary building materials and methods of assembly: their history, properties, use and configuration - both traditional and contemporary, in the service of building construction; their impact on the form, expression and performance of building structures and envelopes. Prerequisite: ARCH 2132, ARCH 2113 and ARCH 2123. (Typically offered: Fall)

## ARCH 3253. Environmental Technology II. 3 Hours.

Covers theoretical foundations and applications of building environmental systems: HVAC with duct layout and controls, indoor air quality, electric lighting, power, acoustics, fire safety and egress, and water and waste. The important role of such systems in the design of buildings is examined through a series of small projects assignments. Prerequisite: ARCH 3016 and ARCH 3143. (Typically offered: Spring)

## ARCH 3600. Undergraduate Research Assistant. 0 Hours.

Undergraduate research. (Typically offered: Fall, Spring and Summer)

## ARCH 4016. Comprehensive Studio. 6 Hours.

Emphasis on issues of typology, context and technological suitability as sources of theoretical and developmental responses. Corequisite: ARCH 4152. Prerequisite: ARCH 3026. (Typically offered: Fall)

ARCH 4023. Advanced Architectural Studies. 3 Hours.
Advanced seminars in subjects to special interest to students and faculty. (Typically offered: Fall and Spring) May be repeated for degree credit.

ARCH 4023H. Honors Advanced Architectural Studies. 3 Hours.
Advanced seminars in subjects to special interest to students and faculty. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring) May be repeated for degree credit.
This course is equivalent to ARCH 4023.

## ARCH 4116. Architectural Design - Rome. 6 Hours.

Investigation of complex design problems in the context of the city of Rome, utilizing advanced issues in architectural design and planning. Prerequisite: ARCH 3026 or ARCH 4016. (Typically offered: Fall and Spring)

ARCH 4126. Architectural Design Latin America. 6 Hours.
Introduces a complex social and physical urban condition through a process of formal analysis and design executed in a designated country augmented by an intense graphic investigation of urban form encountered through related field trips to the distinct cultural and geographic regions. Prerequisite: ARCH 3026 or ARCH 4016. (Typically offered: Summer)

## ARCH 4152. Building Systems Integration. 2 Hours.

Promotes the synthesis of building technologies, systems selection and integration in the resolution of a building design. Specifically, the student demonstrates knowledge in the ability to generate digital and analog graphic resolutions highlighting the design response of material, structural and environmental systems in a building. Corequisite: ARCH 4016. Prerequisite: ARCH 2113 and ARCH 2123 and ARCH 2132 and ARCH 3143 and ARCH 3253. (Typically offered: Fall and Spring)
ARCH 4152H. Honors Building Systems Integration. 2 Hours.
Promotes the synthesis of building technologies, systems selection and integration in the resolution of a building design. Specifically, the student demonstrates knowledge in the ability to generate digital and analog graphic resolutions highlighting the design response of material, structural and environmental systems in a building. Corequisite: ARCH 4016. Prerequisite: ARCH 2113 and ARCH 2123 and ARCH 2132 and ARCH 3143 and ARCH 3253. (Typically offered: Fall and Spring) This course is equivalent to ARCH 4152.
ARCH 4433. History of Architecture III. 3 Hours.
Critical study and analysis of the history and theories of modern architecture from the mid-nineteenth century to the present. Prerequisite: ARCH 2233 and ARCH 2243 or IARD 2883. (Typically offered: Fall)

## ARCH 4433H. Honors History of Architecture III. 3 Hours.

Critical study and analysis of the history and theories of modern architecture from the mid-nineteenth century to the present. Prerequisite: ARCH 2233, ARCH 2243 and honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 4433.
ARCH 4523. Architectural Theory. 3 Hours.
Introduction to the lexicon of architecture and the ideas and ideologies that provide the conceptual and critical infrastructure for the discipline. Reading and discussion of representative theory texts. Emphasis on twentieth century modernism and postmodernism, including contemporary speculations on possible and emerging forms of practice after theory. Prerequisite: ARCH 2233, ARCH 2243, and ARCH 4433. (Typically offered: Spring)
ARCH 4523H. Honors Architectural Theory. 3 Hours.
Introduction to architectural theories and their relationship to modern historiography. Case studies are employed for the critical evaluation of significant texts and the discernment of concepts embedded in textual structures. Reading theory through established historical categories establishes critical insight to the original deployment, negation and resurfacing of architectural theories. Prerequisite: ARCH 2233, ARCH 2243, and ARCH 4433. (Typically offered: Spring) This course is equivalent to ARCH 4523.

ARCH 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

## ARCH 4653. Architecture of the City. 3 Hours.

Analysis of Rome's urban form and historical and theoretical information in support of the students' experience. Includes site visits and lectures. Offered in the Rome study abroad semester. (Typically offered: Fall and Spring)

ARCH 4653H. Honors Architecture of the City. 3 Hours.
Analysis of Rome's urban form and historical and theoretical information in support of the students' experience. Includes site visits and lectures. Offered in the Rome study abroad semester. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ARCH 4653.
ARCH 4673. Modern and Contemporary Rome. 3 Hours.
Explores different local conditions that determine main architectural changes that have taken place in Rome during the last century of its urban history. Important works, leading figures and major concepts in contemporary European architecture will be described to introduce examples of modern and contemporary architecture in Rome. (Typically offered: Fall and Spring)

ARCH 4673H. Honors Modern and Contemporary Rome. 3 Hours.
Explores different local conditions that determine main architectural changes that have taken place in Rome during the last century of its urban history. Important works, leading figures and major concepts in contemporary European architecture will be described to introduce examples of modern and contemporary architecture in Rome. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to ARCH 4673.
ARCH 4853. Renaissance and Baroque Architecture. 3 Hours.
Study of Renaissance and Baroque architecture in Europe and the New World from 1400 to 1700 . With reference to an array of texts, drawings, and the edifices themselves, this course charts the evolution of a commanding Western architectural tradition. Renaissance and Baroque -- with close attention to the social, humanistic, and religious contexts that produced it. Prerequisite: ARCH 4433. (Typically offered: Irregular)
This course is equivalent to ARHS 4753.
ARCH 4863H. Honors St. Peter's and the Vatican. 3 Hours.
Examines art and architectural history of St. Peter's Basilica in Rome from antiquity to present. Emphasis on the Renaissance/Baroque church and its early Christian predecessor. Students consider the impact of devotional practices and papal politics on the church, the Vatican Palace, and its renown artworks including the Sistine ceiling. Prerequisite: ARCH 2233 or ARCH 2233H, and ARCH 2243 or ARCH 2243H and ARCH 4433 or ARCH 4433H. (Typically offered: Irregular)
This course is equivalent to ARHS 4733.
ARCH 4933. Introduction to Historic Preservation. 3 Hours.
Introduces theoretical, methodological and practical issues of architectural preservation in Europe and, more specifically, in Italy. Addresses history and theory of restoration, basic principles of architectural preservation and methodology in the study and praxis of preservation applied to architecture and the issues posed by the preservation of modern architecture. (Typically offered: Fall and Spring)

## ARCH 5016. Option Studio I. 6 Hours.

Project development dependent upon the synthesis of knowledge and application of critical thinking addressing architectural issues at multiple scales. Prerequisite: ARCH 4016, or ARCH 4116, or ARCH 4126. (Typically offered: Fall) May be repeated for degree credit.

## ARCH 5026. Option Studio II. 6 Hours.

Project resolution including demonstrated skill in generating design ideas supported by clear understanding of issues resulting in comprehensive development and presentation of architectural issues at multiple scales. (Typically offered: Spring) May be repeated for degree credit.

## ARCH 5314. Architectural Professional Practice. 4 Hours.

Study of role and responsibility of the architect, owner, and contractor relationships; professional ethics; organization of the architect's office; contracts and other documents; risk management strategies; and the preparation of the technical specifications and bidding documents of the Project Manual. Prerequisite: ARCH 4016 or ARCH 4116 or ARCH 4126. (Typically offered: Fall)

## ARCH 5493. History of Urban Form. 3 Hours.

The study of pre-industrial urban and architectural design strategies in cities from the Classical through the Baroque eras and their rediscovery in the late 20th century, providing the student with a designer's understanding of a broad range of exemplary urban spaces and the buildings that shape them. Prerequisite: ARCH 2233 and ARCH 2243 and ARCH 4433. (Typically offered: Irregular)

## ARCH 5493H. Honors History of Urban Form. 3 Hours.

The study of pre-industrial urban and architectural design strategies in cities from the Classical through the Baroque eras and their rediscovery in the late 20th century, providing the student with a designer's understanding of a broad range of exemplary urban spaces and the buildings that shape them. Prerequisite: ARCH 2233 and ARCH 2243 and ARCH 4433. (Typically offered: Irregular)
This course is equivalent to ARCH 5493.

ARCH 5953. Preservation Practice Field Trip. 3 Hours.
Intensive field study of a domestic or foreign site of significant or precedentsetting preservation activity, through a field trip and a course of pre-travel lectures. (Intersessions) Prerequisite: ARCH 4943 or instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## Interior Architecture and Design (IARD)

Carl Matthews, Department Head
Vol Walker Hall, room 111
479-575-7599
The Interior Architecture and Design faculty is composed of wellqualified educators and practitioners who foster an attitude of inquiry and learning based on their individual skills and interests. A professional advisory board supports the program and serves as external critics/ jurors. Intellectual development of students is stimulated and leadership qualities enhanced throughout the four-year curriculum. The Interior Design Organization (IDO) and American Society of Interior Designers Student Chapter (ASID) allow for interaction of students with professionals in interior design and allied professions. Both faculty and students participate in professional design association activities.

The studio sequence increases in complexity throughout the curriculum. The rigor of the program requires a significant commitment of time and energy. Students can expect to spend much time independent of studio classes to complete projects.

To promote a broader perspective of design, students are required to participate in a study abroad experience. In addition, both overnight and day field trips are required for studio courses.

## Council for Interior Design Accreditation

The Bachelor of Interior Architecture and Design (B.I.A.D.) degree is accredited by the Council for Interior Design Accreditation (CIDA). CIDA, an independent, nonprofit accrediting organization, is the sole agency authorized to accredit professional degree programs in interior design. To ensure conformance with educational standards, programs must seek reaccreditation every six years. The program is the oldest accredited interior architecture and design program in the state of Arkansas.

The University of Arkansas Fay Jones School of Architecture and Design's department of Interior Architecture and Design offers the following CIDA-accredited degree program:

- B.I.A.D. (120 undergraduate credits)

The last accreditation visit for the Interior Design program was conducted in March 2018; the next site visit is spring 2024.

## Requirements for B.I.A.D. in Interior Architecture and Design

Interior Architecture and Design Program Admissions: Students are admitted to the first year of the interior architecture and design curriculum based on criteria established by the university and by the program. They are evaluated each semester by grades in lecture courses and by grades for performance and progress in the design studio sequence.

Admission to the Professional Program for Interior Architecture and Design

The interior architecture and design program offers prospective students the opportunity to prepare for professional practice or related endeavors. With this opportunity comes a responsibility for demonstrating a commitment to personal growth and success in the professional program.

At the completion of IARD 2804 Interior Design Studio III in the interior architecture and design curriculum, students will be evaluated for admission into the professional program on the basis of academic performance in the university core and the required interior architecture and design curriculum. Admission is based on available desks and requires a majority vote of a departmental admissions committee. Students admitted to the professional program will continue in the established studio curriculum sequence and are to complete the final five studios at the school. Students with less than a cumulative 2.5 GPA in IARD and ARCH courses will not be admitted to the professional program. Students who are not admitted are encouraged to consider alternative programs in the school and the university.

## Requirements for Interior Architecture and Design

As part of the 35 -hour State Minimum Core, the department recommends the following:

## Social Sciences:

Select 3 hours from the following Economic courses:

| ECON 2013 | Principles of Macroeconomics (ACTS Equivalency <br> $=$ |
| :--- | :--- |
| ECON 2103) 2023 | Principles of Microeconomics (ACTS Equivalency |
|  | $=$ ECON 2203) |
| ECON 2143 | Basic Economics: Theory and Practice |

Select 6 hours from the following:

| ANTH 1023 | Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013) |
| :---: | :---: |
| HDFS 1403 | Life Span Development |
| SOCI 2013 | General Sociology (ACTS Equivalency $=\mathrm{SOCI}$ 1013) |
| GEOS 1123 | Human Geography (ACTS Equivalency = GEOG 1113) |
| PSYC 2003 | General Psychology (ACTS Equivalency = PSYC 1103) |
| Professional Core Requirements (63 hours) |  |
| ARCH 1212 | Design Thinking I: Foundations in Technology |
| ARCH 1222 | Design Thinking II: Foundations in History |
| ARCH 4433 | History of Architecture III |
| IARD 1035 | Fundamental Design Skills |
| IARD 1045 | Fundamental Design Methodology |
| IARD 2723 | Digital Media in Design |
| IARD 2804 | Interior Design Studio III |
| IARD 2814 | Interior Design Studio IV |
| IARD 2823 | Interior Design Materials and Assemblies |
| IARD 2883 | History of Interior Design |
| IARD 3805 | Interior Design Studio V |
| IARD 3815 | Interior Design Studio VI |
| IARD 3833 | Building Systems for Interior Design |
| IARD 3843 | Lighting Systems |
| IARD 4805 | Interior Design Studio VII |
| IARD 4813 | Human Factors for Design |



## Academic Policies - Department of Interior Architecture and Design

The following academic policies, beyond the requirements of the university, are applicable to all students in the Interior Architecture and Design Program.

1. Successful completion of all IDES coursework requires demonstration of competence as evidenced by achieving a grade of " C " or better in those courses. Failure to achieve this minimum standard will require retaking the studio or lecture course.
2. Each student's progress through the design studio sequence is monitored and governed by the faculty and subject to a Design Review process.
3. Any student receiving an "l" in a design studio must complete all work necessary to receive a grade prior to the first day of the next studio in the student's prescribed sequence to be eligible to enroll in that studio.
4. Prior to graduation, a student must present a 2.00 cumulative grade point average at this institution in all work attempted including the university state minimum core, electives and in each interior architecture and design course.

## Design Review Procedure - Department of Interior Architecture and Design

Design Review is a process initiated by a faculty member, department head, or by a student. The committee composed of interior architecture and design faculty may review a student's design work within a studio course as well as other professional courses. The review process may be used by students to appeal grades and to seek resolution of conflicts with faculty when there are questions of fairness and equity in grading. Grade appeals initiated by students will occur during the week prior to the start of class in the subsequent semester. Petitions for this review must be made through the advising center prior to the scheduled meeting of the Design Review Committee. Grade appeals may be filed as soon as the student receives his or her final grade. In all cases, the student shall exhibit, at the place and time specified by the Design Review Committee, ALL work assigned and attempted for the course in the semester under review. Faculty are required to provide appropriate documentation including, but not limited to, the course syllabus, grading policy, and semester assignments. In the case of an appeal, the appeal will be presented to the entire Interior Architecture and Design faculty for consideration and may require the students to present their case in person.

The outcome of the Design Review process may include:

1. A recommendation to the faculty member regarding the grade appeal of the student.
2. A requirement for the student to repeat the design studio course or lecture course.
3. A recommendation for enrollment in the subsequent studio course, while advising the student of the need to achieve and maintain a cumulative 2.00 (in the studio sequence) to progress in the program.

Internship Requirement: In addition to the requirements listed in the nine-semester degree program, a supervised 200-hour internship experience is required for graduation. The one-credit hour summer internship generally occurs in the summer before the fourth year. Students have been placed in interior design firms, architectural offices, Main Street programs, governmental agencies, hospitality and casino design firms, and a wide range of other allied industries. Geographically, students have completed internships in Los Angeles, San Francisco, Seattle, New York, Las Vegas, Washington, D.C., Denver, Dallas, Chicago, Kansas City, and other major cities in the United States, as well as international locations such as London and Edinburgh.

## Interior Architecture and Design B.I.A.D. Nine-Semester Degree Plan

The Bachelor of Interior Architecture and Design can be completed in nine semesters that includes a summer internship. The one-credit hour summer internship occurs in the summer before fourth year. The study abroad requirement typically occurs in the summer before third year. Please see the Fay Jones School of Architecture Advising Center for specific core course requirements and elective options. Go to the state minimum core (p.81) and the general education (p.72) requirements for more details.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: | ---: |
| Summer |  |  |


| ENGL 1013 Composition I (ACTS | 3 |  |  |
| :---: | :---: | :---: | :---: |
| Equivalency = ENGL 1013) (Satisfies |  |  |  |
| General Education Outcome 1.1) |  |  |  |
| MATH 1203 College Algebra (ACTS | 3 |  |  |
| Equivalency = MATH 1103) (Satisfies |  |  |  |
| General Education Outcome 2.1) |  |  |  |
| UNIV 1001 University Perspectives |  |  |  |
| IARD 1045 Fundamental Design |  | 5 |  |
| Methodology |  |  |  |
| ARCH 1222 Design Thinking II: Foundations in History |  | 2 |  |
| ENGL 1023 Composition II (ACTS |  | 3 |  |
| Equivalency = ENGL 1023) (Satisfies |  |  |  |
| General Education Outcome 1.1) |  |  |  |
| Fine Arts or Humanities State Minimum |  | 3 |  |
| Core Requirement (Satisfies General Education Outcome 3.1 or 3.21,2 |  |  |  |
| Social Sciences State Minimum |  | 3 |  |
| Core Requirement (see options from |  |  |  |
| Program Requirements listed above) |  |  |  |
| (Satisfies General Education Outcome |  |  |  |
| 3.3) |  |  |  |
| Year Total: | 13 | 16 |  |
| Second Year |  |  | Units |
|  | Fall | Spring | Summer |
| IARD 2804 Interior Design Studio III | 4 |  |  |
| IARD 2723 Digital Media in Design | 3 |  |  |
| IARD 2823 Interior Design Materials and Assemblies | 3 |  |  |
| Social Sciences State Minimum | 3 |  |  |
| Core Requirement (see options from |  |  |  |
| Program Requirements listed above) |  |  |  |
| (Satisfies General Education Outcome |  |  |  |
| 3.3) |  |  |  |
| ARTS or ARHS Elective | 3 |  |  |
| IARD 2814 Interior Design Studio IV |  | 4 |  |
| IARD 2883 History of Interior Design |  | 3 |  |
| IARD 3843 Lighting Systems |  | 3 |  |
| Select one of the following (Satisfies |  | 3 |  |
| General Education Outcome 4.2): |  |  |  |
| HIST 2003 History of the American |  |  |  |
| People to 1877 (ACTS Equivalency = HIST 2113) |  |  |  |
| HIST 2013 History of the American |  |  |  |
| People, 1877 to Present (ACTS |  |  |  |
| Equivalency = HIST 2123) |  |  |  |
| PLSC 2003 American National |  |  |  |
| Government (ACTS Equivalency = PLSC 2003) |  |  |  |
| Interior Design Study Abroad |  |  | 3 |
| Year Total: | 16 | 13 | 3 |


| Third Year | Fall | SpringUnits <br> Summer |  |
| :--- | ---: | ---: | ---: |
| IARD 3805 Interior Design Studio V | 5 |  |  |



## Minor in Interior Architecture and Design

All students in the Fay Jones School of Architecture and Design seeking an Interior Architecture and Design minor are required to complete 17 hours in the following courses or their equivalencies:

| IARD 2823 | Interior Design Materials and Assemblies | 3 |
| :--- | :--- | :--- |
| IARD 2883 | History of Interior Design | 3 |
| IARD 3843 | Lighting Systems | 3 |
| IARD 4813 | Human Factors for Design | 3 |
| IARD 4805 | Interior Design Studio VII | 5 |
| or IARD 4845 | Interior Design Studio VIII |  |

## Total Hours

## Requirements for Interior Architecture and Design

As part of the 35 -hour State Minimum Core, the department recommends the following:

## Social Sciences:

Select 3 hours from the following Economic courses:
\(\left.\begin{array}{ll}ECON 2013 \& Principles of Macroeconomics (ACTS Equivalency <br>

= ECON 2103)\end{array}\right]\)| ECON 2023 | Principles of Microeconomics (ACTS Equivalency |
| :--- | :--- |
|  | $=$ ECON 2203) |

Select 6 hours from the following:

| ANTH 1023 | Introduction to Cultural Anthropology (ACTS <br> Equivalency = ANTH 2013) |
| :--- | :--- |
| HDFS 1403 | Life Span Development |
| SOCI 2013 | General Sociology (ACTS Equivalency = SOCI <br> 1013) |

GEOS 1123 Human Geography (ACTS Equivalency = GEOG 1113)

PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)

Professional Core Requirements (63 hours)

| ARCH 1212 | Design Thinking I: Foundations in Technology | 2 |
| :--- | :--- | :--- |
| ARCH 1222 | Design Thinking II: Foundations in History | 2 |
| ARCH 4433 | History of Architecture III | 3 |
| IARD 1035 | Fundamental Design Skills | 5 |
| IARD 1045 | Fundamental Design Methodology | 5 |
| IARD 2723 | Digital Media in Design | 3 |
| IARD 2804 | Interior Design Studio III | 4 |
| IARD 2814 | Interior Design Studio IV | 4 |
| IARD 2823 | Interior Design Materials and Assemblies | 3 |
| IARD 2883 | History of Interior Design | 3 |
| IARD 3805 | Interior Design Studio V | 5 |
| IARD 3815 | Interior Design Studio VI | 5 |
| IARD 3833 | Building Systems for Interior Design | 3 |
| IARD 3843 | Lighting Systems | 3 |
| IARD 4805 | Interior Design Studio VII | 5 |
| IARD 4813 | Human Factors for Design | 3 |
| IARD 4845 | Interior Design Studio VIII | 5 |
| Study Abroad Requirement | $\mathbf{3}$ |  |
| Internship ${ }^{\text { }}$ |  | $\mathbf{1}$ |

IARD 4831 Internship for Interior Design
Professional Practice 3
IARD 4823 Professional Practice for Interior Design
Art Elective
Choose 3 hours from the following:
ARHS 2913 Art History Survey I (ACTS Equivalency = ARTA 2003)

ARHS 2923 Art History Survey II (ACTS Equivalency = ARTA 2103)

ARTS 1013 Drawing for Non-majors: Observation
ARTS 1313 Two-Dimensional Design
ARTS 1323 Three-Dimensional Design
Business Courses
Choose 6 hours from the following courses:
FINN 3003 Personal Financial Management
FINN 3933 Real Estate Principles
FINN 4413 Real Estate Appraisal
FINN 4433 Real Estate Finance and Investment
MKTG 3433 Introduction to Marketing
MKTG 3553 Consumer Behavior
Professional Electives 6

Total Hours
${ }^{1}$ Internship Requirement: In addition to other requirements, a supervised 200 -hour internship experience is required for graduation. The one-credit hour summer internship generally occurs in the summer before the fourth year. Students have been placed in interior design firms, architectural offices, Main Street programs, governmental agencies, hospitality and casino design firms, and a wide range of other allied industries.

## Academic Policies - Department of Interior Architecture and Design

The following academic policies, beyond the requirements of the university, are applicable to all students in the Interior Architecture and Design Program.

1. Successful completion of all IDES coursework requires demonstration of competence as evidenced by achieving a grade of "C" or better in those courses. Failure to achieve this minimum standard will require retaking the studio or lecture course.
2. Each student's progress through the design studio sequence is monitored and governed by the faculty and subject to a Design Review process.
3. Any student receiving an "I" in a design studio must complete all work necessary to receive a grade prior to the first day of the next studio in the student's prescribed sequence to be eligible to enroll in that studio.
4. Prior to graduation, a student must present a 2.00 cumulative grade point average at this institution in all work attempted including the university state minimum core, electives and in each interior architecture and design course.

## Design Review Procedure - Department of Interior Architecture and Design

Design Review is a process initiated by a faculty member, department head, or by a student. The committee composed of interior architecture and design faculty may review a student's design work within a studio course as well as other professional courses. The review process may be used by students to appeal grades and to seek resolution of conflicts with faculty when there are questions of fairness and equity in grading. Grade appeals initiated by students will occur during the week prior to the start of class in the subsequent semester. Petitions for this review must be made through the advising center prior to the scheduled meeting of the Design Review Committee. Grade appeals may be filed as soon as the student receives his or her final grade. In all cases, the student shall exhibit, at the place and time specified by the Design Review Committee, ALL work assigned and attempted for the course in the semester under review. Faculty are required to provide appropriate documentation including, but not limited to, the course syllabus, grading policy, and semester assignments. In the case of an appeal, the appeal will be presented to the entire Interior Architecture and Design faculty for consideration and may require the students to present their case in person.

The outcome of the Design Review process may include:

1. A recommendation to the faculty member regarding the grade appeal of the student.
2. A requirement for the student to repeat the design studio course or lecture course.
3. A recommendation for enrollment in the subsequent studio course, while advising the student of the need to achieve and maintain a cumulative 2.00 (in the studio sequence) to progress in the program.

## Faculty

Furlong, Kimberley J., M.Arch. (U. Texas at Austin), B.F.A. (Pratt Institute), Associate Professor, 2013, 2018.
Huh, Michelle Boyong, M.I.D. (University at Texas, Austin), B.Arch. (Korea University), Assistant Professor, 2022.
Lee, Jisun, Ph.D. (Yonsei University), M.S. (Yonsei University), B.S. (Yonsei University), Assistant Professor, 2020.
Matthews, Carl W., M.S. (Pratt Institute), Professor, 2012.
Miri, Marjan, M.I.D. (University of Texas, Austin), M.U.D. (Science \& Research University, Hamedan, Iran), Assistant Professor, 2021.
Park, Jinoh, Ph.D. (North Carolina State University), E.M.B.A. (Aalto University), M.B.A. (Seoul School of Integrated Sciences \& Technology), B.S. (Hanyang University), Assistant Professor, 2021.

Sharpless, Charles, M.Arch. (Harvard University), B.Arch. (Rice
University), Assistant Professor, 2020.
Tracy, Torrey, M.Arch., B.A. (University of Nevada, Las Vegas), Assistant Professor, 2019.
Tucci, Jake, M.S (University of North Carolina at Greensboro), B.S.
(North Carolina State University), Assistant Professor, 2019.
Webb, Jennifer D., Ph.D. (Oklahoma State University), M.S., B.S.
(University of Tennessee), Associate Professor, 1999, 2005.

## Courses

IARD 1035. Fundamental Design Skills. 5 Hours.
Fundamental design skills; development of visual and verbal communication skills including observation skills, design technologies, analysis and representation in both 2-dimensions and 3-dimensions through analog and digital tools; creative and critical thinking skills. (Typically offered: Fall and Summer)

IARD 1045. Fundamental Design Methodology. 5 Hours.
Fundamental design skills; use of precedents for understanding principles of design and natural and formal ordering systems; design development using both iterative and alternative methods of exploration in 2-dimensions and 3-dimensions using analog and digital tools; continued development of visual and verbal communication skills. Prerequisite: IARD 1035. (Typically offered: Spring and Summer)

IARD 2723. Digital Media in Design. 3 Hours.
Develops conceptual and practical knowledge of digital techniques on architectural and interior design production. The aim is to provide a foundation in digital modeling, drawings, renderings, and an introduction to digital fabrication. Prerequisite: Interior Design majors only. (Typically offered: Fall)

IARD 2804. Interior Design Studio III. 4 Hours.
An introduction to interior space articulation and the creation of small scale spaces. Components of various presentation methods and formats. Overnight travel requires additional fees. Prerequisite: IARD 1045. (Typically offered: Fall) May be repeated for degree credit.

IARD 2814. Interior Design Studio IV. 4 Hours.
Studio activities with emphasis on conceptualization, design theory and applications, ideation, programming and computer application. Overnight travel required.
Prerequisite: IARD 2804 and IARD 2723. (Typically offered: Spring) May be repeated for degree credit.

IARD 2823. Interior Design Materials and Assemblies. 3 Hours.
A study of materials, resources and assemblies used in interior spaces. (Typically offered: Fall)

IARD 2823H. Honors Interior Design Materials and Assemblies. 3 Hours.
A study of materials, resources and assemblies used in designing interior spaces. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to IARD 2823.
IARD 2883. History of Interior Design. 3 Hours.
Study of historic interiors and furniture from antiquity through the present day. Identification of interior styles and furniture of these eras is emphasized. (Typically offered: Spring)

## IARD 2883H. Honors History of Interior Design. 3 Hours.

Study of historic interiors and furniture from antiquity through the present day. Identification of interior styles and furniture of these eras is emphasized. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to IARD 2883.
IARD 3805. Interior Design Studio V. 5 Hours.
Emphasis on residential and/or commercial building systems. Continued development of presentation skills including hand and computer-based techniques. Prerequisite: IARD 2814. (Typically offered: Fall)
IARD 3815. Interior Design Studio VI. 5 Hours.
Advanced studio problems involving larger-scale interior spaces and contract documents for public use. Overnight field trip requires additional fees. Prerequisite: IARD 3805. (Typically offered: Spring)
IARD 3833. Building Systems for Interior Design. 3 Hours.
A survey course of building systems that addresses the design implications of heating/air conditioning/ventilation, plumbing, power, data/voice/and telecommunications, fire protection, security, and acoustical systems on building interiors. Performance characteristics and sustainable technologies will be addressed. Prerequisite: IARD 2814 and IARD 2823. (Typically offered: Fall)

IARD 3833H. Honors Building Systems for Interior Design. 3 Hours.
A survey course of building systems that addresses the design implications of heating/air conditioning/ventilation, plumbing, power, data/voice/and telecommunications, fire protection, security, and acoustical systems on building interiors. Performance characteristics and sustainable technologies will be addressed. Prerequisite: IARD 2814 and IARD 2823 and honors standing. (Typically offered: Fall)
This course is equivalent to IARD 3833.
IARD 3843. Lighting Systems. 3 Hours.
Exploration of interior design applications of lighting systems. (Typically offered: Spring)
IARD 3843H. Honors Lighting Systems. 3 Hours.
Exploration of interior design applications of lighting systems. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to IARD 3843.
IARD 465V. Special Topics. 1-6 Hour.
A focused study of specialized topics in interior design. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

IARD 4805. Interior Design Studio VII. 5 Hours.
Comprehensive design studio synthesizing design skills, knowledge and critical thinking skills with emphasis on research, programming and process. Prerequisite: IARD 3815 and IARD 4823. (Typically offered: Fall) May be repeated for degree credit.
IARD 4813. Human Factors for Design. 3 Hours.
Emphasis is given to human behavior as applied to the design disciplines. Types of interior spaces, environmental effects on behavior, ergonomics, and design needs of special groups, and human factors programs are studied. Lecture 3 hours per week. Prerequisite: Completion of any two of the following: ANTH 1023, SOCI 2013, PSYC 2003, HDFS 1403 or GEOS 1123. (Typically offered: Spring)
IARD 4813H. Honors Human Factors for Design. 3 Hours.
Emphasis is given to human behavior as applied to interior design. Types of interior spaces, environmental effects on behavior, ergonomics, interior design needs of special groups, and human factors programs are studied. Lecture 3 hours per week. Prerequisite: Honors standing and completion of any two of the following: ANTH 1023, SOCI 2013, PSYC 2003, HDFS 1403 or GEOS 1123. (Typically offered: Fall)
This course is equivalent to IARD 4813.
IARD 4823. Professional Practice for Interior Design. 3 Hours.
General procedures for operating and maintaining an interior design business. Business documentation, communication, professional responsibilities and ethics. Corequisite: IARD 3805. (Typically offered: Fall)

IARD 4823H. Honors Professional Practice for Interior Design. 3 Hours. General procedures for operating and maintaining an interior design business. Business documentation, communication, professional responsibilities and ethics. Corequisite: IARD 3805 and honors standing. (Typically offered: Fall)
This course is equivalent to IARD 4823.

## IARD 4831. Internship for Interior Design. 1 Hour.

Supervised work experience and observation of operations/management procedures in approved design, government or service business. Prerequisite: IARD 3815. (Typically offered: Summer)

## IARD 4845. Interior Design Studio VIII. 5 Hours.

Comprehensive design studio synthesizing design skills, knowledge, and critical thinking skills developed in previous design studios, including ideation, programming, construction, and human factors. Prerequisite: IARD 4805. (Typically offered: Spring) May be repeated for degree credit.

## IARD 485V. Design Tours. 1-3 Hour.

Domestic and international study tours of a variety of design locations that contribute to the body of knowledge. Prerequisite: IARD 2814. (Typically offered: Irregular) May be repeated for degree credit.

## Landscape Architecture (LARC)

Ken McCown
Department Head
Vol Walker Hall
479-575-4907
Department of Landscape Architecture Website (http:// architecture.uark.edu/academics/landscape-architecture/)

The Department of Landscape Architecture offers two degrees, the Bachelor of Landscape Architecture described on this page and the Bachelor of Science in Landscape Architectural Studies (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/ fayjonesschoolofarchitecture/landscapearchitecturalstudies/). The department also participates in the administration of the planning and planting design minors on campus. With sustainability administered through the Fay Jones School, these degrees and minors offer students a robust package to develop the tools and acumen necessary to have an impact on making sustainable and resilient places for people and the planet.

The Department of Landscape Architecture focuses on design and advocacy. The faculty in our department believe in the power of design and want to help our students and stakeholders become effective advocates to make positive and lasting change as collaborators and leaders.

The Bachelor of Landscape Architecture prepares students to practice landscape architecture as licensed professionals. Landscape Architecture is the sustainability profession, with practitioners providing meaningful solutions to such pressing topics as, climate change and resilience, clean water and air, health wellness and aging, and habitat and loss of it due to cataclysmic events such as wildfire.

The practice of landscape architecture ranges across the geographic spectrum from urban to suburban, rural and ecosystems. Landscape architects appropriately use systems thinking in the planning and design of systems, and design thinking at many scales, including of course to make spaces and places people inhabit outside. Planning and analysis projects for systems include habitat and conservation, watersheds, and infrastructure such as food and agriculture, energy, and transportation.
Design thinking enables landscape architects to create parks, plazas, greenways, community gardens, green alleyways, green roofs and walls, and innovative and natural stormwater treatment in urban sites and places.

Sustainable and resilient landscapes for residential areas are also a part of practice, ranging from high-density urban housing to rural landscapes. Cultural landscapes and historic, designed sites are also in the domain of landscape architectural practice. These represent an important body of work for practitioners. From the broad list above, opportunities are legion to use planning, design and design thinking to make better places for all.

The Bachelor of Science in Landscape Architectural Studies serves students who are interested in the design disciplines, but not professional practice. This four-year program suits students who seek careers in allied planning and design disciplines, including urban and regional planning, historic preservation, environmental law, and architectural history. This
degree is an excellent platform for students looking forward to graduate education in professions such as architecture, landscape architecture, geography, and urban and regional planning.

## Landscape Architecture - Landscape Architectural Accreditation Board

The Landscape Architecture Accreditation Board (LAAB) is the sole agency authorized to accredit U.S. professional degree programs in Landscape Architecture. LAAB recognizes the Bachelor of Landscape Architecture, Bachelor of Science in Landscape Architecture, and Masters of Landscape Architecture. It accredits each program every six years, evaluating degree of conformance with established education standards.

The University of Arkansas Fay Jones School of Architecture and Design's department of landscape architecture offers the following LAABaccredited degree program:

- B.L.A. (142 undergraduate credits)

The next accreditation visit for the B.L.A. program is academic year 2027-28.

## Bachelor of Landscape Architecture Degree

Requirements for completion of Bachelor of Landscape Architecture include the state minimum core (p. 81).

As part of the state minimum core, the department recommends the
following:

| Laboratory Science |  |  |
| :---: | :---: | :---: |
| Select two of the following natural sciences for a total of eight hours: |  |  |
| BIOL 1543 <br> \& BIOL 1541L | Principles of Biology (ACTS Equivalency $=\mathrm{BIOL}$ 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) |  |
| BIOL 1613 \& BIOL 1611L | ```Plant Biology (ACTS Equivalency = BIOL 1034 Lecture) and Plant Biology Laboratory (ACTS Equivalency = BIOL }1034\mathrm{ Lab)``` |  |
| GEOS 1113 <br> \& GEOS 1111L | ```Physical Geology (ACTS Equivalency = GEOL L1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)``` |  |
| UNIV 1001 | University Perspectives | 1 |
| Completion of the following Professional Core: |  |  |
| Design and Advocacy Components |  |  |
| LARC 1315 | Fundamental Design Skills | 5 |
| LARC 1325 | Fundamental Design Methodology | 5 |
| LARC 2335 | Landscape Architecture Design III: Engaging Site, Engaging Place | 5 |
| LARC 2351 | Advocacy and Theory Module: Engaging Site, Engaging Place | 1 |
| LARC 2345 | Landscape Architecture IV: Collaborating with Site | 5 |
| LARC 2361 | Advocacy and Theory Module: Collaborating with Site | 1 |
| LARC 3355 | Landscape Architecture Design V: International Urban Place | 5 |


| LARC 2371 | Advocacy and Theory Module: International Urban <br> Place | 1 |
| :--- | :--- | :--- |
| LARC 3365 | Landscape Architecture Design VI: Engaging <br> Communities; Understanding Culture | 5 |
| LARC 3381 | Advocacy and Theory Module: Engaging <br> Communities; Understanding Culture | 1 |
| LARC 3375 | Landscape Architecture Design VII: Collaborating <br> with Communities | 5 |
| LARC 3391 | Advocacy and Theory Module: Collaborating with <br> Communities | 1 |
| LARC 4385 | Landscape Architecture Design VIII: Capstone | 5 |
| LARC 4311 | Advocacy and Theory Module: Capstone | 1 |
| LARC 4395 | Landscape Architecture Design IX: Comprehensive | 5 |
| LARC 4321 | Advocacy and Theory Module: Comprehensive | 1 |
| Communications Components |  |  |

Honors students may also substitute up to 6 hours of the following:
LARC 303VH Honors Special Projects
Construction Components

| LARC 2714 | Ecological Design and Construction: Terrain | 4 |
| :--- | :--- | :--- |
| LARC 2914 | Sustainable Design and Construction: Plant <br> Communities | 4 |
| LARC 3724 | Ecological Design and Construction: Water and | 4 |
| LARC 3734 | Drainage |  |
| Sustainable Design and Construction: Material and | 4 |  |
| LARC 3914 | Methods of Assembly |  |
| Sustainable Design and Construction: Remediation <br> and Plants on Structure | 4 |  |

## History and Theory Components

LARC 3413 History of Landscape Architecture I 3

LARC 4033 Landscape Architecture Theory 3
LARC 4413 History of Landscape Architecture II 3
LARC 4123 Urban Form Studies 3
Practice Components
LARC 4811 Landscape Architecture Interns 1
LARC 5613 Landscape Architectural Professional Practice 3
Professional Electives 9
Students may select courses from the Departments of Landscape Architecture, Interior Design and Architecture as well as courses in history, geography, horticulture, art, sociology, environmental studies, and business. These courses can be thematically selected to emphasize urban studies, ecological planning, construction management, and land development.
Free Electives
Students are encouraged to take courses outside the Department to broaden their education.

Total Hours

1. Candidates seeking graduation shall achieve a minimum of 142 hours and a minimum of a " C -" in each course within the professional curriculum. The remaining balance of hours shall have a minimum of 2.00 cumulative grade point average. Students must maintain a minimum 2.0 cumulative grade-point average to continue in the studio sequence. Any student receiving a "D+/-" or below in the professional
core shall repeat the course. Any student with a second "D+/-" or below shall be considered for non-continuance in the program as determined by the department head and faculty. To continue in the professional program, the student must submit a portfolio after their second year for faculty review. Please see section "Admission to the Professional Program in Landscape Architecture."
2. Students in landscape architecture are required to complete the department's summer study abroad program, after their second year.

NOTE: No more than four hours of physical education and/or R.O.T.C. may be counted toward a degree. Courses not acceptable toward degree credit include those of a remedial or orientation nature and whose content are considered to be measurably duplicated elsewhere in the school's curriculum.

By following the preceding curriculum, students will meet the statemandated State Minimum Core requirements. They must also meet all other University Requirements (p. 86) for graduation. The department strongly recommends that transfer students present eight hours of laboratory science courses selected from botany, biology, geology, and physical science as part of the state minimum core.

Students admitted to the university with a completed two-year associate of arts or associate of science degree from an Arkansas state-supported two-year or four-year college or university will receive credit for general education (core) requirements in accordance with ACT 182. All students also must complete any lower division discipline specific courses required for the major as well as all courses required to comply with the conditions of accreditation.

## Grade Appeals - Department of Landscape Architecture

Students in the Department of Landscape Architecture may appeal grades in the design studios as well as other professional courses in which it is believed that there are questions of fairness or equity in the application of the published grading policy of the faculty member. Appeals must be made in writing to the department head one week before the first week of the subsequent semester. The appeal will be presented to the entire Landscape Architecture faculty for consideration and may require the students to present their case in person. Outcomes of grade appeals may result in one of the following:

1. A recommendation to the faculty member regarding the grade appeal of the student.
2. A requirement for the student to repeat the design studio course and any co-requisite.
3. A recommendation for enrollment in the subsequent studio course, while advising the student of the need to achieve and maintain a cumulative 2.00 (in the studio sequence) for admission to the professional program.

## Professional Licensure Degree Requirement

The School's Bachelor of Landscape Architecture program is accredited by LAAB, which requires that specific criteria be met in a professional program. This ten-semester professional program gives graduates the required accredited degree to qualify to take the licensing exam and prepares them for practice as a licensed professional.

All fifty states require licensure for landscape architects. The primary purpose of this licensure is to protect the health, safety, and welfare of the public. Most states require that candidates possess an accredited degree in landscape architecture and complete a period of professional
experience, working with a licensed landscape architect. The department curriculum requires a summer internship during the third year of the program as part of this developmental period. Once the requirements of an accredited degree and the necessary internship period are complete, candidates must pass a national, four-part exam, sometimes with additional sections unique to that state.

## Landscape Architecture B.L.A. Ten-Semester Degree Program

The professional program for a Bachelor of Landscape Architecture Degree must be completed in 10 semesters of coursework and is not eligible for the Eight-Semester Degree Completion Program. However, the following 10-semester sample plan shows how a first-year student could obtain a Bachelor of Landscape Architecture degree in five years if the student is admitted to the Landscape Architecture Design Studio and subsequently is admitted to the professional program.

| First Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| LARC 1315 Fundamental Design Skills | 5 |  |  |
| Select one of the following (Satisfies | 4 |  |  |
| General Education Outcome 3.4): |  |  |  |
| BIOL 1613 Plant Biology (ACTS |  |  |  |
| Equivalency = BIOL 1034 Lecture) |  |  |  |
| \& BIOL 1611L Plant Biology |  |  |  |
| Laboratory (ACTS Equivalency = |  |  |  |
| BIOL 1543 Principles of Biology |  |  |  |
| Lecture) |  |  |  |
| \& BIOL 1541L Principles of Biology |  |  |  |
| Laboratory (ACTS Equivalency = |  |  |  |
| BIOL 1014 Lab) |  |  |  |
| MATH 1203 College Algebra (ACTS | 3 |  |  |
| Equivalency = MATH 1103) (Satisfies |  |  |  |
| General Education Outcome 2.1) |  |  |  |
| ENGL 1013 Composition I (ACTS | 3 |  |  |
| Equivalency = ENGL 1013) (Satisfies |  |  |  |
| General Education Outcome 1.1) |  |  |  |
| UNIV 1001 University Perspectives | 1 |  |  |
| LARC 1325 Fundamental Design |  | 5 |  |
| Methodology (Satisfies General |  |  |  |
| Education Outcome 1.2) |  |  |  |
| Satisfies General Education Outcome |  |  |  |
| 3.4: |  |  |  |
| GEOS 1113 Physical Geology (ACTS |  | 4 |  |
| Equivalency = GEOL 1114 Lecture) |  |  |  |
| \& GEOS 1111L Physical Geology |  |  |  |
| Laboratory (ACTS Equivalency $=$ GEOL |  |  |  |
| 1114 Lab) |  |  |  |
|  |  | 3 |  |
| Equivalency = SOCI 1013) (Satisfies |  |  |  |
| General Education Outcome 3.3) |  |  |  |
| ENGL 1023 Composition II (ACTS |  | 3 |  |
| Equivalency = ENGL 1023) (Satisfies |  |  |  |
| General Education Outcome 1.1) |  |  |  |
| Year Total: | 16 | 15 |  |



PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
${ }^{3}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.

## Minor in Design With Plants for Architecture Majors

The Department of Landscape Architecture offers and oversees a minor in Design With Plantss for students interested in significant world issues in landscape design, climate change, management, and sustainability. The Design with Plants Minor combines plant-centered coursework with several design-oriented courses within the Landscape Architecture Department. This minor is tailored for those students desiring a more indepth study of plants, plant communities, soils, aesthetic and architectural uses of plants, and design and deployment strategies related to them.

## What can I do with this minor?

Students pursuing this minor will be well-suited for engaging with landscape design professionals and other allied professionals pursuing productive, locally sensitive, sustainable, and resilient planting schemes.
Two courses provide students with core skills in designing with plants: 'Sustainable Design and Construction: Plant Communities' and 'Design Visualization, Inquiry and Communications.' Issues and topics addressed include:

## Foundation topics in plants and cultivation

- Concepts relating to plants, their associations, and communities, and how to utilize those concepts as design frameworks
- Fundamentals of soils, soil structure and composition, soil health and ecosystems, and strategies for their protection
- Studying productive plant communities (food crops) to understand them as a community and as a design opportunity
- Questions of sustainability regarding plants and planting
- Fundamental design methods and means of graphic representation to communicate ideas and proposals


## Required Courses



## Total Hours

## Requirements for Urban and Regional Planning Minor

A student who is interested in the Urban and Regional Planning minor should notify either the Departments of Landscape Architecture or Political Science and consult with their academic advisor. The minor consists of 18 hours of required and elective courses and subdivided into three tiers: core courses, tier-one electives and tier-two electives. The minor's required and elective courses include:

## Required Core Courses:

| PLSC 4103 | Introduction to Urban Planning | 3 |
| :--- | :--- | ---: |
| LARC 5493 | Environmental Land Use Planning | 3 |
| Tier-One Electives | $\mathbf{6 - 1 2}$ |  |
| Select 6-12 hours from the following: |  |  |
| LARC-approved design studio focused on planning (may only |  |  |
| count once) |  |  |
| LARC Advocacy Module focused on planning |  |  |
| ANTH 5113 | Anthropology of the City |  |
| PLSC 4173 | Community Development |  |
| PLSC 390V | Special Topics |  |
| HDFS 4603 | Environmental Sociology |  |
| GEOS 4073 | Urban Geography |  |
| PLSC 3253 | Urban Politics |  |
| LARC 4753 | Incremental Sprawl Repair |  |
| LARC 402V | Special Studies |  |
| SOCI 3153 | Urban Sociology |  |

Tier-Two Electives (up to six hours of electives may come from 0-6 the following options)

| LARC 4033 | Landscape Architecture Theory |
| :--- | :--- |
| GEOS 3043 | Sustaining Earth |
| GEOS 4393 | American Public Lands \& Policy |
| GEOS 4693 | Environmental Justice |
| LARC 5053 | Historic Landscape Preservation |
| ANTH 4443 | Cultural Resource Management I |
| ANTH 4603 |  |
| ENSC 3223 | Ecosystems Assessment |
| ENSC 3221L | Ecosystems Assessment Laboratory |
| ENSC 3933 | Environmental Ethics |
| ENSC 3413 | Principles of Environmental Economics |
| PLSC 4283 | Federalism and Intergovernmental Relations |
| ARCH 5493 | History of Urban Form |
| SCMT 3443 | DELIVER: Transportation and Distribution |

Total Hours

## Minor in Planting Design (for Horticulture majors)

17 Hours Total Required

## Required Courses

| LARC 2113 | Design Visualization, Inquiry and Communications | 3 |
| :--- | :--- | :--- |
| LARC 2714 | Ecological Design and Construction: Terrain | 4 |
| LARC 3914 | Sustainable Design and Construction: Remediation <br> and Plants on Structure | 4 |


| Electives |
| :--- |
| Select two of the following: |
| LARC 1003 |
| LARC 3123 |
|  |
| Basic Course in the Arts: The American Landscape |
| LARC 303V |
| Communications |

## Total Hours

Minor in Sustainable Landscape Design and Management
The Department of Landscape Architecture offers and oversees a minor in Sustainable Landscape Design and Management. The minor is available to any student pursuing a major within the Fay Jones School of Architecture and Design.

This minor in Sustainable Landscape Design and Management combines coursework in the foundations of sustainability, sustainable landscape practices, horticulture, landscape management, operations, and installation.

Responsible landscape professionals increasingly incorporate sustainability into their design, maintenance, and management philosophies. This minor will allow students to incorporate principles of sustainable landscape design and management into the built world, from large-scale landscapes to site-specific spaces. Sustainable landscape management ensures that the landscape needs of today are met without compromising those of future generations by giving equal attention to social, natural, built, and managed systems. Issues addressed include:

- Basic understanding of sustainability at the local to global scale.
- Sustainable landscape practices lessening maintenance time and costs.
- Ecological principles of site design and construction grading (ground plane manipulation).
- Proper plant selection with preference to native and/or organically grown plants that require minimal supplemental nutrients and water, attracting wildlife and pollinators, and are healthier for human use.
- Appropriate pruning to minimize waste, reduce costs and maximize the plant's benefits.
- Sustainable planting design and maintenance to maintain local character and identity.
- Sustainable landscape practices that help to maintain local jobs and businesses.
- Identifying locally sourced materials to minimize transportation costs and resource consumption.


## Required Courses

LARC 2714 Ecological Design and Construction: Terrain

## Choose 3 hours from:

HORT 2003 Principles of Horticulture
or HORT 3503ustainable and Organic Horticulture
or SUST 110Boundations of Sustainability
Choose 9-10 hours from the following:
LARC $2113 \quad$ Design Visualization, Inquiry and Communications
or LARC 3738 -10
Methods of Assembly
or HORT 310ßoody Landscape Plants
or HORT 3203
or HORT 3503ustainable and Organic Horticulture
or HORT 4033rofessional Landscape Installation and Construction
or SUST 110Boundations of Sustainability

A student must take a minimum of 6 hours in the 3000 and 4000 level courses to satisfy requirements for the minor.

## Total Hours

## Professional Licensure Degree Requirement

The School's Bachelor of Landscape Architecture program is accredited by LAAB, which requires that specific criteria be met in a professional program. This five-year professional program gives its graduates the required prerequisite degree to qualify to take the licensing exam and prepares them for practice.

All fifty states require licensure for landscape architects. The primary purpose of this licensure is to "protect the health, safety, and welfare of the public." Most states require that candidates possess an accredited degree in landscape architecture and complete a period of professional experience, working with a licensed landscape architect. Once these requirements are complete, candidates must pass a national, uniform exam, sometimes with additional sections unique to that state.

## Faculty

Biehle, Scott, M.L.A. (University of Texas at Austin), B.A. (St. Olaf College), Teaching Associate Professor, 2012, 2023.
Billig, Noah Scott, Ph.D. (Clemson University), M.Ur.P., M.L.A., B.A. (University of Minnesota), Associate Professor, 2011, 2018.
Coffman, James D., M.L.Arch. (Ball State University, Muncie, Indiana), B.S.B. (Indiana University-Bloomington), Assistant Professor, 2017.

Díaz Montemayor, Gabriel, M.L.A. (Auburn University), B.Arch.
(Universidad Autónoma de Chihuahua), Assistant Professor, 2019.
Erdman, Kimball Douglas, M.L.A. (University of Oregon), B.L.A. (Utah
State University), Professor, 2009, 2023.
McCown, Ken, M.Arch. (University of Illinois at Urbana Champaign), Professor, 2019.
Smith, Carl Alan, Ph.D., M.A. (University of Sheffield), B.Sc. (University of Lancaster), Associate Professor, 2008, 2013.

## Courses

LARC 1003. Basic Course in the Arts: The American Landscape. 3 Hours. Mankind's changing attitudes toward urban and rural outdoor spaces and their aesthetic and cultural values. The origins of the environmental/conservation movement and the development of an American land ethic. Appreciation of the relationship of the natural and historic landscape to the arts and the aesthetic importance of open space. (Typically offered: Fall and Spring)
LARC 1003H. Honors Basic Course in the Arts: The American Landscape. 3 Hours.
Mankind's changing attitudes toward urban and rural outdoor spaces and their aesthetic and cultural values. The origins of the environmental/conservation movement and the development of an American land ethic. Appreciation of the relationship of the natural and historic landscape to the arts and the aesthetic importance of open space. (Typically offered: Fall and Spring) This course is equivalent to LARC 1003.

## LARC 1315. Fundamental Design Skills. 5 Hours.

Fundamental design skills; development of visual and verbal communication skills including observation skills, design technologies, analysis and representation in both 2-dimensions and 3-dimensions through analog and digital tools; creative and critical thinking skills. (Typically offered: Fall and Summer)

## LARC 1325. Fundamental Design Methodology. 5 Hours.

Fundamental design skills; use of precedents for understanding principles of design and natural and formal ordering systems; design development using both iterative and alternative methods of exploration in 2-dimensions and 3-dimensions using analog and digital tools; continued development of visual and verbal communication skills. Prerequisite: LARC 1315. (Typically offered: Spring and Summer)

LARC 2113. Design Visualization, Inquiry and Communications. 3 Hours. Investigation and application of foundational, current and innovative techniques and technologies used in landscape architecture. Field work and other modes of inquiry and seeing are used to study sites. Processes and workflow are learned. Students learn inquiry through technologies, site context investigation, and how to communicate to stakeholders. (Typically offered: Fall)

LARC 2113H. Honors Design Visualization, Inquiry and Communications. 3 Hours.
Investigation and application of foundational, current and innovative techniques and technologies used in landscape architecture. Field work and other modes of inquiry and seeing are used to study sites. Processes and workflow are learned. Students learn inquiry through technologies, site context investigation, and how to communicate to stakeholders. Prerequisite: Honors standing. (Typically offered: Fall) This course is equivalent to LARC 2113.

LARC 2335. Landscape Architecture Design III: Engaging Site, Engaging Place. 5 Hours.
Fundamentals of site inventory, analysis, and assessment. Through measurement, observation, and documentation, students engage with the design of local and regional sites, synthesizing place- based inventorial understanding and experiential response. Students gain an appreciation for both quantifiable and qualitative measurement and observation as creative tools for design development. Corequisite: LARC 2351. Prerequisite: LARC 1325. (Typically offered: Fall)

## LARC 2345. Landscape Architecture IV: Collaborating with Site. 5 Hours.

Students consider an increased complexity of landscape issues and multi-purpose design strategies within a local or regional context, while simultaneously responding to external programmatic requirements. Instructor-guided design projects reinforce the value of site exploration and enumeration. The design process is enriched through programmatic and service requirements, stakeholder collaboration, and reflection on design implication. Corequisite: LARC 2351. Prerequisite: LARC 2335. (Typically offered: Spring)

LARC 2345H. Honors Landscape Architecture IV: Collaborating with Site. 5 Hours.
Students consider an increased complexity of landscape issues and multi-purpose design strategies within a local or regional context, while simultaneously responding to external programmatic requirements. Instructor-guided design projects reinforce the value of site exploration and enumeration. The design process is enriched through programmatic and service requirements, stakeholder collaboration, and reflection on design implication. Corequisite: LARC 2351. Prerequisite: LARC 2335 and Honors candidacy. (Typically offered: Spring)
This course is equivalent to LARC 2345.
LARC 2351. Advocacy and Theory Module: Engaging Site, Engaging Place. 1 Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 2335. (Typically offered: Fall)

LARC 2361. Advocacy and Theory Module: Collaborating with Site. 1 Hour. Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 2345. (Typically offered: Spring)

LARC 2371. Advocacy and Theory Module: International Urban Place. 1 Hour. Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 3355. (Typically offered: Summer)
LARC 2714. Ecological Design and Construction: Terrain. 4 Hours. Introduces students to fundamental principles of reading and understanding geomorphology, site systems, and site design. Design tools include grading techniques, earthwork computations, and site-related documentation of natural and built structures. Site-related principles of sustainability are introduced as a framework for solving contemporary site issues. (Typically offered: Fall)

LARC 2714H. Honors Ecological Design and Construction: Terrain. 4 Hours. Introduces students to fundamental principles of reading and understanding geomorphology, site systems, and site design. Design tools include grading techniques, earthwork computations, and site-related documentation of natural and built structures. Site-related principles of sustainability are introduced as a framework for solving contemporary site issues. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to LARC 2714.
LARC 2914. Sustainable Design and Construction: Plant Communities. 4 Hours.
Introduces plants as components of healthy ecosystems, to innovative and sustainable plants and planting strategies as design frameworks, and to planting as powerful design tool. Soils as building block of healthy designs, foundation identification of woody plants and plant taxonomy, and fundamental concepts of time--ephemerality, phenology, and phenomenology. (Typically offered: Spring)
LARC 303V. Special Projects. 1-6 Hour.
Design implementation, study, practicum, and preparation of working drawings. (Typically offered: Irregular) May be repeated for degree credit.
LARC 303VH. Honors Special Projects. 1-6 Hour.
Design implementation, study, practicum, and preparation of working drawings. Prerequisite: Honors candidacy. (Typically offered: Irregular) This course is equivalent to LARC 303V.

LARC 3123. Advanced Design Visualization, Inquiry and Communications. 3 Hours.
Students learn the applications of current communication techniques and technologies in landscape architecture to discover implications through inquiry. Field work and other modes of investigation and seeing are used around urbanization and large scale landscapes in design inquiry. Students learn how to communicate the implications of design to broad stakeholders. (Typically offered: Spring)

LARC 3123H. Honors Advanced Design Visualization, Inquiry and Communications. 3 Hours.
Students learn the applications of current communication techniques and technologies in landscape architecture to discover implications through inquiry. Field work and other modes of investigation and seeing are used around urbanization and large scale landscapes in design inquiry. Students learn how to communicate the implications of design to broad stakeholders. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to LARC 3123.

LARC 3355. Landscape Architecture Design V: International Urban Place. 5 Hours.
Investigation of social behavior as applied to program and design that serves human needs. Projects reflect increased scope, scale, and resolution with a detailed design component. Studio and lecture. Corequisite: LARC 2371. Prerequisite: LARC 2345. (Typically offered: Summer)

LARC 3365. Landscape Architecture Design VI: Engaging Communities; Understanding Culture. 5 Hours.
Students engage in design projects working for and/or with a particular population, including forming partnerships with a variety of stakeholders. The studio emphasizes empathy and understanding of competing value systems. Students apply a new cultural understanding to design projects. Corequisite: LARC 3381. Prerequisite: LARC 3355. (Typically offered: Fall)

LARC 3375. Landscape Architecture Design VII: Collaborating with Communities. 5 Hours.
Investigation and application of an issues-based, service-learning, community design project, focusing on resiliency and forming partnerships with a variety of stakeholders. Students engage in design as a means for influencing and negotiating on behalf of a community partner. Corequisite: LARC 3391. (Typically offered: Spring)

LARC 3381. Advocacy and Theory Module: Engaging Communities; Understanding Culture. 1 Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 3365. (Typically offered: Fall)

LARC 3391. Advocacy and Theory Module: Collaborating with Communities. 1 Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 3375. (Typically offered: Spring)

## LARC 3413. History of Landscape Architecture I. 3 Hours.

Analysis of the interaction between landscapes and human cultural development as reflected in the meaning, organization, and impact of design and planning at garden and community scales from the Neolithic period through the eighteen century. (Typically offered: Fall)
LARC 3413H. Honors History of Landscape Architecture I. 3 Hours.
Analysis of the interaction between landscapes and human cultural development as reflected in the meaning, organization, and impact of design and planning at garden and community scales from the Neolithic period through the eighteenth century. Prerequisite: Honors candidacy. (Typically offered: Fall)
This course is equivalent to LARC 3413.

## LARC 3724. Ecological Design and Construction: Water and Drainage. 4

 Hours.Introduces water-related issues as encountered and addressed by landscape architects. Students will understand, apply, and design infrastructure such as retention/detention ponds, bioswales, and constructed wetlands. Technical documentation methods as a means of conveying design intent are included. Prerequisite: LARC 2714. (Typically offered: Fall)

LARC 3734. Sustainable Design and Construction: Material and Methods of Assembly. 4 Hours.
Introduces students to issues in material selection including properties, construction techniques, practical considerations in material use and subsequent implications and effects on the built environment. Material use and human experience are also explored. Technical documentation methods as a means of conveying design intent are included. Prerequisite: LARC 3724. (Typically offered: Spring)
LARC 3914. Sustainable Design and Construction: Remediation and Plants on Structure. 4 Hours.
Introduces particular strategies and techniques of plant use in the built environment. Potential topics include green infrastructure, site, soil, and water remediation techniques, and structural considerations of planting on structure. (Typically offered: Fall)

LARC 402V. Special Studies. 1-6 Hour.
Individual or group study and practicum involving landscape design, planning and management, history and environmental analysis. (Typically offered: Irregular) May be repeated for degree credit.
LARC 402VH. Honors Special Studies. 1-6 Hour.
Individual or group study and practicum involving landscape design, planning and management, history and environmental analysis. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to LARC 402V.

## LARC 4033. Landscape Architecture Theory. 3 Hours.

Examination of historic and current theories in landscape architecture and planning to develop critical judgement. Seminar format includes readings and case studies in issues such as social and environmental justice. Prerequisite: LARC 3413 and LARC 4413 or instructor consent. (Typically offered: Summer)

## LARC 4033H. Honors Landscape Architecture Theory. 3 Hours.

Examination of historic and current theories in landscape architecture and planning to develop critical judgement. Seminar format includes readings and case studies in issues such as social and environmental justice. Prerequisite: LARC 3413 and LARC 4413 or instructor consent. (Typically offered: Fall)
This course is equivalent to LARC 4033.
LARC 4123. Urban Form Studies. 3 Hours.
The examination of urban, village, and suburban form and its influencing forces. Includes study of cultural forces, technological developments, and physical shape, scale, and materials that define urban areas. Required field trip component of study abroad. Prerequisite: LARC 3413. (Typically offered: Summer)

LARC 4311. Advocacy and Theory Module: Capstone. 1 Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 4385. (Typically offered: Fall)

LARC 4321. Advocacy and Theory Module: Comprehensive. 1 Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 4395. (Typically offered: Spring)

LARC 4385. Landscape Architecture Design VIII: Capstone. 5 Hours.
Topic based, service learning studio that blends faculty research interests with student initiative and the potential for collaboration. This studio builds on the broad foundation of previous coursework while developing a design specialization through which students can advocate for both the profession and the communities they serve. Corequisite: LARC 4311. (Typically offered: Fall)

## LARC 4395. Landscape Architecture Design IX: Comprehensive. 5 Hours.

Summative studio that requires the student to demonstrate landscape architectural design competency through a multiscalar approach that utilizes various resolutions to address critical, multidimensional problems. Corequisite: LARC 4321. (Typically offered: Spring)

## LARC 4413. History of Landscape Architecture II. 3 Hours.

Critical study and analysis of landscape architecture from nineteenth century to the present, with an emphasis on the philosophies, design and planning theories, and social conditions that have influenced the form of gardens, parks, and cities. (Typically offered: Spring)

LARC 4413H. Honors History of Landscape Architecture II. 3 Hours.
Critical study and analysis of landscape architecture from nineteenth century to the present, with an emphasis on the philosophies, design and planning theories, and social conditions that have influenced the form of gardens, parks, and cities.
Prerequisite: Honors candidacy. (Typically offered: Spring)
This course is equivalent to LARC 4413.
LARC 4523H. Landscape Architecture Honors Thesis. 3 Hours.
Development and production of an honors thesis proposal and thesis. Required for all landscape architecture honors students. Prerequisite: Honors standing. (Typically offered: Irregular)

## LARC 4753. Incremental Sprawl Repair. 3 Hours.

Exploration of the causes, manifestation and results of suburban sprawl on the built environment. Design and planning strategies linked to landscape, urbanism, policy, transportation, resource-conservation, ecology, and social structures are proposed. Emphasis is placed on combining traditional and cutting edge methods for repairing sprawled cities and regions. Prerequisite: 4th or 5th year student or instructor approval. (Typically offered: Irregular)

## LARC 4753H. Honors Incremental Sprawl Repair. 3 Hours.

Exploration of the causes, manifestation and results of suburban sprawl on the built environment. Design and planning strategies linked to landscape, urbanism, policy, transportation, resource-conservation, ecology, and social structures are proposed. Emphasis is placed on combining traditional and cutting edge methods for repairing sprawled cities and regions. Prerequisite: 4th or 5th year student or instructor approval. (Typically offered: Irregular)
This course is equivalent to LARC 4753.
LARC 4811. Landscape Architecture Interns. 1 Hour.
Supervised work experience that may include a combination of design, planning, operations, and management procedures in approved design, design/build, government, or non-profit organization. Exposure to a wide range of job tasks and project types. Summative outcomes include a reflection essay and a portfolio of internship work. Prerequisite: LARC 3375 and LARC 3914. (Typically offered: Summer)

## LARC 4853. Latin American Landscapes. 3 Hours.

This course studies the shaping of urban Latin American Landscapes by investigating, problematizing, and analyzing their diverse social, cultural, economic, and environmental conditions as reflected in the built realm. The main scope of study is the conception, origins, meaning, function, and performance of public spaces and landscapes in the continent. (Typically offered: Spring)
This course is cross-listed with LALS 4853.

## LARC 5053. Historic Landscape Preservation. 3 Hours.

Survey of historic preservation as a profession and the emerging cultural landscape preservation movement. Introduction to preservation principles as described by the Secretary of the Interiors Standards and Guidelines. Analysis of case studies will reinforce basic philosophies and introduce preservation approaches. Prerequisite: LARC 3413 and LARC 4413. (Typically offered: Irregular)

LARC 5493. Environmental Land Use Planning. 3 Hours.
Investigation of the relationship between development, stewardship and land use on the city and regional scales. Natural resource systems, public policies, regional economics, and social contexts are investigated as informers of environmental planning and design decisions. Prerequisite: Junior standing or instructor approval. (Typically offered: Spring)

LARC 5493H. Honors Environmental Land Use Planning. 3 Hours.
Investigation of the relationship between development, stewardship and land use on the city and regional scales. Natural resource systems, public policies, regional economics, and social contexts are investigated as informers of environmental planning and design decisions. Prerequisite: Junior and honors standing, or instructor approval. (Typically offered: Spring)
This course is equivalent to LARC 5493.
LARC 5613. Landscape Architectural Professional Practice. 3 Hours.
Review of professional and disciplinary responsibilities and related aspects (including health, safety, and welfare issues) of private, public and non-profit landscape architectural practice. (Typically offered: Fall)
LARC 5613H. Honors Landscape Architectural Professional Practice. 3 Hours. Review of professional and disciplinary responsibilities and related aspects (including health, safety, and welfare issues) of private, public and non-profit landscape architectural practice. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to LARC 5613.

## Urban and Regional Planning (PLAN)

Noah Billig

Director of Planning Minor
Department of Landscape Architecture
Fay Jones School of Architecture and Design
Vol Walker Hall, room 304
nsbillig@uark.edu
The Landscape Architecture and Political Science departments collaboratively offer an interdisciplinary minor in Urban and Regional Planning for students interested in critical and complex urban and sustainability issues. The minor incorporates discussion of policy, design, and advocacy as shapers of, among others, resilience and justice, infrastructure and mobility, or community engagement.

## Requirements for Urban and Regional Planning Minor

A student who is interested in the Urban and Regional Planning minor should notify either the Departments of Landscape Architecture or Political Science and consult with their academic advisor. The minor consists of 18 hours of required and elective courses and subdivided into three tiers: core courses, tier-one electives and tier-two electives. The minor's required and elective courses include:

## Required Core Courses:

| PLSC 4103 | Introduction to Urban Planning | 3 |
| :--- | :--- | :--- |
| LARC 5493 | Environmental Land Use Planning | 3 |

Tier-One Electives 6-12

Select 6-12 hours from the following:
LARC-approved design studio focused on planning (may only count once)
LARC Advocacy Module focused on planning
ANTH 5113 Anthropology of the City

| PLSC 4173 | Community Development |
| :--- | :--- |
| PLSC 390V | Special Topics |
| HDFS 4603 | Environmental Sociology |
| GEOS 4073 | Urban Geography |
| PLSC 3253 | Urban Politics |
| LARC 4753 | Incremental Sprawl Repair |
| LARC 402V | Special Studies |
| SOCI 3153 | Urban Sociology |

Tier-Two Electives (up to six hours of electives may come from 0-6 the following options)

| LARC 4033 | Landscape Architecture Theory |
| :--- | :--- |
| GEOS 3043 | Sustaining Earth |
| GEOS 4393 | American Public Lands \& Policy |
| GEOS 4693 | Environmental Justice |
| LARC 5053 | Historic Landscape Preservation |
| ANTH 4443 | Cultural Resource Management I |
| ANTH 4603 |  |
| ENSC 3223 | Ecosystems Assessment |
| ENSC 3221L | Ecosystems Assessment Laboratory |
| ENSC 3933 | Environmental Ethics |
| ENSC 3413 | Principles of Environmental Economics |
| PLSC 4283 | Federalism and Intergovernmental Relations |
| ARCH 5493 | History of Urban Form |
| SCMT 3443 | DELIVER: Transportation and Distribution |
|  | Management |

## Total Hours

## Sustainability (SUST)

Ken McCown
Coordinator of Academic Sustainability
Vol Walker Hall, suite 115
479-575-4907
Email: kennethm@uark.edu
Sustainability Program Website (https://sustainability.uark.edu/academics/ minor.php)

The program in sustainability offers an interdisciplinary minor in sustainability available to students from all majors at the university.

The minor is accessible to all undergraduate students, regardless of degree program. The purpose of the minor in Sustainability is to provide foundational knowledge and skills related to the emerging discipline of sustainability, organized around four thematic areas reflecting strength in scholarship of University of Arkansas academic colleges: Sustainability of Social Systems, Sustainability of Natural Systems, Sustainability of Built Systems, and Sustainability of Managed Systems. Students who complete the minor in Sustainability will be expected to:

- Articulate commonly accepted definitions of sustainability and discuss various nuances among those definitions;
- Have an understanding of the interdisciplinary nature of sustainability issues, particularly as they pertain to the thematic areas of knowledge addressed by the minor (sustainability of natural systems, sustainability of managed systems, sustainability of built systems, and sustainability of human social systems);
- Be conversant regarding acquisition and analysis of data pertinent to sustainability issues;
- Communicate orally and in writing organized thoughts defining sustainability issues;
- Identify appropriate potential strategies to address sustainability issues using data and provide results of rudimentary analyses of data using novel metrics or statistics;
- Make recommendations, based on data analysis and interpretation, to advance sustainability of individuals or institutions.

The program also offers a graduate certificate in sustainability (http:// catalog.uark.edu/graduatecatalog/programsofstudy/sustainabilitysust/) through the Graduate School.

## Required Courses for a Minor in Sustainability

Students must earn a grade of 'C' or better for all courses used to fulfill requirements of the minor in Sustainability.

SUST 1103 Foundations of Sustainability 3
SUST 2103 Applications of Sustainability 3
Elective courses with sustainability focus selected from a broad menu 9
of offerings in four thematic areas:
Sustainability of Social Systems
Sustainability of Natural Systems
Sustainability of Built Systems
Sustainability of Managed Systems
Elective courses are categorized as Tier 1 and Tier 2. Tier 1 courses are those with dominant sustainability content or fundamental principles related to understanding sustainability. Tier 1 courses must comprise at least 6 hours of the 9 elective hours. Tier 2 courses are those with subordinate sustainability content or associated principles related to understanding sustainability, but with content useful in preparing students with prerequisite knowledge for Tier 1 courses. Only 3 hours of Tier 2 courses will be accepted in fulfillment of the elective hours in the Minor in Sustainability.
Complete lists of Tier 1 and Tier 2 courses by thematic areas are presented below.

| SUST 4103 | Capstone Experience in Sustainability | 3 |
| :--- | :--- | ---: |
| Total Hours | 18 |  |

List of Available Elective Courses: Students choose 9 hours from menus provided on the Sustainability website (http:// sustainability.uark.edu/academics/minor/minor-courses.php); at least six hours must be chosen from Tier 1 courses (with prerequisites, if applicable).

## Capstone Experience

All students participating in the minor in Sustainability must complete a capstone experience focused on service learning, research learning, or internship in sustainability. Student engagement in community service, research, or relevant work on sustainability through a summer internship provides opportunities for students to apply sustainability theories and principles learned from prior coursework toward advancing sustainability across society.

Students may formally petition the University of Arkansas Sustainability Curriculum Steering Committee to substitute sustainability-oriented senior design projects, Honors College research projects, other service learning courses, or equivalent internship experiences for SUST 4103 to satisfy
the capstone element of minor in Sustainability. Details of the procedure to substitute alternative experiences for SUST 4103 can be found in the Foundations of Sustainability Program Handbook.

To qualify for SUST 4103 or other sustainability capstone experience, students must have successfully completed SUST 1103, SUST 2103, and 6 hours of elective course work toward the minor in Sustainability.

## Courses

SUST 1103. Foundations of Sustainability. 3 Hours.
Foundations of Sustainability is an interdisciplinary course to introduce concepts and theories of sustainability at global, regional, and local levels. Emphasis is on four thematic areas of sustainability; social, natural, built and managed systems. The aim is to increase environmental literacy for engagement of sustainability into students' own disciplines. (Typically offered: Spring)
SUST 1103H. Honors Foundations of Sustainability. 3 Hours.
Foundations of Sustainability is an interdisciplinary course to introduce concepts and theories of sustainability at global, regional, and local levels. Emphasis is on four thematic areas of sustainability; social, natural, built and managed systems. The aim is to increase environmental literacy for engagement of sustainability into students' own disciplines. Prerequisite: Honors standing. (Typically offered: Spring) This course is equivalent to SUST 1103.
SUST 2103. Applications of Sustainability. 3 Hours.
Applications of Sustainability is an interdisciplinary course introducing data gathering, data analysis or interpretation, and synthesis of data applied to problems in sustainability. Students engage in hands-on, inquiry-based investigation of sustainability issues across four thematic areas: social systems, natural systems, built systems (Architecture \& Engineering), and managed systems (Agriculture \& Business). Prerequisite: SUST 1103 or instructor consent. (Typically offered: Fall)
SUST 390V. Special Problems in Sustainability. 1-6 Hour.
Special Problems is intended to fulfill a need in the sustainability curriculum to offer one-time pilot course work in any semester prior to the formal curriculum approval process, offer seminars on unusual but timely topics in sustainability on a one-time basis, or independent study for students seeking additional expertise in sustainability research and scholarship. Prerequisite: SUST 1103 and SUST 2103 or instructor permission. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

SUST 4103. Capstone Experience in Sustainability. 3 Hours.
A capstone experience focused on service learning, research learning, or internship in sustainability. Student engagement in community service, research, or relevant work on sustainability through a summer internship or equivalent experience provides opportunities for students to apply sustainability theories and principles learned from prior course work toward advancing sustainability across society. Prerequisite: SUST 1103 and SUST 2103. (Typically offered: Spring)

## SUST 4603. Environmental Sociology. 3 Hours.

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. Prerequisite: Junior or senior standing. (Typically offered: Fall) This course is cross-listed with HDFS 4603, SOCI 4603.

SUST 4693. Environmental Justice. 3 Hours.
This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. (Typically offered: Spring)
This course is equivalent to GEOS 4693.

## Fulbright College of Arts and Sciences

## Mission and Objectives

J. William Fulbright was a University of Arkansas student who graduated in 1925, was later a law professor and then became $U$ of $A$ president from 1939-41 - all prior to serving as a U.S. Senator for many years.

The university recognizes that J. William Fulbright's political legacy is controversial and complex. Along with signing the Southern Manifesto and opposing the landmark 1954 ruling of Brown v. Board of Education, Fulbright voted to filibuster the Civil Rights Act of 1964, and voted against the 1965 Voting Rights Act. These actions directly contradicted his efforts to advance cultural understanding, peace, and international exchange through education.
J. William Fulbright supported the creation of the United Nations and his efforts to increase mutual understanding between people and nations resulted in the creation of the Fulbright Program - the world's largest international educational exchange program with more than 370,000 alumni, and thousands of students and scholars from 160 countries participating annually. President Bill Clinton in 1993 honored him with the nation's highest civilian award, the Medal of Freedom.

Additionally, the Board of Trustees of the University of Arkansas on November 20, 1981, resolved...

> The College of Arts and Sciences at the University of Arkansas, Fayetteville, shall be named, henceforth, the J. WILLIAM FULBRIGHT COLLEGE OF ARTS AND SCIENCES. His name will imbue that college, and the University, with his reputation and image for a devoted interest in higher education and its accomplishments through its scholars as reflected in its students.

It's his work to enhance cultural understanding, peace, and international exchange through education that we honor, and his service to this institution as president. How we view past leaders is an important topic and many colleges and communities are grappling with what's right while working to understand the complete history of those involved and what we can learn from the process. There is no better place to have this discussion than on a college campus, where we value conversation, learning and debate.

Additionally, the college has adopted as its mission the following statement, learning from Fulbright's conflicting and complex legacy and vowing to do better:

The Fulbright College of Arts and Sciences enriches lives by promoting discovery, diversity, and inclusion, facilitating transformational experiences, and fostering peace through education.

## Facilities and Resources

## Academic Advising Services

The Fulbright College of Arts and Sciences provides an adviser for each student enrolled in the college. Advisers in the Fulbright College Advising Center will assist students in program planning and will help them to become aware of and familiar with the academic offerings of the university. Students should consult their advisers on a regular basis, not limited to registration matters but including all areas of their academic careers. Personnel in the Fulbright College Advising Center or the Dean's office will direct students to the appropriate advising office.

Students should discuss with their advisers opportunities for individual variations as well as regular course requirements. Programs and facilities of particular interest to individuals may include the Honors Program, programs for advanced placement and credit by examination, study abroad and the services of the University Career Development Center.

The Career Development Center administers and interprets tests that measure individual ability, interest, and achievement, and thus may aid also in counseling students about the field of study in which they are most likely to be effective and successful.

For questions regarding advising, contact the Fulbright College Advising Center at 575-3307 or visit online at http://fcac.uark.edu.

## Degrees Offered

The Fulbright College of Arts and Sciences offers four-year curricula leading to the degrees of Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.M.), and Bachelor of Social Work (B.S.W.). Each candidate for the B.A. and B.S. degrees selects a major field for specialized study. In addition to usual departmental majors there are interdepartmental majors and special programs for students preparing for professional degrees in law, medicine, dentistry, and teaching.

## College Scholarships

Foremost among scholarships available in the Fulbright College of Arts and Sciences is the Sturgis Fellowship. This scholarship enables Fulbright College to offer outstanding graduates of secondary and preparatory schools undergraduate fellowships valued at \$50,000 for four collegiate years.

Students studying in the humanities or classics may qualify for the J . William and Elizabeth W. Fulbright Scholarship for study abroad. This award is for students who are at least juniors and is intended to support a year of study abroad.

The King Fahd Center for Middle East Studies offers two-year undergraduate scholarships for superior students interested in pursuing the study of the Middle East or Islam.

In addition, students may compete for a number of privately endowed scholarships, which are awarded on a competitive basis to those who qualify. Application for these general Fulbright College scholarships and awards is made through the Office of the Dean, 525 Old Main. Students may obtain more detailed information about the abovenamed scholarships and other Fulbright College scholarships at http:// fulbright.uark.edu/scholarships/index.php (http://fulbright.uark.edu/ scholarships/).

Other scholarships are available from the departments of Fulbright College. Information may be sought from the departmental chair of the student's major.

## Student Organizations

There are many general-interest societies and organizations to which students may belong, and nearly every department of the university maintains an honor society through which high scholarship is rewarded. Students in Fulbright College may aspire to membership in the following organizations:

- Alpha Chi Sigma (chemistry)
- Alpha Epsilon Delta (pre-medical, medical technology, pre-dental)
- Alpha Kappa Delta (sociology)
- Alpha Phi Sigma (criminal justice)
- Alpha Psi Omega (drama)
- American Association of Petroleum Geologists (geoscience)
- American Chemical Society (chemistry)
- American Society for Photogrammetry and Remote Sensing (geoscience)
- Delta Phi Alpha (German)
- Eta Sigma Phi (Greek and Latin)
- Gamma Theta Upsilon (geography)
- Kappa Kappa Psi (band)
- Kappa Tau Alpha (journalism)
- Lambda Alpha (anthropology)
- Lambda Pi Eta (communication)
- Lambda Tau (writers)
- Omicron Delta Epsilon (economics)
- Phi Alpha (social work)
- Phi Alpha Theta (history)
- Phi Beta Delta (international scholarship)
- Phi Beta Kappa (arts and sciences)
- Phi Kappa Phi
- Phi Mu Alpha (music, men)
- Pi Kappa Delta (forensics)
- Pi Mu Epsilon (mathematics)
- Pi Sigma Alpha (political science)
- Psi Chi (psychology)
- Sigma Alpha Iota (music, women)
- Sigma Delta Pi (Spanish)
- Sigma Gamma Epsilon (geology)
- Sigma Pi Sigma (physics)
- Tau Beta Sigma (band, women)


## College Academic Regulations

Courses of study in the Fulbright College of Arts and Sciences are designed to give students the comprehensive view of society that the modern world requires. Students who enroll in Fulbright College, or who elect some of its courses, have an opportunity to gain a broad cultural education, which is a part of intelligent living and, at the same time, to prepare for professions or to acquire technical training in the sciences. The college has two major teaching functions: to provide basic general education in the arts and sciences necessary to all persons for effective
participation in the complex world in which we live; and, second, to furnish the student an opportunity to specialize in the field of the student's choice.

To implement the first of these aims and to furnish a broad base for the accomplishment of the second, the faculty of Fulbright College has adopted the requirements listed below for each degree.

Specific course requirements may be fulfilled in one of four ways:

1. Establishing credit in approved courses:
a. By enrolling in and completing the required work in the course,
b. By examination (credit will be entered as CR on a student's record as explained in Advanced-Standing Programs (p. 64)),
c. By advanced achievement, i.e., by satisfactory completion of a more advanced course of a sequence. For example, students who earn a grade of " $C$ " or better in a third-semester foreign language course may be granted credit for the second semester course upon recommendation of the Department of World Languages, Literatures, and Cultures, and approval by the Dean of the college. (This does not apply to work taken as a self-paced online [correspondence] course or in transfer.)
2. Gaining exemption by examination. Announced exemption examinations are routinely offered in several courses. Students may consult any department or the dean's office concerning exemption examinations.
3. Advanced placement by examination. A student who is granted advanced placement may elect to substitute a more advanced course for the listed required course.
4. Transfer credit. Students presenting transfer credit in lieu of stated requirements may be asked to present official course descriptions, etc. Transfer work with grades of "D" or "F" will not be accepted.

## Degree Completion Program Policy

## Fulbright College of Arts and Sciences Graduation Requirements

In addition to the specific course requirements for the degree plan and major, be aware that there are general graduation requirements that every student in Fulbright College must complete.

1. Minimum Total Semester Hour Requirement
B.A., B.S. and B.S.W. Degrees: 120 hours
B.M.: 120 hours
B.F.A.: 120-123 hours
2. Residency Requirement
a. University Residency (Enrollment) Requirement

Students must earn a minimum of 30 semester hours at the University of Arkansas, Fayetteville campus - this includes UA faculty-led study abroad classes, online/on-campus classes, and Global Campus courses; and all other courses paid towards Fayetteville campus tuition and fees. These 30 semester hours are to be upper-division semester hours required for the completion of a degree program. Additional hours in residence can be required for completing a minor. Hours earned in another school or college at UA, Fayetteville, may be used to satisfy this requirement with approval of appropriate faculty curriculum committee.
b. College Residency Requirement and 24 Hour Rule

A student graduating from Fulbright College must have completed at least 30 hours of credit in courses offered by Fulbright College, at least 24 of which must be 3000 and 4000 level courses from departments in Fulbright College.
c. Major/Minor Residency Requirement (50 Percent Rule) A student graduating with a major or a minor from Fulbright College must have completed a minimum of 50 percent of degree credit work within the Fulbright College major or within the Fulbright College minor at the University of Arkansas through courses completed at the University of Arkansas, Fayetteville campus as defined in the University Residency Requirement. This percentage completion requirement may be higher for some majors and minors. Students should review individual departmental requirements to verify if a higher percentage is required by their specific major or minor department.
3. 40-Hour Rule

Students must present for degree credit at least 40 hours of work in courses numbered 3000 and above. Included in these 40 hours can be courses numbered 2000 if each has a specific course designated as a prerequisite. It is highly recommended that students complete all 40 hours in courses numbered 3000 and higher. These courses may be taken from other colleges or universities as long as the college residency requirement and the 24 -hour rule are satisfied.
4. Grade-Point Average

Students graduating from Fulbright College must have a minimum cumulative GPA of 2.00 .
5. Writing Requirement

Students graduating from Fulbright College must write a research/ analytical paper for at least one upper-division course in his or her major. Each department has determined its own procedures for certifying completion of this requirement. Questions should be referred to the departmental chairperson. A student may choose to write a senior thesis in a major area of study. The thesis may be accorded up to six hours of credit. Defense of the thesis before a committee is required. Satisfactory completion of an honors project or a senior thesis may be submitted to meet the college writing requirement.
6. Students must complete the stated requirements for a Fulbright College major in addition to all university requirements for graduation, including the University Core requirements.

Questions concerning fulfilling the requirements should be referred to the student's adviser or to the dean's office, which will maintain current lists of approved courses, experimental offerings approved to fulfill requirements for a specified period of time, examination schedules, and other options available to the student.

## Graduation with Distinction

Students who have not completed a Fulbright college or departmental honors degree program but have otherwise demonstrated academic excellence in baccalaureate degree programs in the Fulbright College of Arts and Sciences will be recognized at graduation by the designation of "with high distinction" or "with highest distinction." To earn this designation, students must meet the following criteria up through the term prior to their graduation term:

1. The student must have completed at least one-half of his or her degree work at the University of Arkansas.
2. For "with high distinction," the student must achieve a cumulative $U$ of A GPA of 3.8 to 3.899 .
3. For "with highest distinction," the student must achieve a cumulative $U$ of A GPA of 3.9 or higher.

The criteria may be evaluated and changed periodically by the Fulbright College of Arts and Sciences.

## Combined Academic and Medical, Dental, or Pharmacy Degree

Fulbright College offers a Bachelor of Science degree in medical science. A student may substitute the first year of regular medical, dental, or pharmacy work taken in any standard, approved medical, dental, or pharmacy school for 33 hours of the 120 hours required for the Bachelor of Science degree provided that the following requirements are met:

1. Completion of all university/state core requirements for a B.S. degree, as appropriate, prior to student's entrance in medical, dental, or pharmacy school.
2. Completion of at least 30 hours immediately prior to student's entrance in medical, dental, or pharmacy school in residence at the University of Arkansas to include 12 hours of upper division courses (3000 or above) taken in Fulbright College.

Students interested in this degree should consult with their adviser or with the Fulbright College dean's office early in their program. Formal application for the degree should be made to the Registrar.

This program is for highly qualified students with outstanding academic records who may be eligible for early admission to medical, dental, or pharmacy school programs. The year of a medical, dental, or pharmacy study substitutes for the major in the B.S. degree program.

## Graduate Studies

The Graduate School, in cooperation with the faculty of Fulbright College of Arts and Sciences, offers work leading to the graduate certificate or to the degrees of Master of Arts, Master of Science, Master of Music, Master of Fine Arts, Master of Public Administration, Master of Social Work, and Doctor of Philosophy.

Students interested in any of these advanced degrees should consult the Graduate School Catalog or the Dean of the Graduate School.

## Accreditations

The American Council on Education in Journalism and Mass Communications has accredited the Bachelor of Arts (B.A.) degree program in journalism. The Bachelor of Arts (B.A.), Bachelor of Music (B.M.), and Master of Music (M.M.) at the University of Arkansas are accredited by the National Association of Schools of Music. The Doctor of Philosophy (Ph.D.) degree program in clinical psychology is accredited by the American Psychological Association. The Bachelor of Social Work (B.S.W.) degree and the Master of Social Work (M.S.W.) degree are accredited by the Council on Social Work Education.

## Office of the Dean of the College <br> 525 Old Main, 479-575-4804

## Dean

Todd G. Shields

## Associate Deans

Steven J. Beaupre, Jeannine M. Durdik, Calvin White and Anna Zajicek

## Assistant Deans

Simon C. Chua, Lisa J. Summerford

## Office of Academic Services

525 Old Main, 479-575-4801

## Advising Center

Shane W. Barker, Director
Champion's Hall 322, 479-575-3307

## Honors Studies

Lindsey Susan Aloia, Director
517 Old Main, 479-575-2509
World Wide Web: fulbright.uark.edu (http://fulbright.uark.edu/)
E-mail: fulbright@uark.edu
After majors and minors are listed, other programs of study, such as preprofessional programs are listed.

## Majors and Minors <br> Majors

- Advertising and Public Relations (p. 281)
- Anthropology (p. 294)
- Arabic (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/ worldlanguagesliteraturesandcultureswIlc/\#bainarabictext)
- Art (Studio Art) (p. 300)
- Art History (p. 300)
- Biology (p. 330)
- Chemistry (p. 342)
- Classical Studies (p. 355)
- Communication (p. 357)
- Criminology (p. 364)
- Data Science (p. 95)
- Earth Science (p. 393)
- Economics (p. 399) (Bachelor of Arts)
- English (p. 405)
- French (p. 590)
- Geography (p. 418)
- Geology (p. 424)
- German (p. 590)
- Graphic Design (p. 433)
- History (p. 436)
- Interdisciplinary Studies (p. 455)
- International and Global Studies (p. 457)
- Italian (p. 590)
- Journalism (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/journalism-strategic-media/ \#combinationjournalismpoliticalsciencedegreetext)
- Mathematics (p. 468)
- Music (p. 485)
- Philosophy (p. 525)
- Physics (p. 529)
- Political Science (p. 551)
- Psychology (p. 561)
- Social Work (p. 567)
- Sociology (p. 575)
- Spanish (p. 590)
- Theatre (p. 581)


## Combined Majors

- Journalism/Political Science (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/journalism-strategic-media/ \#combinationjournalismpoliticalsciencedegreetext)


## Second (or dependent) Majors

A second (or dependent) major is one that a student may pursue as a major if the student is already pursuing a first major that is authorized to be given independently.

- African and African American Studies (p. 288)
- Asian Studies (p. 329)
- Latin American and Latino Studies (p. 466)
- Middle East Studies (p. 483)


## Minors

Academic minors in approved degree programs are options available to students in the Fulbright College of Arts and Sciences. The minor must be in a field other than the major, and students must notify the department of their intention to minor. An academic minor ordinarily consists of 15-18 hours. Specific requirements for the minor are given in the section entitled Departments, Majors, and Minors. Minors may be chosen from the following fields:

- African and African American Studies (p. 290)
- Anthropology (p. 298)
- Arabic (p. 600)
- Art History (p. 319)
- Asian Studies (p. 329)
- Biology (p. 336)
- Business (p. 695)
- Chemistry (p. 351)
- Child Advocacy Studies Training (p. 571)
- Chinese (p. 601) (Business Orientation)
- Classical Studies (p. 356)
- Communication (p. 359)
- Criminal Justice (p. 366)
- East Asian History and Politics (p. 330)
- Economics (p. 403)
- English (p. 411)
- French (p. 600)
- French (p. 601) (Business Orientation)
- Gender Studies (p. 417)
- Geography (p. 420)
- Geology (p. 428)
- German (p. 600)
- Global Studies (p. 463)
- History (p. 447)
- Indigenous Studies (p. 455)
- Italian (p. 600)
- Japanese (p. 601) (Business Orientation)
- Jewish Studies (p. 465)
- Journalism and Strategic Media (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/journalism-strategic-media/ \#minorinjournalismtext)
- Latin American and Latino Studies (p. 467)
- Legal Studies (p. 556)
- Mathematics (p. 476)
- Medical Humanities (p. 481)
- Medieval and Renaissance Studies (p. 482)
- Middle East Studies (p. 484)
- Music (p. 510)
- Philosophy (p. 527)
- Physics (p. 548)
- Political Science (p. 556)
- Psychology (p. 564)
- Religious Studies (p. 566)
- Rhetoric and Writing Studies (p. 567)
- Russian Studies (p. 600)
- Social Work (p. 572)
- Sociology (p. 576)
- Southern Studies (p. 579)
- Spanish (p. 601)
- Statistics (p. 476)
- Substance Abuse Disorders (p. 572)
- Theatre (p. 587)
- Urban and Regional Planning (p. 556)

Fulbright College also recognizes all official minors offered by sister colleges at the University of Arkansas. Students wishing to have such minors made a part of their transcript must notify the Fulbright College dean's office (MAIN 525) no later than when degree application is made.

## Other Programs <br> Undergraduate Preparation for Professional Programs

The Fulbright College of Arts and Sciences offers comprehensive support for students pursuing a wide array of professional and graduate programs. Because undergraduate preparation for these programs requires diligent planning, students should contact the Advising Center or appropriate faculty advisor as soon as possible. The Fulbright College Advising Center is in Old Main 518 and can be reached at 479-575-3307 or fcac@uark.edu. Supported programs include (but are not limited to) the following:

- Dentistry
- Law
- Medicine
- Optometry
- Pharmacy

Pre-Dental Program: All dental schools require a minimum of three years of college work, and most schools give preference to applicants who have completed a baccalaureate degree. The minimum requirements
for admission to most dental schools can be met at the University of Arkansas by completing the following courses:

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) |
| :---: | :---: |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) |
| BIOL 1543 <br> \& BIOL 1541L | ```Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)``` |
| And at least 8 additional hours of biology (BIOL 1603/BIOL 1601L is recommended) |  |
| PHYS 2013 <br> \& PHYS 2011L | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` |
| PHYS 2033 <br> \& PHYS 2031L | ```College Physics II (ACTS Equivalency = PHYS 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)``` |
| CHEM 1103 <br> \& CHEM 1101L | University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) <br> and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) |
| CHEM 1123 <br> \& CHEM 1121L | University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |
| CHEM 3603 <br> \& CHEM 3601L | Organic Chemistry I and Organic Chemistry I Laboratory |
| CHEM 3613 <br> \& CHEM 3611L | Organic Chemistry II and Organic Chemistry II Laboratory |
| CHEM 3813 | Elements of Biochemistry |

CLEP and AP credit is not accepted. Dental schools have a variety of additional course requirements and pre-dental students should check each school's website.

Mathematics is not a general requirement, but students are expected to have a background equivalent to college algebra and trigonometry.

Students who complete a minimum of 90 hours of work may qualify for the combined degree program provided that they complete the requirements for graduation in Fulbright College of Arts and Sciences.

All dental schools require the Dental Admissions Test. It is suggested that applicants take the DAT one year prior to the time they plan to enter dental school. A student planning a career in dentistry should contact Dr. J.C. Rose, Department of Anthropology, 479-575-2508.

Pre-Law Program: While there is no prescribed pre-law curriculum, Fulbright College offers a minor in legal studies administered through the department of political science. Students considering a career in law may consult the School of Law Catalog or the Fulbright College Advising Center for information concerning certain categories of courses that may be helpful to the study and practice of law. Students uncertain about a major degree program should contact the Fulbright College Advising Center.

A baccalaureate degree is required for admission to the University of Arkansas School of Law, except for those students in the Fulbright College of Arts and Sciences who are admitted to the special six-year program referred to in the paragraph immediately following. All applicants
for admission are required to take the Law School Admission Test. (See page 281.)

The University of Arkansas School of Law at Fayetteville and the Fulbright College of Arts and Sciences jointly administer a six-year program whereby highly qualified students may earn both the bachelor's degree and the Juris Doctor degree. Any student enrolled in the J. William Fulbright College of Arts and Sciences during a spring semester shall be permitted to matriculate in the School of Law in the following fall semester if the admission complies with Section 1 of Part A of the law school's admission policies and if the student meets the following conditions:

1. At least 30 consecutive hours of course work in Fulbright College,
2. At least 94 hours credited toward a bachelor's degree by Fulbright College,
3. Completion of Fulbright College's requirements for a major in connection with the bachelor's degree,
4. A cumulative grade-point average in all college or University course work of at least 3.50 , without grade renewal,
5. An LSAT score of at least 159.

A student may substitute law school course work for the remaining total hours required for the bachelor's degree from Fulbright College. Formal application for the degree should be made to the Registrar. Information about the program may be obtained in the dean's office or the Fulbright Advising Center.

Pre-Medical Program: Medical schools in general require a minimum of 90 semester hours of college credit exclusive of military science and physical education, and most recommend that the student complete a baccalaureate degree. All medical schools have specific course requirements, and the student should determine those requirements for the school or schools of his or her choice. The minimum requirements for many medical schools can be met by completion of the following courses:

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) 3
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) 3
BIOL $1543 \quad$ Principles of Biology (ACTS Equivalency $=$ BIOL 4
\& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS
Equivalency = BIOL 1014 Lab)
Plus one other course in biological sciences, or equivalent. UAMS 3-4 specifically requires:

| BIOL 2323 | General Genetics |  |
| :--- | :--- | ---: |
| CHEM 1103 | University Chemistry I (ACTS Equivalency = | 4 |
| \& CHEM 1101L | CHEM 1414 Lecture) <br> and University Chemistry I Laboratory (ACTS |  |
|  | Equivalency = CHEM 1414 Lab) | 4 |
| CHEM 1123 | University Chemistry II (ACTS Equivalency = | 4 |
| \& CHEM 1121L | CHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS |  |
|  | Equivalency = CHEM 1424 Lab) |  |$\quad 4$


| MATH 1203 \& MATH 1213 | ```College Algebra (ACTS Equivalency = MATH 1103) and Plane Trigonometry (ACTS Equivalency = MATH 1203)``` |
| :---: | :---: |
| or MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) |
| STAT 2823 or STAT 2303 | Biostatistics <br> Principles of Statistics (ACTS Equivalency $=$ MATH 2103) |
| PHYS 2013 <br> \& PHYS 2011L <br> \& PHYS 2033 <br> \& PHYS 2031L | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab) and College Physics II (ACTS Equivalency \(=\) PHYS 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)``` |
| or PHYS 2054 <br> \& PHYS 2074 | University Physics I (ACTS Equivalency = PHYS 2034) and University Physics II (ACTS Equivalency = PHYS 2044 Lecture) |
| 2 Social Sciences | referably: 6 |
| PSYC 2003 | $\begin{aligned} & \text { General Psychology (ACTS Equivalency = PSYC } \\ & \text { 1103) } \end{aligned}$ |
| SOCI 2013 | General Sociology (ACTS Equivalency $=$ SOCI 1013) |

Most medical schools will not accept CLEP credit, and in some cases, AP credit for the required courses above is not accepted.
Most medical schools will not accept on-line or web-based classes to fulfill requirements.
Additional courses are recommended. Special opportunities and experiences are available to pre-medical students through the Liebolt Premedical Program (http://premed.uark.edu (http://premed.uark.edu/)).

Pre-medical students are encouraged to complete the requirements for the B.A. or B.S. degree. As part of these requirements the student must choose a major, but the choice of a major has no direct bearing upon admission to medical school and should reflect the particular interests of the student. If a student is admitted to a medical school prior to completion of the baccalaureate degree requirements, he/she may wish to take advantage of the combined degree program in medical science. If that program is elected, the student should complete all of the basic University and college requirements for graduation during residence on the UA campus.

Most medical schools require the Medical College Admissions Test (MCAT), which is administered at several testing sites in Arkansas on specific dates from January to September each year. The MCAT normally should be taken in the spring preceding application to medical school. Admission to medical school is highly competitive, and a good grade-point average is demanded. A grade-point average of 3.30 is the minimum likely to receive favorable consideration. A grade of " $D$ " in any course required by the medical school is not considered satisfactory. Advising is available through Dr. Neil Allison, Department of Chemistry and Biochemistry, 479-575-5179, and Dr. Jeanne McLachlin, Department of Biological Sciences, 479-575-5348. Dr. Allison serves as chair of the University of Arkansas Pre-medical Advisory Committee. For information, visit the University of Arkansas pre-medical website at http:// premed.uark.edu.

Pre-Pharmacy Program: Entrance requirements for pharmacy schools vary; therefore, students should research the schools of their choice to
determine specific prerequisite course work. The University of Arkansas for Medical Sciences College of Pharmacy requires 69 hours of preprofessional courses to include: 4 hours of calculus, 9 hours of English/ Communication, 16 hours of chemistry, 12 hours of biology, 4 hours of physics, 3 hours of economics, 6 hours of critical thinking/problem solving, and 15 hours of humanities.

Students are advised to begin taking humanities electives during the second semester of their freshman year. Since pharmacy schools have many more applicants than they can accept, the student is urged to earn a grade point average much higher than the minimum of 2.00 .

Grades are a major consideration when admission committees evaluate a student's qualifications for acceptance. The University of Arkansas College of Pharmacy and other pharmacy schools also require applicants to take the Pharmacy College Admission Test (PCAT). This may be taken in November or February. The pre-pharmacy adviser for the University of Arkansas is Lorraine Brewer, Department of Chemistry and Biochemistry, 479-575-3103.

## Undergraduate Certificates <br> Professional Agility and Career Essentials Undergraduate Microcertificate

The goal of this microcredential is to assist students in making the connection between their collegiate major and/or minors and the General Education Learning Outcomes with several future professional career paths.

## Requirements for Professional Agility and Career Essentials Undergraduate Microcertificate

The PACE Undergraduate Microcertificate requires nine credit hours that may be used to fulfill the requirements for an undergraduate degree. The specific requirements are listed below. See an adviser for course selection.

ARSC 310V Fulbright College Elective Internship
Or an approved internship within any Fulbright College academic department
6-8 credit hours from the following:
ARSC 3013 Fulbright College Career Connections
ARSC 3203 Professional ePortfolio
Or other electives related to professional development, including an additional internship, to be approved by the director.
Total Hours

## The Fulbright College Honors Program

Lindsey S. Aloia
Director of Honors Program
525 Old Main
479-575-2509
Fulbright Honors Program Website (https://fulbright.uark.edu/honorsprogram/)

The Fulbright College Honors Program is designed for students who seek an intellectual environment that is engaging, challenging, and rewarding. The Fulbright College of Arts and Sciences provides students with a wholistic education in the arts, humanities, and sciences. Such an education is theoretically grounded, practically innovative, and enriched
by creative faculty. This is especially true for students with superior academic ability and creative talent.

The Fulbright College Honors Program consists of two options:

1. The College Honors Program
2. The Departmental Honors Program.

Students who complete either option are eligible to graduate cum laude, magna cum laude, or summa cum laude.

Admission to the University of Arkansas Honors College assures automatic admission into the Fulbright College Honors Program for incoming students. A student can apply for admission electronically through the Honors College website (https://honorscollege.uark.edu/ apply/). The admission criteria for the Fulbright College Honors Program are as follows:

## Entering Freshmen

Please visit the Honors College Section (https://catalog.uark.edu/ undergraduatecatalog/collegesandschools/honorscollege/) of the catalog

## Continuing and Transfer Students

- 3.5 cumulative grade point average
- An application from a student who is currently on probation in another University of Arkansas College Honors Program is evaluated at the conclusion of his/her/their probationary semester
- An application is not accepted from a student who is within three full semesters of his/her/their anticipated graduation date


## College Honors Program Requirements

The Fulbright College Honors Program requires students to meet all University of Arkansas, Fulbright College of Arts and Sciences, and Department degree requirements. In addition, a student must maintain a cumulative grade point average of 3.5 , complete 29-34 honors hours from specified areas of study, and defend an honors thesis.
B.A./B.S.W. College Honors Requirements $=32$ honors hours

- 8 hours of honors natural sciences or math
- 15 hours of honors social science, fine arts, or humanities
- 9 hours of honors colloquia
- Complete through 2013 of a world language (0-12 hours)
B.S. College Honors Requirements $=34$ honors hours
- 16 hours of honors natural sciences or math
- 9 hours of honors social sciences, fine arts, or humanities
- 9 hours of honors colloquia
- Complete through 2003 of a world language (0-9 hours)
B.F.A./B.M. College Honors Requirements $=29$ honors hours
- 8 hours of honors natural sciences or math
- 15 hours of honors social sciences, fine arts, or humanities
- 6 hours of honors colloquia
- Complete through 1013 of a world language (0-6 hours)


## Departmental Honors Program Requirements

The Fulbright College Honors Program requires students to meet all University of Arkansas, Fulbright College of Arts and Sciences, and Department degree requirements. In addition, a student must maintain a cumulative grade point average of 3.5 , complete 12-24 honors hours, and defend an honors thesis.

## The Fulbright College Honors Program Graduation Levels

The bachelor degrees summa cum laude (with highest honors), magna cum laude (with high honors), or cum laude (with honors) are conferred to students who successfully completed the requirements stated above. Both College Honors and Departmental Honors are eligible for the following designations.

## Summa Cum Laude

- 3.9 cumulative grade point average
- 24 honors hours
- Successful defense of an honors thesis


## Magna Cum Laude

- 3.7 cumulative grade point average
- 18 honors hours
- Successful defense of an honors thesis

Cum Laude

- 3.5 cumulative grade point average
- 12 honors hours
- Successful defense of an honors thesis
*Minimum required honors hours for each level must be completed at the University of Arkansas


## Grade Point Average Considerations

## First-Time Probation Students

Fulbright College Honors Program students must maintain a minimum 3.50 cumulative grade point average. Should a student's grade point average fall below 3.50, the student is placed on probation for the following semester. During this probationary period, the student retains the privilege of membership in the Honors College and the Fulbright College Honors Program. If at the end of the probationary semester, the student's cumulative grade point average is higher than 3.50, the student is removed from probation. If at the end of the probationary semester the student's cumulative grade point average remains below 3.50 , the student is removed from the Honors College and the Fulbright College Honors Program.

## Below 3.00 Cumulative GPA

If a Fulbright College Honors Program student's cumulative grade point average falls below 3.00 at any point, the student is immediately removed from the Honors College and the Fulbright College Honors Program.

## Fulbright Honors Academic Integrity Policy

All Fulbright College Honors students are held to the highest standards regarding academic achievement and academic integrity. Any student who violates the Academic Integrity Policy and receives a sanction of 1.0 or more at the University of Arkansas is permanently removed from the Fulbright College Honors Program. The student may petition for grade forgiveness to remove the sanction from their transcript.

If that is achieved, the student may apply for re-admission into the Fulbright College Honors Program. Any student suspended or expelled for dishonesty is permanently removed from the Honors College and the Fulbright College Honors Program and is denied the opportunity to reapply.

For more information about the Fulbright College Honors Program, visit the College's Honors Program website (https://fulbright.uark.edu/honorsprogram/).

# Advertising and Public Relations (ADPR) 

Larry Foley
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The B.A. in Advertising and Public Relations provides students with knowledge of the history, theory, practice, and ethics of the advertising, public relations and journalism fields, and educates students in advertising, public relations and journalistic skills. Advertising and public relations majors learn the theories and skills of how to create persuasive messages in mass, digital and social media, how to ensure those messages reach the right audience, and how to communicate persuasive messages in a socially responsible way.

## Requirements for B.A. in Advertising and Public Relations

Requirements for a Bachelor of Arts in Advertising/
Public Relations: The following credit hour requirements must be met (see Degree Completion Program Policy (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/) for additional information. In addition, the Fulbright College Writing Requirement may be satisfied by successful completion of JOUR 4981 (https://catalog.uark.edu/search/? $\mathrm{P}=\mathrm{JOUR} \% 204981$ ) Journalism Writing Requirement with a grade of " C " or better.

State Minimum Core (p.81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser. Bolded courses from the course list below may be applied to portions of the State Minimum Core (p. 81) requirements.
State Minimum Core ..... 35
Select one of the following: ..... 3

| MATH 2043 | Survey of Calculus (ACTS Equivalency $=$ MATH <br> 2203) |
| :--- | :--- |
| MATH 2053 | Finite Mathematics |
| MATH 2183 | Mathematical Reasoning in a Quantitative <br> World |


| STAT 2303 | Principles of Statistics (ACTS Equivalency = MATH 2103) |  |
| :---: | :---: | :---: |
| or a higher level math. |  |  |
| World language up to the Intermediate I level (2000-level) |  | 9 |
| Select one of the following: |  | 3 |
| WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) |  |
| WLIT 1123 | World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123) |  |
| An advanced literature course |  |  |
| A language literature course |  |  |
| Select one of the following: |  | 3 |
| PHIL 2003 | Introduction to Philosophy (ACTS Equivalency = PHIL 1103) |  |
| PHIL 2103 | Introduction to Ethics (ACTS Equivalency = PHIL 1003) |  |
| Any philosophy (PHIL) course at the 3000-level or higher (recommended: PHIL 3103 Ethics and the Professions) |  |  |
| PLSC 2003 | American National Government (ACTS Equivalency = PLSC 2003) | 3 |
| A second PLSC course (the following are recommended options): |  | 3 |
| PLSC 2813 | Introduction to International Relations and Global Studies |  |
| PLSC 3233 | The American Congress |  |
| PLSC 4233 | The American Chief Executive |  |
| ECON 2143 | Basic Economics: Theory and Practice | 3 |
| COMM 1313 | Public Speaking (ACTS Equivalency = SPCH 1003) | 3 |
| Any HIST course 3000-level or higher |  | 3 |
| Cultural/Diversity Requirement |  | 3 |
| Choose a course in cultural/diversity studies from the following options: |  |  |
| ANTH 4533 | Middle East Cultures |  |
| COMM 4343 | Intercultural Communication |  |
| HIST 3233 | African American History to 1877 |  |
| HIST 3243 | African American History Since 1877 |  |
| HIST 3263 | History of the American Indian |  |
| JOUR 3263 | African Americans in Film |  |
| JOUR 4923 | History of the Black Press |  |
| SCWK 3193 | Human Diversity and Social Work |  |
| SOCI 3193 | Race, Class, Gender, and Sexuality |  |
| Other cultural/diversity courses as approved by the School of Journalism and Strategic Media. |  |  |
| Journalism and | Strategic Media Core | 16 |

All majors and minors must complete the Grammar, Spelling and Punctuation (GSP) requirement as a prerequisite or co-requisite to JOUR 1033 Media Writing by completing one of these two options: 1) Pass JOUR 1003 Journalistic Writing Skills with a grade of $C$ or better; or 2) Pass JOUR 1100 Grammar Spelling Punctuation Requirement with a Satisfactory (S) grade by scoring a $75 \%$ or better on the GSP test that is administered through the class. Once you officially declare a Journalism major or minor, you will obtain access to the GSP Blackboard course for Option 2. Students who do not complete both the GSP requirement and JOUR 1033 with a C or better cannot enroll in any courses for which JOUR 1033 is a prerequisite. The GSP test is only administered a certain number of times each semester. Students must request a GSP test time a minimum of two weeks before they plan to take the test. There is no guarantee that GSP testing slots will be open when desired, so students must schedule well in advance.
A minimum grade of " $C$ " is required in all journalism courses that serve as prerequisites for advanced journalism and advertising/ public relations courses. In certain courses a minimum grade of " $B$ " is required.

| JOUR 1023 | Media and Society |
| :--- | :--- |
| JOUR 1033 | Media Writing |
| JOUR 3633 | Media Law |
| JOUR 4333 | Ethics in Journalism |
| JOUR 4981 | Journalism Writing Requirement |

Journalism Digital Requirement: JOUR 2032/JOUR 2031L Broadcast News Reporting I and Lab, JOUR 2053 Multimedia Journalism, JOUR 2063 Media Graphics and Technology, or JOUR 405V Specialized Journalism Seminar with the subtopic "Videography/Editing" or "Digital Content Strategy."

## Advertising/Public Relations Courses

Students must have a cumulative GPA of 2.5 or higher to enroll in ADPR 3723 and ADPR 3743.
Students are required to earn a grade of " $B$ " or higher in both ADPR 3723 and ADPR 3743 and maintain a cumulative GPA of 2.5 or higher to qualify to take all other 3000 -level or higher Advertising/Public Relations courses. Students may retake
ADPR 3723 and ADPR 3743 only once to earn a grade of " $B$ " or higher.

| ADPR 3723 | Advertising Principles | 3 |
| :--- | :--- | :--- |
| ADPR 3743 | Public Relations Principles | 3 |
| ADPR 4143 | Public Relations Writing | 3 |
| ADPR 4423 | Creative Strategy and Execution | 3 |
| ADPR 4453 | Media Planning \& Strategy | 3 |
| or ADPR 4473 Account Planning |  |  |
| Six credit hours in JOUR or ADPR courses. It is recommended that <br> one course choice be an internship. | 6 |  |

MKTG 3433 Introduction to Marketing 3
MKTG 3553 Consumer Behavior 3
MKTG 3633 Marketing Research 3

Electives
Non-JOUR/ADPR General Electives 3

Total Hours
Writing Requirement: Successful completion of JOUR 4981 with a grade of "C" or better satisfies the Fulbright College Writing Requirement for journalism majors.

## Advertising/Public Relations B.A. Eight-Semester Plan

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State Minimum Core (p. 81) requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

Second Year
Students have the option of enrolling in ADPR
3723 and ADPR 3743 during the sophomore or
junior year. If enrolling during the sophomore
year, students must have a minimum of 30
credit hours completed, 2.5 cumulative GPA,
and must have completed JOUR 1033 with a C
or better. No in-progress credit hours accepted.
No exceptions will be made.

ADPR 3723 Advertising Principles (must earn a B or better) or if ECON 2013 or ECON 2023 was completed, then take the other ECON not completed in the sequence. If ECON 2143 was completed, then take a Social Sciences State Minimum Core course (Satisfies General Education Outcome 3.3). ${ }^{1}$

PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103)
or PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003)
or any PHIL course numbered 3000 or higher (PHIL 3103 Ethics and the Professions is recommended)
World language at the Intermediate I (2003) level or higher (depending on placement in sequence)
Journalism Digital Requirement
JOUR 2032 Broadcast News Reporting I
\& JOUR 2031L Broadcast News Reporting I Laboratory
JOUR 2053 Multimedia Journalism
JOUR 2063 Media Graphics and Technology
JOUR 405V Specialized Journalism Seminar (with the subtopic "Videography/Editing" or "Digital Content Strategy.")
Science State Minimum Core with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$
ADPR 3743 Public Relations Principles (must earn a B or better)
or Social Sciences State Minimum Core
MKTG 3433 Introduction to Marketing
Satisfies General Education Outcomes 3.2 and 4.1:
WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113) ${ }^{1}$
or WLIT 1123 World Literature: 1650CE to Present
(ACTS Equivalency = ENGL 2123)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{1}$
Science State Minimum Core with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$
Year Total:
16

Units
Fall Spring
Third Year
Units

Students have the option of enrolling in the
ADPR 4143, ADPR 4423, and (ADPR 4453 or
ADPR 4473) course sequence during the junior or senior year. If ADPR 3723 and ADPR 3743 are already completed with a grade of $B$ or
better, then choose one course from the ADPR courses below or complete another remaining degree requirement.
If enrolling during the junior year, students must have a minimum of 60 credit hours completed, 2.5 cumulative GPA, be an Advertising/Public Relations major, and must have completed ADPR 3723 and ADPR 3743, each with a grade of $B$ or better. No in-progress credit hours accepted. No exceptions will be made.
If not completed during sophomore year, then take:
ADPR 3723 Advertising Principles (must earn a $B$ or better)
If ADPR 3723 is already completed, then choose one ADPR course from below or complete another remaining degree requirement.

ADPR 4143 Public Relations Writing
or ADPR 4423 Creative Strategy and Execution
or ADPR 4453 Media Planning \& Strategy
or ADPR 4473 Account Planning
Students need only to complete either ADPR 4453 or ADPR 4473 towards the nine credit hours of the 4000-level ADPR course sequence--not both. If both are completed, then one will count as a JOUR/ADPR elective.

MKTG 3553 Consumer Behavior

JOUR 3633 Media Law
Cultural/diversity requirement or HIST elective 3000-level or higher
Any PLSC course (PLSC 2813 Introduction to

International Relations, PLSC 3233 The American
Congress, and PLSC 4233 The American Chief
Executive are recommended)

If not completed during sophomore year, then take:
ADPR 3743 Public Relations Principles (must earn a B or better)
If ADPR 3743 is already completed, then choose one ADPR course from below or complete another remaining degree requirement.

ADPR 4143 Public Relations Writing
or ADPR 4423 Creative Strategy and Execution
or ADPR 4453 Media Planning \& Strategy
or ADPR 4473 Account Planning
Students need only to complete either
ADPR 4453 or ADPR 4473 towards the nine credit hours of the 4000-level ADPR course sequence--not both. If both are completed, then one will count as a JOUR/ADPR elective.
Cultural/diversity requirement or HIST elective 3000-level or higher

If a HIST course was already completed that satisfies both requirements, then select nonJOUR/ADPR general electives.
MKTG 3633 Marketing Research
Any JOUR or ADPR course
Year Total:

Fourth Year
If not previously completed, and if available,
choose 1-2 courses from the following:
ADPR 4143 Public Relations Writing
or ADPR 4423 Creative Strategy and Exe
or ADPR 4453 Media Planning \& Strategy
or ADPR 4473 Account Planning
Students need only to complete either
ADPR 4453 or ADPR 4473 towards the ni
credit hours of the $4000-$ level ADPR cours
sequence--not both. If both are completed
one will count as a JOUR/ADPR elective.
JOUR 4333 Ethics in Journalism
Any JOUR or ADPR course
3
JOUR 4981 Journalism Writing Requirement
(Satisfies General Education Outcome 6.1) ${ }^{1}$
Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{1}$
Non-JOUR/ADPR General Electives
If not previously completed, then choose 1-3 courses from the following. If all nine hours in the sequence have been completed, then take nonJOUR/ADPR general electives.

ADPR 4143 Public Relations Writing or ADPR 4423 Creative Strategy and Execution
or ADPR 4453 Media Planning \& Strategy
or ADPR 4473 Account Planning
Students need only to complete either ADPR 4453 or ADPR 4473 towards the nine credit hours of the 4000-level ADPR course sequence--not both. If both are completed, then one will count as a JOUR/ADPR elective.
Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3). If already satisfied, then take non-JOUR/ADPR general electives. ${ }^{1}$
Non-JOUR/ADPR General Electives

> Year Total:

15

## Total Units in Sequence:

${ }^{1}$ Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu

These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWv \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks \%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## Requirements for a Minor in Journalism and Strategic Media

All majors and minors must complete the Grammar, Spelling and Punctuation (GSP) requirement as a prerequisite or co-requisite to JOUR 1033 Media Writing by completing one of these two options: 1) Pass JOUR 1003 Journalistic Writing Skills with a grade of C or better; or 2) Pass JOUR 1100 Grammar Spelling Punctuation Requirement with a Satisfactory (S) grade by scoring a $75 \%$ or better on the GSP test that is administered through the class. Once you officially declare a Journalism major or minor, you will obtain access to the GSP Blackboard course for Option 2. Students who do not complete both the GSP requirement and JOUR 1033 with a C or better cannot enroll in any courses for which JOUR 1033 is a prerequisite. The GSP test is only administered a certain number of times each semester. Students must request a GSP test time a minimum of two weeks before they plan to take the test. There is no guarantee that GSP testing slots will be open when desired, so students must schedule well in advance. JOUR 1003 cannot count as a major or minor elective within any Advertising/Public Relations or Journalism major or concentration, or Journalism and Strategic Media minor.

All students seeking a minor in Journalism and Strategic Media must take the following three courses:

| JOUR 1023 | Media and Society |
| :--- | :--- |
| JOUR 1033 | Media Writing |
| JOUR 2003 | Storytelling for Today's Media |

Select one of the following courses:

$$
\begin{array}{ll}
\text { JOUR } 3633 & \text { Media Law } \\
\text { JOUR } 4333 & \text { Ethics in Journalism }
\end{array}
$$

Select two of the following courses with at least one course numbered 6 3000-level or higher:

| JOUR 2053 | Multimedia Journalism |  |
| :--- | :--- | :--- |
| JOUR 2063 | Media Graphics and Technology |  |
| JOUR 3043 | Performer in Mass Media |  |
| ADPR 3553 | Advertising and Public Relations Strategies |  |
| ADPR 4483 | Multiculturalism in Advertising and Public Relations |  |
| Total Hours |  | $\mathbf{1 8}$ |

To display proficiency in grammar, spelling and punctuation, all students who major or minor in journalism must fulfill the School of Journalism and Strategic Media's GSP requirement. Students can meet the requirement in one of two ways: 1) pass the GSP exam with a score of at least $75 \%$; or 2) complete JOUR 1003 Journalistic Writing Skills with a grade of C or

## Requirements for Honors in Journalism and Strategic Media

The Journalism and Strategic Media Honors Program gives undergraduates a chance to pursue journalistic research in the context of other academic disciplines. Honors candidates carry out independent study and research under the guidance of the journalism faculty and participate in honors classes in journalism and at least one other discipline. Outstanding student achievement will be recognized by the award of distinction "Journalism Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in cases of exceptional achievement and are based on the candidate's total honors studies program. To be considered for such distinctions, students must earn a minimum cumulative 3.50 grade-point average in journalism.

Journalism School and College Honors students must complete a minimum of 13 hours in honors credits and a thesis. These requirements are specified as follows:

Journalism School and College Honors students must:

1. Enter the program no later than the first semester of their junior year, and register for JOUR 498VH Honors Journalism Writing Requirement beginning with the first semester of the junior year,
2. Take at least 1 credit of JOUR 498VH every fall and spring semester of the junior and senior year (and all students who do not complete and pass JOUR 498VH in any semester are automatically dismissed from the school's honors program),
3. Complete at least one journalism honors colloquium,
4. Complete the journalism honors core research course JOUR 4943H (offered every spring semester only),
5. Complete an approved honors colloquium in a second discipline,
6. Complete and orally defend an honors thesis based on honors courses of study, and
7. Earn an overall cumulative 3.50 grade-point average and a cumulative 3.50 grade-point average in journalism courses.

In addition, journalism majors pursuing college honors must also satisfy all requirements for the Fulbright College Honors Program and the Honors Core Curriculum for a Bachelor of Arts found elsewhere in this catalog.

More specific information on the requirements for honors in Journalism is available from the School of Journalism and Strategic Media Honors adviser.

Journalism (B.A.) Teacher Licensure Requirements: Students interested in obtaining teacher licensure may not obtain licensure in journalism alone. Licensure in another discipline must be obtained, and journalism may be added as an additional area of licensure. Please refer to the Secondary Education Requirements for Fulbright College Students (p. 276) or contact your departmental adviser or an adviser in the College of Education and Health Professions.

## Faculty

Bostick, David A., Ed.D. (Baker University), M.A. (Fort Hays State University), B.A. (University of Oklahoma), Teaching Associate Professor, 2019, 2023.
Bouchillon, Brandon C., Ph.D. (Texas Tech University), Associate Professor, 2019, 2023.
Brown, Lucy M., Ph.D., M.A. (University of Texas, Austin), M.S. (Pratt Institute), Dip.G.A. (Edna Manley School for the Visual Arts, Jamaica), Teaching Assistant Professor, 2013.

Brown, Michael, M.S., B.S. (Northeastern State University), Instructor, 2018.

Chung, Jee-Young, Ph.D. (University of Alabama), M.A. (University of Houston), B.S., B.A. (Seoul Women's University), Associate Professor, 2015, 2023.
Foley, Larry D., M.S. (University of Central Arkansas), B.A. (University of Arkansas), Professor, 1993, 2005.
Gilbert, Kerry, M.A. (University of Georgia), B.A. (University of West Georgia), Instructor, 2018.
Gould, Kara, Ph.D. (University of Utah), M.A., B.A. (Wheaton College), Assistant Professor, 2016.
King, Tiffany, M.A. (University of Arkansas), B.J. (University of Missouri), Instructor, 2014.
McCaffrey, Raymond, Ph.D. (University of Maryland), M.A. (University of Colorado), M.A. (Columbia University), B.A. (Fairfield University), Associate Professor, 2014, 2020.
McCargo, Renette, M.S.M.C. (Arkansas State University), M.B.A. (University of Phoenix), B.S. (Arkansas State University), Instructor, 2018.
Schulte, Bret J., M.F.A. (George Mason University), B.A. (University of Nebraska-Lincoln), Professor, 2008, 2023.
Shelton, Gina, B.A. (Mississippi State University), Instructor, 2013.
Sosa, Ninette, M.A. (University of Arkansas), B.A. (San Diego State University), Instructor, 2021.
Starling-Ledbetter, Robyn M., M.A., B.A. (University of Arkansas), Instructor, 2007.
Tuychiev, Hayot A., M.A. (University of Arkansas), B.A. (Tashkent State University of Economics), Instructor, 2010.
Wicks, Jan L., Ph.D., M.A. (Michigan State University), B.A. (University of Southwestern Louisiana), Professor, 1994, 2006.

## Advertising/Public Relations Courses

## ADPR 3553. Advertising and Public Relations Strategies. 3 Hours.

Introduction to the research, strategies and tactics used in developing advertising and public relations campaigns. Provides an overview of planning, implementing, and evaluating research-based advertising and public relations campaigns. (Typically offered: Fall and Spring)

## ADPR 3723. Advertising Principles. 3 Hours.

Introductory course to the broad field of advertising. Includes a study of the role of advertising in modern society with emphasis being given to the extent and manner of use of advertising in mass media and digital media. Prerequisite: ((At least 30 credit hours completed; at least a 2.5 cumulative GPA; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; completion of JOUR 1033 with a grade of C or better; completion of JOUR 1003 with a grade of C or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a $75 \%$ or higher) or (At least 30 credit hours completed; at least a 2.5 cumulative GPA; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; must have completed at least 6 credit hours in JOUR courses, each with a grade of C or better.); No in-progress credit hours accepted. (Typically offered: Fall and Spring)

## ADPR 3743. Public Relations Principles. 3 Hours.

Study of theory, methods, and ethics of public relations in modern society, business, and communications. Influencing opinion through acceptable performance and 2way communication. Prerequisite: ((At least 30 credit hours completed; at least a 2.5 cumulative GPA; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; completion of JOUR 1033 with a grade of C or better; completion of JOUR 1003 with a grade of $C$ or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a $75 \%$ or higher) or (At least 30 credit hours completed; at least a 2.5 cumulative GPA; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; must have completed at least 6 credit hours in JOUR courses, each with a grade of $C$ or better.); No inprogress credit hours accepted. (Typically offered: Fall and Spring)

ADPR 4143. Public Relations Writing. 3 Hours.
Instructional and writing practice to develop the professional-level writing skills required of public relations practitioners. Emphasizes different approaches required for different audiences and media. Prerequisite: Minimum of 60 credit hours completed, 2.5 cumulative GPA, ADPR major, and completion of ADPR 3723 and ADPR 3743, each with a grade of B or better; no in-progress credit hours accepted. (Typically offered: Fall and Spring)

## ADPR 4423. Creative Strategy and Execution. 3 Hours.

The creation of advertising copy and layout for the mass media with emphasis on strategy, the written message, and the physical appearance for the advertisement. Includes laboratory component. Prerequisite: Minimum of 60 credit hours completed, 2.5 cumulative GPA, ADPR major, and completion of ADPR 3723 and ADPR 3743, each with a grade of $B$ or better; no in-progress credit hours accepted. (Typically offered: Fall and Spring)

## ADPR 4453. Media Planning \& Strategy. 3 Hours.

Includes the study of media characteristics, market research, media strategies, media analysis, media-market measurements and the development of media plans. Emphasis is placed on the analysis of major mass media and digital strategies, tactics, and planning. Prerequisite: Minimum of 60 credit hours completed, 2.5 cumulative GPA, ADPR major, and completion of ADPR 3723 and ADPR 3743, each with a grade of B or better; no in-progress credit hours accepted. (Typically offered: Fall and Spring)

## ADPR 4463. Campaigns. 3 Hours.

Applying advertising principles and techniques to preparation of a complete campaign; determining agency responsibilities, marketing objectives and research, media mix, and creative strategy. Emphasis also given to campaign presentation delivery, utilizing audio and visual techniques. Prerequisite: ADPR 3723 and ADPR 3743, each with a grade of B or better, ADPR major, and 2.5 overall GPA. (Typically offered: Fall and Spring)

ADPR 4473. Account Planning. 3 Hours.
An introduction to applied advertising research and account planning. Integrate consumers' perspectives into creative strategy to developing brand stories for clients. Write creative briefs, positioning statements and prepare copy-testing research instruments to evaluate messages. Utilize consumer research for creating messages for diverse cultures. Prerequisite: Minimum of 60 credit hours completed, 2.5 cumulative GPA, ADPR major, and completion of ADPR 3723 and ADPR 3743, each with a grade of $B$ or better; no in-progress credit hours accepted. (Typically offered: Fall and Spring)
This course is cross-listed with AAST 4473.
ADPR 4483. Multiculturalism in Advertising and Public Relations. 3 Hours.
Seminar course involving the critical examination of the major cultural, social, political, economic, ethical and persuasion theories and/or issues relevant to advertising and public relations. (Typically offered: Fall)

## Journalism Courses

JOUR 1003. Journalistic Writing Skills. 3 Hours.
Provides a functional approach to improving language and writing skills specific to journalistic writing. Covers introductory journalistic writing and correct grammar usage, the logic governing syntax and punctuation use, analysis of grammar and syntax, sentence structure, word selection to convey proper meaning, memory aids, and other language topics relevant to journalistic writing. Cannot count as a major or minor elective within any ADPR or Journalism major or concentration, or Journalism and Strategic Media minor. Prerequisite: Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent. (Typically offered: Fall and Spring)

## JOUR 1023. Media and Society. 3 Hours.

A survey of mass media (newspaper, radio, TV, magazine, advertising, public relations, photography, etc.) which stresses their importance in today's society and introduces the student to the various areas in journalism. Recommended for students considering journalism as a major. Prerequisite: Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent. (Typically offered: Fall and Spring)

## JOUR 1033. Media Writing. 3 Hours.

Introduces students to the skills of observation, critical thinking and concise writing required in all aspects of journalism and strategic media, as well as to the technology needed in upper-level courses. A prerequisite to JOUR 2003, JOUR 2013, JOUR 2031L, JOUR 2032, JOUR 2053, ADPR 3723 and ADPR 3743. Corequisite: Lab component. Pre- or Corequisite: JOUR 1003 or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a $75 \%$ or higher. Prerequisite: Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent. (Typically offered: Fall, Spring and Summer)

## JOUR 1100. Grammar Spelling Punctuation Requirement. 0 Hours.

Students must complete the Grammar Spelling Punctuation (GSP) requirement as a prerequisite or corequisite to JOUR 1033 Media Writing. Students who do not take JOUR 1003 Journalistic Writing Skills to complete the GSP must take JOUR 1100, study for the GSP on their own and pass by earning a $75 \%$ or higher on the GSP test administered by the School of Journalism and Strategic Media. (Typically offered: Fall and Spring)

## JOUR 2003. Storytelling for Today's Media. 3 Hours.

Introduction to developing content strategies that tell accurate, concise stories across multiple media platforms. Emphasizes clear, effective storytelling in media content production for print, broadcast and digital platforms, including social media, podcasting, video, and short-feature writing. Integrates lessons on corporate social responsibility, personal branding and media entrepreneurship. Prerequisite: (Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent) and JOUR 1033. (Typically offered: Fall and Spring)

## JOUR 2013. News Reporting I. 3 Hours.

Intensive training in the methods of gathering and writing news. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: Must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; JOUR 1023 and JOUR 1033, each with a grade of C or better, and either 1) JOUR 1003 with a grade of C or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a $75 \%$ or higher, or 2) at least 30 credit hours completed. (Typically offered: Fall and Spring)

## JOUR 2031L. Broadcast News Reporting I Laboratory. 1 Hour.

Provides experience in basic broadcast news reporting techniques. Laboratory 3 hours per week. Corequisite: JOUR 2032. Prerequisite: ((At least 30 credit hours completed; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; JOUR 1033 with a grade of $C$ or better; JOUR 1003 with a grade of $C$ or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a $75 \%$ or higher)) or (At least 30 credit hours completed; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; must have completed at least 6 credit hours in JOUR courses, each with a grade of $C$ or better.) (Typically offered: Fall and Spring)

## JOUR 2032. Broadcast News Reporting I. 2 Hours.

Intensive training in the methods of gathering and writing broadcast news. Lecture 2 hours per week. Corequisite: JOUR 2031L. Prerequisite: ((At least 30 credit hours completed; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; JOUR 1033 with a grade of $C$ or better; JOUR 1003 with a grade of $C$ or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a $75 \%$ or higher)) or (At least 30 credit hours completed; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; must have completed at least 6 credit hours in JOUR courses, each with a grade of $C$ or better.) (Typically offered: Fall and Spring)
JOUR 2053. Multimedia Journalism. 3 Hours.
Provides students with the skills of visual literacy, photo editing, audio processing, video editing and web publishing. Good writing will be emphasized. The course examines basic aesthetic principles in visual composition and techniques applicable to audio, video and web production. Prerequisite: Must be a Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or obtain department consent; JOUR 1023 and JOUR 1033, each with a grade of C or better, and either 1) JOUR 1003 with a grade of $C$ or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a $75 \%$ or higher, or 2) At least 30 credit hours completed. (Typically offered: Fall and Spring)

## JOUR 2063. Media Graphics and Technology. 3 Hours.

Introduction to computer skills required in journalism; focuses on training in the major creative software used for generating media graphics and visual communication. Emphasizes content creation and web publishing, including infographics and promotional materials. Prerequisite: Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent. (Typically offered: Fall and Summer)
JOUR 2331L. Photojournalism I Laboratory. 1 Hour.
Photojournalism 1 Lab involves the transfer of images from a digital camera to a computer, and involves the use of image editing and enhancing software as well as layout and design software. Corequisite: JOUR 2332. (Typically offered: Fall)

## JOUR 2332. Photo Journalism I. 2 Hours.

Beginning course in the fundamentals of photography, including digital photography, composition, file transfer and management, image enhancement, and layout and design. Corequisite: JOUR 2331L. (Typically offered: Fall)

## JOUR 2453. Introduction to Sports Television Production I. 3 Hours.

Introduction to the specialized field of sports television production. Focuses on multicamera, single-camera and studio production. Studio lab and field work outside of regularly scheduled class time required. (Typically offered: Fall)

## JOUR 3013. Editing. 3 Hours.

Theories and practices in newspaper editing, copyreading, headline writing, page layout and the gathering and publication of written and pictorial information. Prerequisite: JOUR 1023 and JOUR 2013, each with a grade of C or better. (Typically offered: Fall and Spring)

## JOUR 3023. News Reporting II. 3 Hours.

Continuation of JOUR 2013. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: JOUR 2013 with a grade of C or better. (Typically offered: Fall and Spring)

## JOUR 3043. Performer in Mass Media. 3 Hours.

Introduction to performing in mass media on video, digital, and audio, while connecting effectively with audiences as journalists, spokespersons, experts, activists, or in other roles. Emphasizes principles and best practices related to performing on camera and microphone, voice and movement, researching and critiquing performances, and diversity and ethical performance. (Typically offered: Fall and Spring)

## JOUR 3071L. Broadcast News Reporting II Laboratory. 1 Hour.

Continuation of JOUR 2031L. Including advanced skills in broadcast news techniques. Corequisite: JOUR 3072. Prerequisite: JOUR 2032 and JOUR 2031L, each with a grade of $C$ or better. (Typically offered: Fall and Spring)

JOUR 3072. Broadcast News Reporting II. 2 Hours.
Continuation of JOUR 2032. Including advanced methods of gathering and writing broadcast news. Corequisite: JOUR 3071L. Prerequisite: JOUR 2032 and JOUR 2031L, each with a grade of C or better. (Typically offered: Fall and Spring)
JOUR 3123. Enterprise Journalism. 3 Hours.
Developing ideas and subjects for feature and human-interest articles for multiple platforms, with emphasis on the freelance trade. Instruction in idea generation, story pitches, interviewing methods, research, writing, revision, and narrative structure. Prerequisite: JOUR 2013 with a grade of $C$ or better. (Typically offered: Fall and Spring)

## JOUR 3163. Sports Journalism. 3 Hours.

Emphasis on techniques and principles of coverage of sports and sports-related subjects on and off the field, and on the relationship between sports and the mass media. (Typically offered: Fall)
JOUR 3263. African Americans in Film. 3 Hours.
A survey of the history of images of African Americans in film, especially as these images are examined in the context of stereotypical renditions and/or realistic representations of African American experiences. Issues of African American history, culture, and socio-political context will be addressed in the analyses of these films. Prerequisite: ENGL 1023 and junior or senior standing. (Typically offered: Irregular) This course is cross-listed with AAST 3263, ENGL 3263, COMM 3263.

## JOUR 3273. African Americans in Documentary Film. 3 Hours.

Exploration of the African-American image and experience in the context of time, historical record and varying production viewpoints from diverse documentarians. African-American history, culture and socio-political context are addressed in the analyses of these documentary films from the perspectives of mainstream media, independent filmmakers and minority documentarians. Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is cross-listed with AAST 3273, COMM 3273.

## JOUR 3633. Media Law. 3 Hours.

Constitutional guarantees, statutory laws and court cases applicable to mass communications. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

## JOUR 3923H. Honors Colloquium. 3 Hours.

Covers a special topic or issue, offered as a part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in journalism). (Typically offered: Fall and Spring) May be repeated for degree credit.

## JOUR 401V. Advanced Journalistic Practices. 1-4 Hour.

Study of advanced journalistic practices and methods, individual or group projects. May only be taken once for degree credit. Prerequisite: Junior standing and 10 hours of journalism and a 2.5 cumulative grade average. (Typically offered: Fall and Spring)

## JOUR 402V. Internship in Journalism. 1-3 Hour.

Credit for practical experience gained through a journalistic internship. Report required on significant aspect of internship experience. Prerequisite: Journalism or Advertising and Public Relations major, and junior standing, and 10 hours JOUR/ ADPR courses, and 2.50 minimum cumulative grade point average. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

JOUR 4033. Advanced Radio News Reporting and Podcasting. 3 Hours.
Research, write and produce in-depth public radio style news stories and turn them into a three-episode podcast. Prerequisite: Instructor consent. (Typically offered:
Spring)

## JOUR 4043. Government and the Media. 3 Hours.

Focuses on the links between mass media and government and the increasingly significant role of media in politics and government. Examines the power, responsibility, and performance of the press and public officials/government agencies in their relationship with each other. Prerequisite: Junior standing (Typically offered: Fall)

## JOUR 405V. Specialized Journalism Seminar. 1-3 Hour.

Primary purpose of course is to enlarge the journalistic skills of students interested in advanced forms of mass communication. Students undertake projects related to particular aspects or problems of journalism. Content varies. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

## JOUR 4063. Computer-Assisted Publishing. 3 Hours.

In-depth, hands-on exploration of computer hardware and software in the design and production of media messages. Examination of developing media technologies and the computer's influence on design and conceptualization. (Typically offered: Irregular)

## JOUR 4073. Social Media and Journalism. 3 Hours.

Social Media and Journalism teaches conceptual knowledge and skills to develop news judgment and use changing technological tools to disseminate news quickly and to different audiences. The value of interacting with sources and the audience is stressed as are ethical, legal and accuracy issues. Prerequisite: JOUR 2013 or JOUR 2032 with a grade of C or better. (Typically offered: Fall)

JOUR 4083. Data Journalism. 3 Hours
An introduction to basic data reporting skills, including how to use data to guide and inform reporting as well as tell stories to better serve the public. Ethical issues and best practices in data reporting are also examined. Prerequisite: Any STAT course or instructor permission. (Typically offered: Fall)

JOUR 4093. Business Journalism. 3 Hours.
Examines how the U.S. economy works and how to find news in business, market and government data sources. Focuses on the role of corporations, financial markets, and regulators, and benefiting students interested in sports, entertainment, political and investigative journalism. (Typically offered: Spring)

JOUR 4313. Literature of Journalism. 3 Hours.
Surveys the works of book and magazine-length narrative non-fiction, from the mid-19th century to the present. (Typically offered: Fall)

JOUR 4333. Ethics in Journalism. 3 Hours.
Critical examination of specific ethical problems confronting professionals in all areas of mass communications. Reading and writing assignments are aimed at familiarizing students with the nature of the mass media and their social responsibilities. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

JOUR 443V. Event Promotion and Execution. 1-3 Hour.
Practicum for students to plan, design, promote and execute several Journalism Days events, to include the Roy Reed Lecture, a scholarship reception, a job fair, Senior Salute and a fundraiser. Prerequisite: Junior standing. (Typically offered: Spring)

## JOUR 4503. Magazine Writing. 3 Hours.

Advanced long-form depth reporting and narrative writing augmented with multimedia, with an eye to generating the style of work found in such leading magazines as The New Yorker, the Atlantic, and Esquire. Advanced instruction in generating and pitching stories, reporting and writing for narrative, research. Stories are frequently published in nationally acclaimed student-magazine, Hill. Prerequisite: JOUR 2013 with a grade of C or better. (Typically offered: Spring)

JOUR 4863. Television News Reporting I. 3 Hours.
Continuation of JOUR 3072 and JOUR 3071L. Includes the specialized knowledge and skills needed in field reporting, anchoring, writing, and producing news for commercial television. Lab component arranged. Corequisite: Lab component. Prerequisite: JOUR 3072 and JOUR 3071L, each with a grade of C or better. (Typically offered: Fall and Spring)

JOUR 4873. Television News Reporting II. 3 Hours.
Continuation of JOUR 4863. Laboratory component arranged. Prerequisite:
JOUR 4863 with a grade of $C$ or better. (Typically offered: Fall and Spring)
JOUR 4883. Advanced Film \& Video Feature Production. 3 Hours.
Students research, write, direct, produce, shoot and edit non-fiction short feature films and videos for television, streaming and other presentations, including corporate and nonprofit use. Corequisite: Lab component. Prerequisite: JOUR 4863 with a grade of C or better, or instructor consent. (Typically offered: Irregular)

## JOUR 4893. Television News Producing. 3 Hours.

Intensive training in methods of producing a live television news broadcast, including news gathering, writing broadcast copy and production strategies. Lab 6 hours. Corequisite: Lab component. Prerequisite: JOUR 3072 and JOUR 3071L, each with a grade of C or better. (Typically offered: Fall and Spring)

JOUR 4903. Community Journalism. 3 Hours.
This three-hour course will blend student' reporting and editing skills with instruction on how regional newspapers select and present news to a local audience. This course will instruct students in deciding news stories for regional readers, how those stories can best be written and displayed. The semester goal is to publish a paper. Prerequisite: Junior standing. (Typically offered: Spring)

JOUR 4923. History of the Black Press. 3 Hours.
Covers the historic context of contributions and innovations to U.S. newspapers by African Americans. Also investigates the role of the black press from its beginnings in 1827 through the civil rights movement. Prerequisite: Junior standing. (Typically offered: Spring Even Years)
This course is cross-listed with AAST 4923.
JOUR 4943H. Honors Research Methods in Journalism. 3 Hours.
Emphasis on the major types of qualitative and quantitative research, electronic data base searching, and traditional library research. Prerequisite: Journalism or Advertising and Public Relations major and honors standing. (Typically offered: Spring)

JOUR 4981. Journalism Writing Requirement. 1 Hour.
Directed study in conceptualizing, researching, and writing a major paper to meet the college writing requirement. Students must make a C in order to satisfy the college writing requirement. Prerequisite: 90 hours. (Typically offered: Fall and Spring)

JOUR 498VH. Honors Journalism Writing Requirement. 1-6 Hour. Honors journalism writing requirement. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

This course is equivalent to JOUR 4981.

## African and African American Studies (AAST)

Caree Banton
Director
230 Memorial Hall

## 479-575-4086

African and African American Studies Website (https://fulbright.uark.edu/ area-studies/african-and-african-american-studies/)

The African and African American Studies program promotes an interdisciplinary approach to the study of the history, culture, and identity of Africans and African Americans. Students may pursue African and African American Studies as a second major alongside a primary major in Fulbright College. Students in any college may declare a minor. Advice on suitable primary majors to be taken with an African and African American Studies second major may be obtained from the program director of African and African American Studies.

## Requirements for a Dependent Major in African and African American Studies

A total of 21 credit hours in African and African American Studies courses in addition to the requirements of another major.

## Requirement 1

| AAST 1003 | Introduction to African and African American Studies | 3 |
| :---: | :---: | :---: |
| or AAST 2023 | The African American Experience |  |
| Requirement 2 |  |  |
| Select one course | from the following: | 3 |
| $\begin{aligned} & \text { ENGL/AAST } \\ & 3853 \end{aligned}$ | Topics in African-American Literature and Culture |  |
| HIST/AAST $3233$ | African American History to 1877 |  |
| HIST/AAST $3243$ | African American History Since 1877 |  |
| $\begin{aligned} & \text { HIST/AAST } \\ & 3253 \end{aligned}$ | The History of Sub-Saharan Africa |  |
| $\begin{aligned} & \text { PLSC/AAST } \\ & 3293 \end{aligned}$ | Black Politics |  |
| $\begin{aligned} & \text { SOCI/AAST } \\ & 4153 \end{aligned}$ | Race and Society |  |

## Requirement 3

15 credit hours from the following courses listed below. Courses listed 15 under Requirement 2 may also be used towards Requirement 3 if not already being used in Requirement 2, and a maximum of nine credit hours may come from a single department. At least six credit hours must be numbered at the 4000-level or higher.

| AAST 3103 | Diversity, Pedagogy, \& Visual Culture |
| :--- | :--- |
| AAST 2053 | The Black Student-Athlete |
| AAST 3023 | African Americans in Sport |
| AAST 3123 | African American Students in Higher Education |
| AAST 3923H |  |
| AAST 3973 | South Africa: The Long, Ongoing Walk to Freedom |
| AAST 399VH | Honors African \& African American Studies Thesis |
| AAST 4003 | African \& African American Studies Study Abroad |
| AAST 489V | African \& African American Independent Study |
| AAST 499V | African and African American Studies Seminar |
| ANTH 4513 |  |
| ANTH 4583 | Cultures of Africa |

COMM/ENGL/ African Americans in Film JOUR/AAST
3263
COMM/JOUR/ African Americans in Documentary Film
AAST 3273
ENGL 3263 African Americans in Film
ENGL/AAST Studies in African American Literature and Culture
4853
HIST/AAST History of Race and Medicine
1233
HIST/AAST History of Sports in Africa
3133
HIST/AAST

## 3193

HIST 3623/
AAST 3983
HIST/AAST
4093
HIST/AAST
4123
HIST/AAST
4263
HIST/AAST The American Civil Rights Movement
4383
HIST/AAST
4483
HIST/AAST
4563
HIST 4573

## HIST/AAST

4813
HIST/AAST
4823
HIST/AAST
4963
INST 3503
JOUR/AAST
4923
PLSC/AAST
3393
PLSC/AAST
4323
PLSC/AAST
4933
PORT 3203
SCWK/AAST
4163
SCWK/AAST
4173
SWAH 1003
SWAH 1013
SWAH 2003
SWAH 2013
THTR 4463 African American Theatre History -- 1950 to Present

Additional Special Topics and Independent Study courses may be used to satisfy this requirement if the courses have been approved by the AAST director. Check the program website for a list of these approved courses.

## Total Hours

Interested students or those wanting further information should consult with the African and African American Studies Director for selection of appropriate classes and for information on other courses that can apply to the major and/or minor.

## Requirements for a Minor in African and African American Studies:

A total of 15 hours in African and African American Studies courses in addition to the requirements for the departmental major including the following:

| AAST 1003 | Introduction to African and African American <br> Studies | 3 |
| :--- | :--- | :--- |
| or AAST 2023 |  |  | | The African American Experience |
| :--- | :--- |

4153
The remaining nine hours shall be selected from the courses listed in Requirement 3 of the Requirements for a Second Major in African American Studies. A maximum of six of the nine hours may be submitted from courses taken in any one department.

## Total Hours

Interested students or those wanting further information should consult with the African and African American Studies Director for selection of appropriate classes and for information on other courses that can apply to the major and/or minor.

Requirements for Honors in African and African American Studies: The Honors Program in African and African American Studies gives junior and senior students of high ability the opportunity to enroll in enriched courses and conduct independent research culminating in an honors thesis. In addition to satisfying the general Fulbright College requirements for graduation and the basic eligibility requirements for honors as established by the Honors Council, candidates for honors in African and African American Studies must complete 12 hours of honors credit in partial satisfaction of requirements for the co-major. One to six of these may be thesis hours (AAST 399VH). The remaining six hours must be relevant honors colloquia or graduate courses (with permission) in one of the departments contributing to this interdisciplinary area of study. The 12 hours of honors credit will satisfy elective requirements in co-major requirement three above. The thesis committee shall include at least two faculty members affiliated with African and African American Studies. Successful completion of these requirements will be recognized
by the award of the distinction "African and African American Studies Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Faculty

Adams, Paul D., Ph.D. (Case Western Reserve University), B.S. (Louisiana State University), Professor, Department of Chemistry and Biochemistry, 2006, 2021.
Angton, Alexia, Ph.D., M.S., B.A. (lowa State University Ames), Assistant Professor, Department of Sociology and Criminology, 2022. Austin, Shawn, Ph.D., M.A. (University of New Mexico), B.A. (Brigham Young University-Idaho), Associate Professor, Department of History, 2015.

Bailey, Tameka A., Ph.D. (University of Arkansas), B.S. (University of Arkansas-Pine Bluff), Research Assistant Professor, Department of Biological Sciences, 2017.
Banton, Caree A., Ph.D. (Vanderbilt University), M.A. (University of Ghana), M.A. (University of New Orleans), B.A./B.P.A. (Grambling State University), Associate Professor, Department of History, 2013, 2019.
Baptist, Najja K., Ph.D. (Howard University), M.A. (Jackson State University), B.A. (North Carolina Central University), Assistant Professor, Department of Political Science, 2020.
Brown, Lucy M., Ph.D., M.A. (University of Texas, Austin), M.S. (Pratt Institute), Dip.G.A. (Edna Manley School for the Visual Arts, Jamaica), Teaching Assistant Professor, School of Journalism and Strategic Media, 2013.

Calabretta-Sajder, Ryan C., Ph.D. (Middlebury College), M.A. (Indiana University-Bloomington), B.A. (Dominican University), Associate Professor, Department of World Languages, Literatures and Cultures, 2013, 2022.
Cleveland, Todd, Ph.D. (University of Minnesota), M.A., B.A. (University of New Hampshire), Professor, Department of History, 2015, 2021.
Corrigan, Lisa, Ph.D., M.A. (University of Maryland-College Park), B.A.
(University of Pittsburgh), Professor, Department of Communication, 2007, 2019.
D'Alisera, JoAnn, Ph.D., A.M. (University of Illinois-Urbana-Champaign), B.A. (State University of New York at New Paltz), Associate Professor, Department of Anthropology, 1999, 2005.
Davis, Geffrey, Ph.D., M.F.A., M.A. (Penn State University), B.A. (Oregon State University), Associate Professor, Department of English, 2014, 2019.

Ewelukwa, Uche U., S.J.D., LL.M. (Harvard University), LL.M. (University College, London), J.D. equivalent (University of Nigeria), Professor, School of Law, Arkansas Bar Foundation Professor of Law, 2001, 2010.
Fields, Lashawnda, Ph.D., M.S.W. (Washington University), Assistant Professor, School of Social Work, 2020.
Gigantino, Jim, Ph.D. (University of Georgia), B.A. (University of Richmond), Professor, Department of History, 2010, 2018.
Lorenzo, Violeta, Ph.D. (University of Toronto), M.A., B.A. (University of Florida), Associate Professor, Department of World Languages, Literatures and Cultures, 2014, 2020.
Marren, Susan M., Ph.D., M.A. (University of Michigan-Ann Arbor), B.A. (Cornell University), Associate Professor, Department of English, 1995, 2002.

Mensah, Angela, Ph.D. (Bowling Green State University), M.A. (Western Michigan University), B.A. (Ferris State University), Teaching Assistant Professor, Department of Communication, 2022.
Mosley, Jacquelyn Dee, Ph.D. (Texas Tech University), M.S. (Arizona State University), B.A. (University of Northern lowa), Professor, School of Human Environmental Sciences, 2021, 2016.

Murdock, Jeffrey A., Ph.D. (University of Memphis), M.M., B.M.
(University of Southern Mississippi), Assistant Professor, Department of Music, 2015.
Murphy-Erby, Yvette, Ph.D. (University of North Carolina at
Greensboro), M.S.W. (University of North Carolina, Chapel Hill), B.A.
(University of North Carolina, Charlotte), Professor, School of Social Work, 2004, 2013.
Pritchard, Eric, Ph.D., M.A., (University of Wisconsin-Madison), B.A.
(Lincoln University in Pennsylvania), Associate Professor, Department of English, 2021.
Robinson, Charles F., Ph.D. (University of Houston), M.A. (Rice University), B.A. (University of Houston), Professor, Department of History, 1999, 2011.
Starks, Trish, Ph.D., M.A. (The Ohio State University), B.A. (University of Missouri), Professor, Department of History, 2000, 2018.
Sytsma, Janine A., Ph.D. (University of Wisconsin-Madison), M.A. (University of Denver), B.A. (Arizona State University), Assistant Professor, School of Art, 2016.
Valandra, Ph.D., M.S.W. (University of Minnesota), M.B.A., B.S.
(University of Nebraska at Omaha), Associate Professor, School of Social Work, 2013, 2019.
Whayne, Jeannie, Ph.D., M.A., B.A. (University of California-San Diego), University Professor, Department of History, 1990, 2015.
White, Calvin, Ph.D. (University of Mississippi), M.A., B.A. (University
of Central Arkansas), Associate Professor, Department of History, 2007, 2013.

## Courses

AAST 1003. Introduction to African and African American Studies. 3 Hours. This course is an introduction to the interdisciplinary study of Africa and African Americans and their impact on the world order and society with an emphasis on that impact's manifestations in the United States of America. (Typically offered: Fall and Spring)
AAST 1233. History of Race and Medicine. 3 Hours.
Examines history of western biomedicine on the intersection of science, medicine, and race to trace origins of current racial disparities. Examples from the United States and other international developments. (Typically offered: Irregular)
This course is cross-listed with HIST 1233.

## AAST 2023. The African American Experience. 3 Hours.

Examines various facets of African American culture that collectively construct the African American experience including art, literature, drama, migration, film, and education. Covers issues facing African Americans through a cultural and sociopolitical context to understand and appreciate African American impacts on the United States. (Typically offered: Fall, Spring and Summer)

## AAST 2053. The Black Student-Athlete. 3 Hours.

Examines and deconstructs the experiences of Black student-athletes as they figure in University social, political, and economic life, as well as in popular culture and other aspects of our contemporary societies. Sources include poetry, music, websites, athletic manuals, contracts, as well as other media. (Typically offered: Fall, Spring and Summer)

## AAST 3023. African Americans in Sport. 3 Hours.

Historical, sociological, and political issues and debate surrounding African Americans in sport. Contemporary issues facing African American athletes and sports figures. (Typically offered: Fall, Spring and Summer)

AAST 3103. Diversity, Pedagogy, \& Visual Culture. 3 Hours.
Investigates various issues of diversity and equity in relation to art and education. It discusses the application of the theories of diversity and equity into teaching, community organizing, activism, and art practices. Prerequisite: ARED 3003. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with ARED 3103.
AAST 3123. African American Students in Higher Education. 3 Hours. Examines the impact of college environments on African American students. Focuses on the following topics regarding African American students: retention, student demographics, student characteristics, current trends, issues and problems, student success, sub-populations, student values, and implications for higher education. (Typically offered: Irregular)

AAST 3133. History of Sports in Africa. 3 Hours.
This course considers the ways that Africans have strategically employed sports to confront and overcome both domestic and external challenges and how these approaches and the range of constituent strategies have changed over time. (Typically offered: Irregular)
This course is cross-listed with HIST 3133.

## AAST 3193. The Making of the Modern Caribbean. 3 Hours.

History of the Caribbean from pre-Columbian to present times focusing in particular on indigenous origins, colonialism, slavery, rebellion, independence, nationalism, and political integration in the making of the modern Caribbean region. (Typically offered: Fall)
This course is cross-listed with HIST 3193.
AAST 3233. African American History to 1877. 3 Hours.
History of the African American experience in North America emphasizing economic, social, and cultural perspectives. Topics include the African slave trade, the creation of race and racism, the institution of slavery, free community formation in North, and the impact of the Civil War and Reconstruction on African Americans. (Typically offered: Fall and Spring)
This course is cross-listed with HIST 3233.

## AAST 3243. African American History Since 1877. 3 Hours.

The course will study the major social, political, and economical issues relating to the African American experience beginning with the late post-Reconstruction period and will include all of the major personalities and influences in the Civil Rights Movement, from 1877 to the present. (Typically offered: Fall and Spring)
This course is cross-listed with HIST 3243.
AAST 3253. The History of Sub-Saharan Africa. 3 Hours.
Sub-Saharan African history from the 18th century to the present, with emphasis on the impact of the slave trade, colonization, Independence, and contemporary issues of the post-colonial period. Examination of the ways Africans experienced change in terms of culture, society, economics, gender, religion, politics, and labor. (Typically offered: Fall)
This course is cross-listed with HIST 3253.
AAST 3263. African Americans in Film. 3 Hours.
A survey of the history of images of African Americans in film, especially as these images are examined in the context of stereotypical renditions and/or realistic representations of African American experiences. Issues of African American history, culture, and socio-political context will be addressed in the analyses of these films. Prerequisite: ENGL 1023 and junior or senior standing. (Typically offered: Irregular) This course is cross-listed with ENGL 3263, JOUR 3263, COMM 3263.

AAST 3273. African Americans in Documentary Film. 3 Hours.
Exploration of the African-American image and experience in the context of time, historical record and varying production viewpoints from diverse documentarians. African-American history, culture and socio-political context are addressed in the analyses of these documentary films from the perspectives of mainstream media, independent filmmakers and minority documentarians. Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is cross-listed with JOUR 3273, COMM 3273.

## AAST 3293. Black Politics. 3 Hours.

This is a survey course designed to provide students with a comprehensive overview of Black political participation in the United States and throughout the diaspora. In addition to analyzing important events in Black politics in the U.S., the course also examines evolving patterns of diasporic political participation throughout the world. (Typically offered: Irregular)
This course is cross-listed with PLSC 3293.

## AAST 3353. Black Digital Storytelling. 3 Hours.

Provides basic knowledge of the range of capabilities of available audio and video design applications through the intersection of technology, story, and pedagogy, offering perspective, personalization, and insight. (Typically offered: Fall, Spring and Summer)

AAST 3393. Civil Rights Policy and Politics. 3 Hours.
This course will draw from linkages between the protest phase of the civil rights and American political institutions. The course explores the institutional impact of the civil rights movement on the presidency, congress, the courts, administrative regulatory agencies, and civil rights advisory organizations. (Typically offered: Spring) This course is cross-listed with PLSC 3393.

## AAST 3513. Black Indians in America. 3 Hours.

Examines the history of Black Indian slavery and Freedom in the Cherokee, Muscogee, Chickasaw, Choctaw, and Seminole Tribes. Explores the switch to chattel slavery following colonialization, the experiences of African people enslaved by the tribes and their descendants, ongoing present-day disputes over tribal citizenship, human rights, and the American Indian identity. (Typically offered: Fall and Summer Even Years)
AAST 3523. Black in the City. 3 Hours.
Covers the history of Black people's relationship with the urban landscape. Students will use a wide array of primary sources to explore the ways in which Americans not only perceived the city but also sought to understand, master, and reimagine it and the uneven social and economic development that emerged as a consequence. (Typically offered: Fall and Spring Odd Years)

## AAST 3673. Distant Relatives: The Global Black Diaspora. 3 Hours.

Examines the cultural, political, economic, and social experiences of different parts of the African diaspora in the Americas, with special attention to the Black Atlantic World, focusing on the making of the diaspora through slavery, the middle passage, and later coerced and voluntary migrations. (Typically offered: Spring and Summer Odd Years)
AAST 3853. Topics in African-American Literature and Culture. 3 Hours. The study of works of African-American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with ENGL 3853.
AAST 3973. South Africa: The Long, Ongoing Walk to Freedom. 3 Hours. Examines the country's complex history and also the ways that this past is both remembered and memorialized. Closely examines the initial motivations for the colonization of South Africa, the experiences of Africans under colonial and, subsequently, apartheid rule and the ongoing legacies of these periods in contemporary South Africa. (Typically offered: Irregular)

AAST 3983. Black Movements and Messiahs. 3 Hours.
Focuses on black movements and leaders across global African history since the Age of Revolutions to the present including political, economic, social, cultural, religious and artistic movements throughout Africa and the diaspora. (Typically offered: Irregular)

AAST 399VH. Honors African \& African American Studies Thesis. 1-6 Hour. Independent thesis research and writing under the direction of an AAST faculty member. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
AAST 4003. African \& African American Studies Study Abroad. 3 Hours. Examination of selected topics in conjunction with student participation in the biannual African \& African American Studies Study Abroad program to Ghana. Topic variable, chosen by instructor. (Typically offered: Summer Even Years) May be repeated for up to 6 hours of degree credit.

## AAST 4003H. Honors African \& African American Studies Study Abroad. 3

 Hours.Examination of selected topics in conjunction with student participation in the biannual African \& African American Studies Study Abroad program to Ghana. Topic variable, chosen by instructor. (Typically offered: Summer Even Years) May be repeated for up to 6 hours of degree credit.

## AAST 4043. Black Italia. 3 Hours.

Explores the history, representation, and lived experiences, both prejudices and successes, of marginalized persons in Italy, particularly those of African heritage through an interdisciplinary lens. (Typically offered: Spring Odd Years)
This course is cross-listed with ITAL 4043.

## AAST 4053. Historic Black Northwest Arkansas. 3 Hours.

Explores the history of Black NWA from settlement to the twenty-first century by examining, recovering, and documenting the lives of the region's enslaved and free people of color. Additional exploration of the communities, institutions, social, businesses, and artistic movements that define the black experience in NWA. Corequisite: Lab component. (Typically offered: Irregular)
AAST 4103. Communicating Body Image. 3 Hours.
Examines hidden assumptions about body image as it relates to the intersections of race, class, gender, and other major identity markers. (Typically offered: Fall) This course is cross-listed with COMM 4103.

## AAST 4123. Africa and the Trans-Atlantic Slave Trade. 3 Hours.

Examines the trans-Atlantic slave trade with a primary focus on the role of Africa and Africans in creating the unique economy and culture of the trans-Atlantic world. (Typically offered: Irregular)
This course is cross-listed with HIST 4123.

## AAST 4153. Race and Society. 3 Hours.

Introduction to the sociological study of race and ethnicity within the United States, with emphasis on understanding how race and ethnicity operate within contemporary social institutions. Prerequisite: SOCI 2013 or AAST 1003 or AAST 2023. (Typically offered: Fall)
This course is cross-listed with SOCI 4153.
AAST 4163. African American Perspectives of Trauma, Loss, and Recovery. 3 Hours.
Explores dimensions of trauma, loss, and recovery within the lived experiences of African American individuals, families, and communities in the United States.
Prerequisite: Junior standing or instructor consent. (Typically offered: Fall)
This course is cross-listed with SCWK 4163.

AAST 4173. Social Work with African American Families. 3 Hours.
An overview of historical and contemporary issues of African American families using culturally competent and strengths based frameworks. Focuses on the Black family as a social institution. Covers current trends affecting Black families, historical influences, evaluation of social policies, and programs of today. Prerequisite: Junior standing or instructor consent. (Typically offered: Fall and Spring)
This course is cross-listed with SCWK 4173.
AAST 4183. Black Environmental Justice. 3 Hours.
Provides an overview of the foundations of environmental justice as it relates to African-American communities. Expands the definitions of the environment and deconstructs the connection between slavery, land loss, gentrification, and food deserts. Finally, the course explores federal policies that shapes built environments, and its influence on African-American culture. (Typically offered: Irregular)

## AAST 4263. Modern Africa. 3 Hours.

Examines the last half-century of Africa's history, focusing on the last few decades. Introduction of Africa's colonial past, revolutions and struggles for independence. Review of African development in the post-colonial and contemporary era, successes and failures of independent Africa, and the challenges the continent faces today. (Typically offered: Irregular)
This course is cross-listed with HIST 4263.
AAST 4323. Racial Identity, Politics, and Public Policy. 3 Hours.
Examines how race and perceived racial differences affect political discourse, mobilization, representation, and political outcomes. Prerequisite: PLSC 3293 or AAST 1003 or Junior standing. (Typically offered: Spring Even Years) This course is cross-listed with PLSC 4323.

AAST 4383. The American Civil Rights Movement. 3 Hours.
Introduction to the history and development of the civil rights movement in the United States. (Typically offered: Irregular)
This course is cross-listed with HIST 4383.

## AAST 4473. Account Planning. 3 Hours.

An introduction to applied advertising research and account planning. Integrate consumers' perspectives into creative strategy to developing brand stories for clients. Write creative briefs, positioning statements and prepare copy-testing research instruments to evaluate messages. Utilize consumer research for creating messages for diverse cultures. Corequisite: Lab component. Prerequisite: Minimum 90 hours completed, no in-progress hours or coursework accepted, 2.5 overall GPA, JOUR 1033 with a grade of C or better, and ADPR 3723 and ADPR 3743, with a grade of B or better. (Typically offered: Fall and Spring)
This course is cross-listed with ADPR 4473.
AAST 4523. Black Utopias/Dystopias. 3 Hours.
Explores how thinkers in the U.S., the Caribbean, and Africa, as well as movements such as fugitivity, colonization, and emigration to Haiti, Canada, Liberia, Ghana, Paris, and numerous other spaces, envisioned ideal forms of community that would shield them from the perils of white supremacy and racist oppression. (Typically offered: Fall Odd Years)

## AAST 4563. The Old South, 1607-1865. 3 Hours.

Survey of the political, social, and economic development of the antebellum South. (Typically offered: Irregular)
This course is cross-listed with HIST 4563.
AAST 4573. The New South, 1860 to the Present. 3 Hours.
Survey of the development of the Civil War and postwar South to the present. (Typically offered: Fall Even Years)
This course is cross-listed with HIST 4573.

## AAST 4583. Cultures of Africa. 3 Hours.

An exploration of the people and places of Africa from a variety of anthropological perspectives. Classic and contemporary works will be studied in order to underscore the unity and diversity of African cultures, as well as the importance African societies have played in helping us understand culture/society throughout the world. (Typically offered: Fall)
This course is cross-listed with ANTH 4583.
AAST 4623. African American Art History. 3 Hours.
Surveys African American art from the seventeenth century to the present. It begins with a discussion of the transatlantic slave trade and it examines art produced in what Pratt terms the "contact zones." It then follows developments in African American art from the Antebellum Period to the present. Prerequisite: ARHS 2923. (Typically offered: Fall)
This course is cross-listed with ARHS 4623.
AAST 4813. Africans and Slavery in Colonial Latin America. 3 Hours.
Explores the diverse experiences of slaves and free Blacks in colonial Spanish and Portuguese America from 1500 to around 1888, demonstrating that bondage and the practice of African slavery was a pillar of political authority in colonial Latin America. (Typically offered: Irregular)
This course is cross-listed with HIST 4813, LALS 4813.

## AAST 4823. Black Freedom in the Age of Emancipation. 3 Hours.

Comparative study of Atlantic World freedom movements from the perspective of the African Diaspora. Focuses on the histories, meanings, and legacies of the various types of black emancipation in the Atlantic World and the cultural technologies that enabled them. (Typically offered: Spring)
This course is cross-listed with HIST 4823.
AAST 4853. Studies in African American Literature and Culture. 3 Hours.
The study of works of African American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is cross-listed with ENGL 4853.

## AAST 4863. Gender, Race, and Power. 3 Hours.

Examines how communication shapes gender, race, sexuality, and power. Rather than focusing exclusively on interpersonal communication, this course looks at theories of power that shape institutional macro communication. (Typically offered: Fall Even Years)
This course is cross-listed with COMM 4363.

## AAST 489V. African \& African American Independent Study. 1-6 Hour.

An exploration of African \& African American Studies topics independently with a faculty member. Topic variable with permission of faculty member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## AAST 4923. History of the Black Press. 3 Hours.

Covers the historic context of contributions and innovations to U.S. newspapers by African Americans. Also investigates the role of the black press from its beginnings in 1827 through the civil rights movement. Prerequisite: Junior standing. (Typically offered: Spring Even Years)
This course is cross-listed with JOUR 4923.

## AAST 4933. African American Political Ideology. 3 Hours.

A survey course designed to identify and examine characteristics and functions of several variants of black political ideology/thought. (Typically offered: Fall Odd Years)
This course is cross-listed with PLSC 4933.
AAST 499V. African and African American Studies Seminar. 1-12 Hour. Explores the various aspects of the African \& African American experience as it relates to the development of relationships in American society and the world at large. Variable topic each semester. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

## Anthropology (ANTH)

JoAnn D'Alisera
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Department of Anthropology Website (http://fulbright.uark.edu/ departments/anthropology/)

Courses in anthropology provide an introduction to world peoples, their ways of living, and world views. Anthropology helps students to better understand human similarities and differences.

The Department of Anthropology offers both a Bachelor of Science and a Bachelor of Arts degree in anthropology.

The Bachelor of Science degree program is geared toward students with specializations in anthropological sciences. It is recommended for students planning to continue their education in basic or applied anthropological sciences in graduate or professional school. A B.S. degree in anthropology is also useful students planning to continue their education toward health or medical related careers.

The Bachelor of Arts degree program allows students to take additional coursework in any of four areas of focused study: archeology, biological anthropology, cartography/remote sensing/GIS, or cultural anthropology.

For the combined major in Anthropology and African and African American Studies, see the African and African American Studies (p. 288) listing.

For requirements for the M.A. and Ph.D. degrees in anthropology, see the Graduate School Catalog (http://catalog.uark.edu/graduatecatalog/ programsofstudy/anthropologyanth/).

## Requirements for a B.S. Degree with a Major in Anthropology

The department of anthropology offers the Bachelor of Science degree in anthropology. The Bachelor of Science degree program is geared toward students with focused studies in anthropological sciences. It is recommended for students planning to continue their education in basic or applied anthropological sciences in graduate or professional school. A B.S. degree in anthropology is also useful students planning to continue their education toward health or medical related careers.

Program Requirements: A minimum of 120 hours is required, including 35 hours of state minimum core (p. 81) and 57 hours specified as designated below.

Required Anthropology Core Courses:

| ANTH 1013 | Introduction to Biological Anthropology <br> \& ANTH 1011L <br> and Introduction to Biological Anthropology | 4 |
| :--- | :--- | ---: |
| Laboratory |  |  |$\quad$|  |  |
| :--- | ---: |
| ANTH 1023 | Introduction to Cultural Anthropology (ACTS <br> Equivalency = ANTH 2013) |
| ANTH 1033 | Introduction to Archaeology |
| ANTH 4013 | History of Anthropological Thought |


| Science | A minimum of 20 hours of electives from BIOL, <br> CHEM, GEOL, and/or PHYS | 20 |
| :--- | :--- | :--- |
| Mathematics |  | 6 |
| Minimum of 6 hours of math beyond College Algebra (MATH 1203) |  |  |
| selected from among the following courses: |  |  |$\quad 6$

Writing Requirement: The Fulbright College research/analytical paper requirement for anthropology majors is fulfilled by completing an intensive writing requirement ( 15 pages) with a grade of " B " or higher in a successfully completed 4000-level ANTH course and with instructor approval.

## Anthropology B.S. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. Core requirement
hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.


STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
Fine Arts State Minimum Core (Satisfies General 3
Education Outcome 3.1) ${ }^{2}$
Science Elective and accompanying Laboratory 4
from BIOL, CHEM, GEOL or PHYS
General Elective 3
ANTH 1033 Introduction to Archaeology 3
Science Elective and accompanying Laboratory 3
from BIOL, CHEM, GEOL or PHYS
Science Elective and accompanying laboratory 3
from BIOL, CHEM, GEOL or PHYS
Social Sciences State Minimum Core (Satisfies 6
General Education Outcome 3.3) ${ }^{3}$
Year Total: 14

| Third Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| ANTH Electives among 3000-4000-level courses ${ }^{4,}$ | 6 |  |

3000-4000-level Fulbright College Electives ${ }^{4,5} 3$
General Electives 6
$\underset{5}{\text { ANTH Electives among 3000-4000-level courses }{ }^{4,} 9}$
5
3000-4000 level General Electives ${ }^{4} 3$
Science Elective and accompanying Laboratory 4
from BIOL, CHEM, GEOL or PHYS
Year Total: 15 16

| Fourth Year | Units <br> Spring |
| :--- | ---: | ---: |
| ANTH 4013 History of Anthropological Thought | 3 |

(Satisfies General Education Outcomes 1.2, 3.2, 3.3, 4.1, 5.1, and 6.1) ${ }^{4,5}$

3000-4000 level General Electives ${ }^{4} 3$
3000-4000 level General Electives (or 2000-level 9
Advanced level elective) ${ }^{4}$
ANTH Electives among 3000-4000-level courses ${ }^{4,} 3$
5

General Electives 9
Year Total: 15 12

## Total Units in Sequence:

${ }^{1}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003 , HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H,PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C,PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
2 The Fine Art Elective courses which satisfy the General Education Outcome 3.1 include:

ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{3}$ The Social Sciences Elective courses which satisfy the General Education Outcome 3.3 include:
AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413,HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H,PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{4}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273).
${ }^{5}$ Meets 24 -hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations (p. 273).

## Requirements for a Bachelor of Arts Degree with a Major in Anthropology

Required courses include 35 hours of state minimum core (p. 81) and a total of 120 hours including the following.

## 34 Semester Hours including:

| ANTH 1013 | Introduction to Biological Anthropology | 3 |
| :---: | :---: | :---: |
| ANTH 1011L | Introduction to Biological Anthropology Laboratory | 1 |
| ANTH 1023 | Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013) | 3 |
| ANTH 1033 | Introduction to Archaeology | 3 |
| ANTH 4013 | History of Anthropological Thought | 3 |

These 34 hours must also include:

- One course in each ANTH subfield (Cultural, Archaeology, Biological) beyond the core ( 9 hours).
- 3 hours from each of two different geographical areas in ANTH for a total of 6 hours.
- 6 elective credit hours in anthropology. These may satisfied in concert with an optional focused study as described below.


## Focused Studies

## Focused Study in Archeology:

To complete the focused study, a student is required to fulfill the following course requirements:

## ANTH 3023 Approaches to Archeology

Two of the following method and theory courses or equivalent classes offered under ANTH 3903 and ANTH 4903, approved as having an archeological method and theory focus.

| ANTH 4093 | The Archeology of Death |
| :--- | :--- |
| ANTH 4353 | Laboratory Methods in Archeology |
| ANTH 4443 | Cultural Resource Management I |
| ANTH 4603 |  |
| ANTH 4633 |  |
| ANTH 4813 |  |
| Archeological Field Session |  |

ANTH 4256 Archeological Field Session

## Focused Study in Biological Anthropology:

To complete the focused study, a student is required to fulfill the following course requirements:

Four of the following courses in biological anthropology, including any 3000-4000 special topics or seminar courses offered that are deemed appropriate for training in any of the subdisciplines of biological anthropology (12-13 credits).

| ANTH 3423 | Human Osteology | 4 |
| :--- | :--- | :--- |
| \& ANTH 3421L | and Human Osteology Laboratory |  |
| ANTH 3433 | Human Evolution | 3 |
| ANTH 3533 | Medical Anthropology | 3 |
| ANTH 3923H | Honors Colloquium | 3 |
| ANTH 4523 | Dental Science | 3 |
| ANTH 4613 | Primate Adaptation and Evolution | 3 |

## Focused Study in Cartography/Remote Sensing/GIS:

This focused study gives students an opportunity to develop expertise in (1) cartography, map design and computer-assisted map production, (2) remote sensing and image interpretation, including photographic systems, sensor systems, and digital image processing, and (3) geographic information systems, including data sources, analytical techniques, and hardware/software systems.

To complete the focused study, a student is required to fulfill the following course requirements.

## Required Courses:

| GEOS 3023 | Introduction to Cartography | 3 |
| :--- | :--- | :--- |
| GEOS 3213 | Principles of Remote Sensing | 3 |
| ANTH 3543 | Geospatial Applications and Information Science | 3 |
| Elective Courses | Select three of the following: | 9 |
| GEOS 4523 | Cartographic Design and Production |  |
| ANTH 4553 | Introduction to Raster GIS |  |
| ANTH 4563 |  |  |
| STAT 3003 | Statistical Methods |  |
| CVEG 2053 | Surveying Systems (or other approved surveying <br> course) |  |

## Focused Study in Cultural Anthropology:

To complete the focused study, a student is required to fulfill the following course requirements:

Students must take a world language through the 2013 level
Two of the following method and theory courses or equivalent classes $\quad 6$ offered under ANTH 3903 and ANTH 4903 approved as having a cultural anthropology method and theory focus.

| ANTH 3123 | The Anthropology of Religion |
| :--- | :--- |
| ANTH 3533 | Medical Anthropology |
| ANTH 4143 | Ecological Anthropology |
| ANTH 4363 | Museums, Material Culture, and Popular <br> Imagination |

## ANTH 4813

Writing Requirement: The Fulbright College research/analytical paper requirement for anthropology majors is fulfilled by completing an
intensive writing requirement (15 pages) with a grade of "B" or higher in a successfully completed 4000-level ANTH course and with instructor approval.

## Anthropology B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

First Year $\quad$ Fall | Units |
| ---: |
| Spring |

Satisfies General Education Outcomes 3.4 and 4.2:
ANTH 1013 Introduction to Biological Anthropology
\& ANTH 1011L Introduction to Biological
Anthropology Laboratory
ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisfies General Education Outcome 1.1)
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)
ANTH 1023 Introduction to Cultural Anthropology
(ACTS Equivalency = ANTH 2013) (Satisfies
General Education Outcomes 3.3 and 4.1)
State Minimum Core Humanities or Fine Arts requirement (Satisfies General Education Outcome 3.2 or 3.1) ${ }^{1,2}$

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)
State Minimum Core Humanities or Fine Arts requirement (Satisfies General Education Outcome 3.2 or 3.1) ${ }^{1,2}$

Science State Mininum Core Lecture with corequisite Lab requirement (Satisfies General Education Outcome 3.4)
State Minimum Core Social Sciences requirement
(Satisfies General Education Outcome 3.3) ${ }^{3}$
Select one State Minimum Core U.S. History or
Government course (Satisfies General Education
Outcome 4.2):
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)

PLSC 2003 American National Government (ACTS Equivalency $=$ PLSC 2003)
Year Total:

| Second Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ANTH 1033 Introduction to Archaeology (Satisfies | 3 |  |

ANTH 1033 Introduction to Archaeology (Satisfies 3
General Education Outcomes 3.2 and 4.1)

State Minimum Core Social Sciences requirement 3
(Satisfies General Education Outcome 3.3) ${ }^{3}$
ANTH Cultural Anthropology subfield course 3
among 3000-4000 level classes ${ }^{4,5}$
General Electives 6
ANTH Biological Anthropology subfield course 3
among 3000-4000 level classes ${ }^{4,5}$
ANTH Archeology subfield course among 3
3000-4000 level classes ${ }^{4,5}$
ANTH Geographical area course among 3
3000-4000 level classes ${ }^{4,5}$
ANTH Electives among 3000-4000 level classes ${ }^{4,5} 6$
Year Total: 15 15

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ANTH Geographical area course among 3000-4000 level classes ${ }^{4,5}$ | 3 |  |
| 3000-4000 Level General Electives ${ }^{4,5}$ <br> (or 2000-level Advanced Level Electives) ${ }^{4}$ | 6 |  |
| General Electives | 6 |  |
| 3000-4000 level General Electives ${ }^{4}$ |  | 6 |
| General Electives |  | 10 |
| Year Total: | 15 | 16 |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ANTH 4013 History of Anthropological Thought | 3 |  |
| (Satisfies General Education Outcomes 1.2, 3.2, |  |  |
| 3.3, 4.1, 5.1, and 6.1) |  |  |
| Advanced Level Electives ${ }^{4}$ | 3 |  |
| General Electives | 9 |  |

Advanced Level Electives (as needed to meet 403
hour rule) ${ }^{4}$
or General Electives
General Electives 9

Year Total: 15

Total Units in Sequence: 120
${ }^{1}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
${ }^{2}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013 H .

3 The Social Sciences Elective courses which satisfy the General Education Outcome 3.3 include:
AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
4 Meets 40-hour advanced credit hour requirement. See College Academic Regulations (p. 273).
5 Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations (p. 273).

## Minor in Anthropology

Requirements for a Minor in Anthropology: 15 hours including ANTH 1023. At least 9 hours must be in courses numbered 3000 or above. Students who minor in anthropology should consult with an anthropology adviser to select appropriate courses. A student must notify the department of his or her intent to minor.

Requirements for Departmental Honors in Anthropology: The Departmental Honors Program in Anthropology provides an opportunity for outstanding undergraduate majors to conduct independent research under the supervision of a faculty member. The research project culminates in an honors thesis, which is primary for the award "Anthropology Scholar Cum Laude."Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate's entire program of honors studies.

Honors candidates must meet the college requirements for an honors degree. They must complete and defend an honors thesis and take 12 hours, which may include 6 hours of thesis, in Honors Studies. The candidate is expected to maintain a minimum 3.5 cumulative grade-point average in anthropology and other course work.

Please refer to the Secondary Education Requirements (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/\#fieldsofstudytext) for Fulbright College Students.

Students wishing to pursue licensure through the UAteach undergraduate curriculum should consult with a UAteach adviser, uteach@uark.edu.

## Faculty

D'Alisera, JoAnn, Ph.D., A.M. (University of Illinois-Urbana-Champaign), B.A. (State University of New York at New Paltz), Associate Professor, 1999, 2005.
Delezene, Lucas, Ph.D., M.A. (Arizona State University), B.S. (Emory University), Associate Professor, 2011, 2020.
Erickson, Kirstin C., Ph.D., M.A. (University of Wisconsin-Madison), B.A. (St. Olaf College), Associate Professor, 2001, 2008.
Kowalski, Jessica Anne, Ph.D. (University of Alabama), Research Assistant Professor, 2019.
Koziol, Kathryn, Ph.D. (University of Arkansas), Teaching Associate Professor, 2019, 2022.
Paul, Kathleen, Ph.D., M.A. (Arizona State University), B.A. (New York University), Assistant Professor, 2019.
Plavcan, Joseph M., Ph.D., B.A. (Duke University), Professor, 2001, 2010.

Stoner, Wesley, Ph.D., M.A. (University of Kentucky), B.A. (Pennsylvania State University), Associate Professor, 2014, 2020.
Terhune, Claire E., Ph.D., M.A. (Arizona State University), B.A., B.S. (College of Charleston), Associate Professor, 2013, 2020.
Ungar, Peter S., Ph.D., M.A. (State University of New York at Stony Brook), B.A. (State University of New York, Binghampton), Distinguished Professor, 1995, 2009.
Villaseñor, Amelia, Ph.D. (George Washington University), B.A. (Arizona State University), Assistant Professor, 2019.
Vining, Benjamin R., Ph.D., M.A. (Boston University), B.A. Colgate
University, Associate Professor, 2016, 2022.

## Courses

ANTH 1011L. Introduction to Biological Anthropology Laboratory. 1 Hour. Laboratory exercises illustrating concepts of physical anthropology. Corequisite: ANTH 1013. (Typically offered: Fall)
ANTH 1011M. Honors Introduction to Biological Anthropology Laboratory. 1 Hour.
Laboratory exercises illustrating concepts of physical anthropology. Corequisite: ANTH 1013H and honors candidacy. (Typically offered: Fall)
This course is equivalent to ANTH 1011L.
ANTH 1013. Introduction to Biological Anthropology. 3 Hours.
An introduction to the field of biological anthropology using evolution and human variation as unifying concepts. Areas include human genetics, race, speciation, primate and human evolution, and human variation and adaptation. Corequisite: ANTH 1011L. (Typically offered: Spring and Summer)
ANTH 1013H. Honors Introduction to Biological Anthropology. 3 Hours.
An introduction to the field of biological anthropology using evolution and human variation as unifying concepts. Areas include human genetics, race, speciation, primate and human evolution, and human variation and adaptation. Corequisite: ANTH 1011M. (Typically offered: Fall and Spring)
This course is equivalent to ANTH 1013.
ANTH 1023. Introduction to Cultural Anthropology (ACTS Equivalency $=$ ANTH 2013). 3 Hours.

Introduction to the nature of culture and its influence on human behavior and personality: comparative study of custom, social organization, and processes of change and integration of culture. Corequisite: Drill component. (Typically offered: Fall, Spring and Summer)
ANTH 1023H. Honors Introduction to Cultural Anthropology. 3 Hours.
Introduction to the nature of culture and its influence on human behavior and personality; comparative study of custom, social organization, and processes of change and integration of culture. (Typically offered: Fall and Spring) This course is equivalent to ANTH 1023.

## ANTH 1033. Introduction to Archaeology. 3 Hours.

Archaeology studies the human past through contextual analysis of artifacts, archaeological sites, and landscapes. This course introduces archaeological methods and theories, significant discoveries and current debates in the discipline. Corequisite: Lab component. (Typically offered: Fall and Spring)

ANTH 2013. Introduction to Latin American Studies. 3 Hours.
This course provides an interdisciplinary introduction to Latin America. Drawing on Latin American literature, history, sociology, and political science, the course examines the broad forces that have shaped the region. (Typically offered: Irregular)

## ANTH 3003. World Prehistory. 3 Hours.

Survey of the prehistoric and early historic cultures of the Americas, Asia, and Africa. (Typically offered: Irregular)

ANTH 3013. Myths, Mysteries, and Manipulations of the Past. 3 Hours. Examines many archaeological fantasies, evaluates the evidence for and against such fringe theories, and confronts pseudoscience in everyday life. Dispels popular fantasies and "fake news" about the past. (Typically offered: Fall Odd Years)

## ANTH 3023. Approaches to Archeology. 3 Hours.

Study of the field of archeology including method, theory, analysis and interpretation with substantive worldwide examples. Prerequisite: ANTH 1033. (Typically offered: Spring)

ANTH 3043. Bones, Bodies, and Brains in Evolutionary Perspective. 3 Hours. This course will review the anatomy of the human body, comparing this anatomy with primates, mammals, and vertebrates, and it will consider how the major features of the human body emerged throughout evolution. (Typically offered: Irregular) This course is cross-listed with BIOL 3043.

## ANTH 3123. The Anthropology of Religion. 3 Hours.

An exploration of rituals, symbols, and rules that shape religious life. Religion is viewed broadly, considering activities that invoke powers beyond the reach of ordinary senses. Examining a variety of cultures, we explore what people say and do as they participate in activities such as magic, healing, pilgrimage, and contemporary religious movements. (Typically offered: Spring)
ANTH 3213. Indigenous Peoples of North America: Anthropological Perspectives. 3 Hours.
An exploration of indigenous societies and cultures of North America from an anthropological perspective. Using examples from diverse Native Nations from the time of European contact to the present, we will examine colonialism and resistance, indigenous cosmologies, memory culture and oral tradition, and the politics of representation. (Typically offered: Irregular)
ANTH 3263. Indians of Arkansas and the South. 3 Hours.
Study of the traditional lifeways and prehistoric backgrounds of Indians living in the Southern United States, including Arkansas. (Typically offered: Spring Odd Years)
ANTH 3323. Evolution of the Human Mating System. 3 Hours.
Examines basic principles governing the evolution of sexual behavior and anatomy in mammals, compares the features of human mating systems to those of primates, and explores models for the origin of fundamental features of the human social system. (Typically offered: Fall)

## ANTH 3421L. Human Osteology Laboratory. 1 Hour.

Laboratory exercises illustrating concepts of human osteology. Corequisite: ANTH 3423. (Typically offered: Spring)

ANTH 3423. Human Osteology. 3 Hours.
Study of the human skeleton, identification of bones, allometric growth, sexual dimorphism, osteological genetic inheritance and environmental stresses. Lectures and demonstration. Corequisite: ANTH 3421L. (Typically offered: Spring)
ANTH 3433. Human Evolution. 3 Hours.
A study of hominid evolution from origin to the present, including trends in comparative primate evolution and functional development of human form as a result of cultural and biological interaction. (Typically offered: Fall)

## ANTH 3473. North American Prehistory. 3 Hours.

Survey of the aboriginal prehistory of the North American Continent north of Mexico. (Typically offered: Irregular)

## ANTH 3533. Medical Anthropology. 3 Hours.

Survey of the interrelationship of human biology, culture and environment as reflected in disease experience from an evolutionary and cross cultural perspective. Special emphasis on stress. (Typically offered: Irregular)

ANTH 3543. Geospatial Applications and Information Science. 3 Hours. An introduction to the methods and theory underlying the full range of geographic information science and collateral areas - including GNSS, remote sensing, cadastral, spatial demographics and others. (Typically offered: Fall and Spring) This course is cross-listed with GEOS 3543.

ANTH 3553. Religion in Latin America. 3 Hours.
Examines contemporary implications of Latin America's unique religious heritage. An exploration of multiple Latin American religious traditions, with sustained focus on key theoretical concerns: conversion, vernacular vs. orthodox expressions, the blending of indigenous and European cosmologies, devotion and ritual, and the articulation of ethnic, gendered, and religious identities. (Typically offered: Irregular) This course is cross-listed with LALS 3553.

## ANTH 3563. Culture and Medicine. 3 Hours.

Study of health and medicine within cultural contexts, including attention to crosscultural healers and healing systems. Special emphasis on biomedicine as a cultural system. (Typically offered: Irregular)

## ANTH 3583. Body and Identity. 3 Hours.

This course explores personal, social and cultural constructions and performances of the body and identity, highlighting key intersections of embodiment including gender, race, sexuality and abilities. (Typically offered: Irregular)

ANTH 3593. Bioarchaeology: Bodies of the Past. 3 Hours.
Bioarchaeology is the study of human remains recovered from archaeological contexts. An overview of the field's history, ethical considerations, and relationship to the broader social sciences and STEM fields. Focuses on interpreting an individual's lived experience from their skeletal remains and mortuary context to reconstruct past phenomena. (Typically offered: Spring Odd Years)

## ANTH 3713. Extinction: Bad Genes or Bad Luck?. 3 Hours.

Explores mass extinctions through the history of life on Earth, with particular emphasis on the Quaternary (the last 2.6 million years) where hominins, particularly humans have played a dominant role in shaping the ecosystems we experience today. (Typically offered: Fall and Spring)
ANTH 3903. Topics in Anthropology. 3 Hours.
Covers a special topic or issue. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ANTH 3923H. Honors Colloquium. 3 Hours.
Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in anthropology). (Typically offered: Irregular) May be repeated for degree credit.
ANTH 399VH. Honors Thesis. 1-6 Hour.
Honors thesis. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.
ANTH 4013. History of Anthropological Thought. 3 Hours.
Detailed consideration of anthropological theory through study of its historical development. The research paper fulfills the Fulbright College Writing Requirement for anthropology majors. Prerequisite: ANTH 1023. (Typically offered: Fall)

## ANTH 4043. Ancient Cities. 3 Hours.

Explores pre-modern cities from the earliest in the world to those on the brink of industrialization. Employs anthropological archaeology as its primary approach, but also draws upon formal/functional analysis of urban plans, historical documentation, urban planning and history, and semiotics to interpret the built-environment as a form of non-verbal communication. (Typically offered: Spring Even Years)

ANTH 4053. Anthropology of the City. 3 Hours.
Explores the implications of several pivotal urban and cultural trends and how representations of the city have informed dominant ideas about city space, function, and meaning. (Typically offered: Irregular)

## ANTH 4093. The Archeology of Death. 3 Hours.

Study of the analysis and interpretation of archeological mortuary remains and sites. Key archeological and anthropological sources that have influenced major theoretical developments are reviewed. (Typically offered: Irregular)

## ANTH 4143. Ecological Anthropology. 3 Hours.

Anthropological perspectives on the study of relationships among human populations and their ecosystems. (Typically offered: Irregular)

## ANTH 4256. Archeological Field Session. 6 Hours.

Practical field and laboratory experiences in archeological research. (Typically offered: Summer) May be repeated for up to 12 hours of degree credit.

ANTH 4263. Identity and Culture in the U.S.-Mexico Borderlands. 3 Hours. An exploration of the interplay between Latino/a, Mexican, Anglo, and Native American identities and cultures along the U.S.-Mexico border. Course examines identity formation, hybridity, social tension, marginalization, race and gender, from an anthropological perspective, paying special attention to the border as theoretical construct as well as material reality. (Typically offered: Irregular)
This course is cross-listed with LALS 4263.

## ANTH 4273. Photography for Fieldwork. 3 Hours.

This class explores the use of photographic images as both data and representational tools in anthropological research, emphasizing the ethical, theoretical, and methodological issues involved. (Typically offered: Irregular)

## ANTH 4283. Survey in Ethnographic Film. 3 Hours.

Survey of the development and evolution of ethnographic film, based on class screenings to build familiarity, vocabulary, and literacy with this branch of visual anthropology. (Typically offered: Irregular)

## ANTH 4353. Laboratory Methods in Archeology. 3 Hours.

Theory and practice of describing, analyzing, and reporting upon archeological materials. (Typically offered: Irregular)

ANTH 4363. Museums, Material Culture, and Popular Imagination. 3 Hours. Museums as ideological sites and thus as sites of potential contestation produce cultural and moral systems that legitimate existing social orders. This course will focus on strategies of representation and the continuous process of negotiating social and cultural hierarchies with and through objects that are displayed. (Typically offered: Fall)

## ANTH 4443. Cultural Resource Management I. 3 Hours.

Concentrated discussion of management problems relative to cultural resources, including review and interpretation of relevant federal legislation, research vs. planning needs, public involvement and sponsor planning, and assessment of resources relative to scientific needs. No field training involved; discussion will deal only with administrative, legal and scientific management problems. (Typically offered: Spring) May be repeated for degree credit.

## ANTH 448V. Individual Study of Anthropology. 1-6 Hour.

Reading course for advanced students with special interests in anthropology. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

ANTH 4523. Dental Science. 3 Hours.
Introduction to the study of the human dentition including its anatomy, morphology, growth and development, and histology. (Typically offered: Fall)

ANTH 4533. Middle East Cultures. 3 Hours.
Study of the peoples and cultures of the Middle East; ecology, ethnicity, economics, social organizations, gender, politics, religion, and patterns of social change. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

## ANTH 4553. Introduction to Raster GIS. 3 Hours.

Theory, data structures, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. (Typically offered: Fall)
This course is cross-listed with GEOS 4553.

## ANTH 4583. Cultures of Africa. 3 Hours.

An exploration of the people and places of Africa from a variety of anthropological perspectives. Classic and contemporary works will be studied in order to underscore the unity and diversity of African cultures, as well as the importance African societies have played in helping us understand culture/society throughout the world. (Typically offered: Fall)
This course is cross-listed with AAST 4583.
ANTH 4613. Primate Adaptation and Evolution. 3 Hours.
Introduction to the biology of the order of Primates. This course considers the comparative anatomy, behavioral ecology and paleontology of our nearest living relatives. Prerequisite: ANTH 1013 (or BIOL 1543 and BIOL 1541L). (Typically offered: Spring)
This course is cross-listed with BIOL 4613.

## ANTH 4703. Mammalian Evolution and Osteology. 3 Hours.

This course will focus on describing the evolutionary history of mammals, a group of vertebrates that include over 5,000 species in 29 orders, and will provide an overview of living species and their identifying features. Prerequisite: ANTH 1013 and ANTH 1011L or BIOL 1543 and BIOL 1541L or instructor consent. (Typically offered: Irregular)

## ANTH 4903. Seminar in Anthropology. 3 Hours.

Research, discussion, and projects focusing on a variety of topics. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

## ANTH 4913. Topics of the Middle East. 3 Hours.

Covers a special topic or issue. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## Art (ARTS)

Marty Maxwell Lane
Director of the School of Art
Studio \& Design Center, 696 W. Praxis Lane
479-575-5202
School of Art Website (https://fulbright.uark.edu/departments/art/)
The School of Art offers two undergraduate programs leading to degrees:

- Bachelor of Arts
- Bachelor of Fine Arts

Separate requirements for each program and its concentrations are listed under the tabs. Requirements for honors are listed separately for the program. The School of Art also offers a minor in art history.

Under direction of accomplished faculty, the School of Art offers professional art degrees in many media areas, including art education, art history, ceramics, drawing, painting, photography, printmaking, sculpture, and visual design. Students enjoy a close proximity to the Crystal Bridges Museum of American Art, with which the School of Art has a strong relationship. The school also works closely with other local arts organizations and maintains an active presence in the communities of Northwest Arkansas. The school's Fine Arts Gallery (http://art.uark.edu/ fineartsgallery/) in the impressive Fine Arts Center designed by architect Edward Durell Stone, is currently being renovated and normally shows both student and professional works on a near-constant basis when open. The school's new Studio and Design Center and its Sculpture Studio are in the heart of the new Windgate Art and Design District at the southeast corner of Hill Avenue and Martin Luther King Boulevard. Both facilities include public galleries as well.

## Bachelor of Arts Degree

Transfer students should confer with the School of Art advisers prior to entrance for information concerning entrance requirements and transfer credits. Transfer credit will be allowed from other accredited and recognized art departments and schools if the credit earned is compatible with program and course requirements within the University of Arkansas School of Art and reflects a grade of "C" or higher. In addition, a student must spend a minimum of 2 semesters in residence. Credit for advanced studio classes in the school is contingent upon presentation of a portfolio of works created in a college-level class equivalent to the class the student is seeking credit for in the School of Art. Professors in the relevant studio area will evaluate portfolios and determine transfer credits.

## University and College Requirements for a Bachelor of Arts in

Art History: In addition to the Fulbright College of Arts and Sciences
Graduation Requirements (see under Degree Completion Program Policy) and the state minimum core (p. 81), the following course requirements must be met.

| State minimum core |  | 35 |
| :---: | :---: | :---: |
| Majors must complete the state minimum core course for Fine Arts from outside the School of Art. |  |  |
| World language | up to the Intermediate II level | 12 |
| Art History and Studio Art Courses |  |  |
| ARHS 2913 | Art History Survey I (ACTS Equivalency = ARTA 2003) | 3 |
| ARHS 2923 | Art History Survey II (ACTS Equivalency = ARTA 2103) | 3 |
| At least two courses selected from below (Group 1): |  | 6 |
| ARHS 4563 | Pre-Columbian Art |  |
| ARHS 4573 | Artists of New Spain |  |
| ARHS 4743 |  |  |
| ARHS 4753 | Renaissance and Baroque Architecture |  |
| ARHS 4833 | Ancient Art |  |
| ARHS 4843 | Medieval Art |  |
| ARHS 4853 | Italian Renaissance Art |  |
| ARHS 4863 | Northern Renaissance Art |  |
| ARHS 4873 | Baroque Art |  |
| ARHS 4983 | Special Topics in Art History |  |
| At least two courses selected from below (Group 2): |  | 6 |
| ARHS 4813 | The History of Photography |  |
| ARHS 4883 | 18th and 19th Century European Art |  |
| ARHS 4893 | 20th Century European Art |  |
| ARHS 4913 | American Art to 1860 |  |
| ARHS 4923 | American Art 1860-1960 |  |
| ARHS 4933 | Contemporary Art |  |
| ARHS 4993 | Special Topics in Modern Art |  |
| 6 credit hours in art history (ARHS) electives numbered 3000-level or higher. |  |  |
| 6 credit hours in seminar by completing ARHS 4973 (may be repeated for 6 credit hours) or both ARHS 4973 and ARHS 4763. One of these courses must be completed by the end of the junior year. |  |  |
| 6 credit hours in studio art (ARTS) electives |  | 6 |
| An additional 3 | edit hours in art history (ARHS) numbered 3000- | 3 |

An additional 3 credit hours in art history (ARHS) numbered 3000-

| 9 credit hours from outside the School of Art (as approved by an advisor) | 9 |
| :---: | :---: |
| Any UA offered credit hours 3000-level or higher | 6 |
| Any credit hours 3000-level or higher or any 2000-level credit hours which have a prerequisite | 10 |
| General Electives | 9 |
| Total Hours | 120 |

The Fulbright College Writing Requirement is satisfied by completing an art history (ARHS) course numbered 3000-level or higher with a grade of a 'C' or higher.

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

State minimum core (p.81) requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic adviser.

| First Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| Satisfies General Education Outcome 2.1: |  |  |


| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ARHS course from Group 1 or Group 2 | 3 |  |
| Studio Art electives | 3 |  |

World language at the Intermediate I level (Select a course which satisfies General Education Outcome 3.2) ${ }^{1}$

Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{1}$
Science State Mminimum Core with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$
ARHS course from Group 1 or Group 2
Studio Art electives
World language at the Intermediate II level
Non-School of Art course
Social Sciences State Minimum Core (Select a course which satisfies both General Education Outcomes 3.3 and 4.1) ${ }^{1}$
Year Total:

| Third Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ARHS course from Group 1 or Group 2 | 3 |  |
| ARHS electives 3000-level or higher (Select a course which satisfies General Education Outcome 1.2) ${ }^{1}$ | 3 |  |
| Art History or Studio Art electives | 3 |  |
| Non-School of Art course | 3 |  |
| Social Sciences State Minimum Core (Select a course which satisfies both General Education Outcomes 3.3 and 5.1$)^{1}$ | 3 |  |
| ARHS course from Group 1 or Group 2 |  | 3 |
| ARHS 4973 or ARHS 4763 |  | 3 |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ |  | 3 |
| Non-School of Art course |  | 3 |
| Any UA offered credit hours 3000-level or higher |  | 3 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| ARHS 4973 (may be repeated) (Satisfies General Education Outcome 6.1) or ARHS $4763^{1}$ | 3 |  |
| ARHS electives | 3 |  |
| Any UA offered credit hours 3000-level or higher | 3 |  |
| Any credit hours 3000 -level or higher or any 2000level credit hours which have a prerequisite | 6 |  |
| ARHS electives 3000-level or higher |  | 3 |
| ARHS electives |  | 3 |
| Any credit hours 3000-level or higher or any 2000level credit hours which have a prerequisite |  | 4 |
| General Electives |  | 3 |
| Year Total: | 15 | 13 |

## Total Units in Sequence:

```
%2Fstateminimum%2F&data=04%7C01%7Crcc003%40uark.edu
%7C92f936f375f845bf930708d8e3ec5fa1%7C79c742c4e61c4fa5be89a3cb566a8
%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWv
%7C1000&sdata=ZHBCul1Vytd
%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk%3D&reserved=0) and
the requirements of their major(s) as outlined in the Catalog of Studies.
These courses also fulfill many, if not all, of the General Education
Requirements (https://nam11.safelinks.protection.outlook.com/?url=http
%3A%2F%2Fcatalog.uark.edu%2Fundergraduatecatalog%2Fgened
%2Fgeneraleducation%2F&data=04%7C01%7Crcc003%40uark.edu
%7C92f936f375f845bf930708d8e3ec5fa1%7C79c742c4e61c4fa5be89a3cb566a8
%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWv
%7C1000&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks
%3D&reserved=0). Please visit these pages in the links provided and
consult with your academic advisor when making course selections to
fulfill these requirements.
```


## Requirements for B.F.A. in Art Education with Concentration in Community Practice

## University and College Requirements for the Bachelor of Fine Arts in

 Art EducationIn addition to the state minimum core (p. 81) and the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

```
State Minimum Core. Courses listed below are required for the major 35
and also count toward the state minimum core.
    PHIL 2003 Introduction to Philosophy (ACTS Equivalency =
        PHIL 1103)
    PSYC 2003 General Psychology (ACTS Equivalency = PSYC
        1103)
Art Education Core Requirements 39
    World language up to the Intermediate I level (2000-level)
    COMM 1313 Public Speaking (ACTS Equivalency = SPCH
        1003)
    PHIL 4403 Philosophy of Art
    ARTS 1919C Studio Foundation I
    ARTS 1929C Studio Foundation II
    ARED 1003 Introduction to Art Education
    ARED 3103 Diversity Theory & Pedagogy
    ARED 3003 Curriculum Design & Teaching Practices in Art
        Education
    ARED 4003 Community Art
A minimum of 12 credit hours in art history courses (ARHS) 12
    ARHS 2913 Art History Survey I (ACTS Equivalency = ARTA
        2003) }\mp@subsup{}{}{1
        ARHS 2923 Art History Survey II (ACTS Equivalency = ARTA
        2103) }\mp@subsup{}{}{1
        ARHS 4933 Contemporary Art
        Any ARHS course numbered 3000-level or higher
A minimum of 12 credit hours 3000-level or higher in a selected studio 12
art focus
A minimum of 12 credit hours 3000-level or higher in additional studio 12
art courses exclusive of the selected studio art focus
```

| Art Education Concentration Requirements (select between | 9 |
| :--- | :--- |
| Community Practice or K-12 Teaching) |  |


| General Electives | 1 |
| :--- | ---: |
| Total Hours | 120 |

1 ARHS 2913 and/or ARHS 2923 may also satisfy the Fine Arts state minimum core requirement.

## Requirements for Concentration in Community Practice

| ARED 3013 | Inclusive Art Pedagogy (Service Learning Course) | 3 |
| :--- | :--- | :--- |
| ARED 4773 | Professional Development in Art Education | 3 |
| ARED 486V | Internship in Art Education | 3 |

## Total Hours

The Fulbright College Writing Requirement is satisfied by completing an art history (ARHS) course numbered 3000-level or higher with a grade of a 'C' or higher.

## Art B.F.A. in Art Education with a Concentration in Community Practice Eight-Semester Degree Program

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| Satisfies General Education Outcome 2.1: ${ }^{1}$ |  |  |
| MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency $=$ MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency $=$ MATH 1103) <br> or any MATH course numbered higher than MATH 1203 | 3 |  |
| ARTS 1919C Studio Foundation I | 9 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ |  | 3 |
| ARTS 1929C Studio Foundation II |  | 9 |
| 1013 Elementary I World Language or higher (depending on placement in sequence) |  | 3 |
| APPLY TO B.F.A. IN ART EDUCATION PROGRAM |  |  |
| Year Total: | 15 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| ARTS Focused Study Studio | 3 |  |

ARTS Elective (exclusive of focused study studio) 3
Satisfies General Education Outcome 3.1:1
ARHS 2913 Art History Survey I (ACTS
Equivalency = ARTA 2003) ${ }^{2}$
or ARHS 2923 Art History Survey II (ACTS
Equivalency = ARTA 2103)
ARED 1003 Introduction to Art Education
2003 Intermediate I world language or higher level
STUDENTS MUST BE ACCEPTED INTO THE
B.F.A. PROGRAM PRIOR TO THE FINAL YEAR OF COURSEWORK.
APPLY FOR B.F.A. PROGRAM
MUST BE ACCEPTED INTO B.F.A. PROGRAM TO CONTINUE
ARTS Focused Study Studio 3
ARTS Elective (exclusive of focused study studio) 3
ARHS 2913 Art History Survey I (ACTS
Equivalency = ARTA 2003) $(\text { as needed })^{2}$
or ARHS 2923 Art History Survey II (ACTS
Equivalency $=$ ARTA 2103)
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3) ${ }^{1}$
ARED 3103 Diversity Theory \& Pedagogy
Year Total:

Third Year Fall
ARTS Focused Study Studio 3
ARED 3003 Curriculum Design \& Teaching 3
Practices in Art Education (Satisfies General
Education Outcome 1.2) ${ }^{1}$
Science State Minimum Core lecture with corequisite lab requirement (Satisfies General Education Outcome 3.4) ${ }^{1}$
COMM 1313 Public Speaking (ACTS Equivalency 3
= SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{1}$
PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103) (Satisfies General
Education Outcomes 3.2 and 5.1) ${ }^{1}$
ARTS Focused Study Studio
ARHS 4933 Contemporary Art (or ARHS Art
History Upper-Level Contemporary Art Elective)
ARED 3013 Inclusive Art Pedagogy
U.S. History or Government State Minimum Core
requirement (Satisfies General Education Outcome 4.2) ${ }^{1}$

Science State Minimum Core lecture with corequisite lab requirement (Satisfies General Education Outcome 3.4) ${ }^{1}$
Year Total:
Fourth Year
Fall

ARTS Elective (exclusive of focused study studio) 3

## Units

Spring

## Units

Spring

coursework requirements, an interview with Art Education faculty, and/or other specified recommendations by your program.

## Stage II: Internship

1. Complete the one-semester internship at one elementary and one secondary placement at approved locations.
2. Complete Praxis II requirements. See your adviser for details.

Students should always consult the Coordinator of Teacher Education for any licensure requirement changes. Students will not be licensed to teach in Arkansas until they have met all requirements for licensure as set forth by the Arkansas Department of Education.

Usually licensure in another state is facilitated by qualifying for a license in Arkansas. An application in another state must be made on the application form of that state, which can be obtained by request from the State Teacher Licensure office in the capital city. An official transcript should accompany the application. In many instances the applications are referred to the Coordinator of Teacher Education to verify program completion in teacher education.

## Course Requirements

In addition to the requirements listed above for the Bachelor of Arts in Art Education with a Concentration in K-12 Teaching, the following coursework is required for internship eligibility and degree completion.

| ARED 4953 | Special Topics in Art Education | 3 |
| :--- | :--- | ---: |
| CIED 3023 | Survey of Exceptionalities | 3 |
| or ARED 3013 | Inclusive Art Pedagogy |  |
| CIED 3033 | Classroom Learning Theory | 3 |
| During the final semester, students will complete the following: |  |  |
| ARED 4773 | Professional Development in Art Education | 3 |
| ARED 476V | Student Teaching in Art | $6-12$ |

The Fulbright College Writing Requirement is satisfied by completing an art history (ARHS) course numbered 3000-level or higher with a grade of a 'C' or higher.

## Art B.F.A. in Art Education with a Concentration in K-12 Teaching Eight-Semester Degree Program

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| Satisfies General Education Outcome 2.1: |  |  |
| MATH 1313 Quantitative Reasoning (ACTS |  |  |
| Equivalency = MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency = MATH 1103) |  |  |

## or any MATH course numbered higher than MATH 1203

ARTS 1919C Studio Foundation I 9
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$
ARTS 1929C Studio Foundation II
1013 Elementary II World Language or higher (depending on placement in sequence; otherwise, may take a general elective)
Apply to B.F.A. in Art Education Program
Year Total: 15

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ARTS Focused Study Studio | 3 |  |
| ARTS Elective (exclusive of focused study studio) | 3 |  |
| Satisfies General Education Outcome 3.1: ${ }^{1}$ |  |  |
| ARHS 2913 Art History Survey I (ACTS | 3 |  |
| Equivalency = ARTA 2003) |  |  |
| or ARHS 2923 Art History Survey II (ACTS |  |  |
| Equivalency = ARTA 2103) |  |  |
| ARED 1003 Introduction to Art Education | 3 |  |
| 2003 Intermediate I world language or higher level | 3 |  |

## Obtain Clearance through the Office of Teacher Education <br> Clearance includes passing scores on accepted basic skills assessments and cleared background checks. <br> Students Must Be Accepted into the B.F.A. Program prior to the Final Year of Coursework ARTS Focused Study Studio

ARTS Elective (exclusive of focused study studio) 3
ARHS 2913 Art History Survey I (ACTS 3
Equivalency $=$ ARTA 2003) ${ }^{2}$
or ARHS 2923 Art History Survey II (ACTS
Equivalency = ARTA 2103)
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies General
Education Outcome 3.3) ${ }^{1}$
ARED 3103 Diversity Theory \& Pedagogy 3
Year Total: 15

| Third Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ARTS Focused Study Studio | 3 |  |
| ARED 3003 Curriculum Design \& Teaching | 3 |  |

ARED 3003 Curriculum Design \& Teaching 3
Practices in Art Education (Satisfies General
Education Outcome 1.2) ${ }^{1}$
Science Lecture/Lab State Minimum Core Course 4
(Satisfies General Education Outcome 3.4) ${ }^{1}$
COMM 1313 Public Speaking (ACTS Equivalency
3
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1) ${ }^{1}$

PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103) (Satisfies General
Education Outcomes 3.2 and 5.1) ${ }^{1}$

ARTS Focused Study Studio
CIED 3023 Survey of Exceptionalities or ARED 3013 Inclusive Art Pedagogy
(ARED 3013 is a Service Learning course)
ARHS 4933 Contemporary Art (or ARHS Art
History Upper-Level Contemporary Art Elective) CIED 3033 Classroom Learning Theory ${ }^{1}$
Science Lecture/Lab State Minimum Core Course (Satisfies General Education Outcome 3.4) ${ }^{1}$ Year Total:

| Fourth Year |  |
| :---: | :---: |
|  | Fall |
| ARTS Elective (exclusive of focused study studio) | 3 |
| ARHS Art History Upper-level Elective or ARHS 4933 Contemporary Art | 3 |
| ARED 4953 Special Topics in Art Education | 3 |
| U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2) ${ }^{1}$ | 3 |
| Social Sciences State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1) ${ }^{1}$ | 3 |
| ARED 4003 Community Art (Satisfies General Education Outcome 6.1) ${ }^{1}$ |  |
| ARTS Elective (exclusive of focused study studio) |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ |  |
| PHIL 4403 Philosophy of Art |  |
| General Electives |  |
| Year Total: | 15 |
| Fifth Year |  |
|  | Fall |
| ARED 4773 Professional Development in Art | 3 |
| Education |  |
| ARED 476V Student Teaching in Art | 9 |
| Year Total: | 12 |

9 12
${ }^{1}$ Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb! \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb!
\%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1 \%7C1000\&sdata=ZHBCul1Vytd \%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. the requirements of their major(s) as outlined in the Catalog of Stud
These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb
\%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWv \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks \%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

2 Students completing the Bachelor of Fine Arts may substitute ARHS 2913 or ARHS 2923 to satisfy the content covered in the Fine Arts University/State Core Requirement.

## B.F.A. in Graphic Design

The Bachelor of Fine Arts degree in Graphic Design — often also referred to as visual design, visual communication design or visual communication - will prepare students to be proficient makers and thoughtful problem seekers and solvers in a four-year professional degree program. Students will work seamlessly across a range of media, working to identify appropriate solutions for audience and context. Students will be exposed to a rigorous curriculum covering research, theory, critical thinking, professional practices, conceptual idea-making, all while asking them to formally experiment and refine. The Graphic Design degree focuses on: typography, interactivity, branding and design research, each identified as strongly connected to the design industry, while incorporating the university research initiatives of the School of Art at the University of Arkansas.

## Requirements for Admission to the Bachelor of Fine Arts Degree in Graphic Design

For admission to the B.F.A. in Graphic Design, students must be a declared Art major in the School of Art and successfully complete the art foundation course sequence of ARTS 1919C Studio Foundation I and ARTS 1929C Studio Foundation II. Students must have a 3.0 cumulative GPA plus submit an application and portfolio for review.

## University and College Requirements for a Bachelor of Fine Arts in Graphic Design

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

State Minimum Core (The Humanities requirement is satisfied by
PHIL 2003 listed below. The Fine Arts requirement is satisfied by completing both ARHS 2913 and ARHS 2923 listed below.)

| PHIL 2003 | Introduction to Philosophy (ACTS Equivalency $=$ <br>  <br>  <br> PHIL 1103) | 3 |
| :--- | :--- | :--- |
| ARTS 1919C | Studio Foundation I | 9 |

ARTS 1929C Studio Foundation II 9

GDES 2313 Design Tools and Concepts 3
GDES 3313 Typographic Systems 13
GDES 3323 Typographic Systems 2
GDES 3383 User Experience 3

GDES 4303 Professional Development and Seminar 3
GDES 4313 Interactive Language 3
GDES 4323 Technology in Context 3
GDES 4343 Identity Systems 2
GDES 4353 Human Centered Design 3
GDES 4363 Design for Complexity 3
GDES 4373 Typographic Systems 3


Any School of Art course (ARED, ARHS, ARTS, or GDES)
Interdisciplinary Elective (to be approved by the program director)
General Electives
Year Total:
15

## Total Units in Sequence:

Internship credit considered in lieu of required studios upon approval of professors, based on content and merit of internship.
${ }^{1}$ Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb5 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1 \%7C1000\&sdata=ZHBCul1Vytd \%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb! \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1 \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks $\% 3 D \& r e s e r v e d=0)$. Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## Bachelor of Arts Degree

Transfer students should confer with the departmental advisers prior to entrance for information concerning entrance requirements and transfer credits. Transfer credit will be allowed from other accredited and recognized art departments and schools if the credit earned is compatible with program and course requirements within the University of Arkansas School of Art and reflects a grade of " C " or higher. In addition, a student must spend a minimum of 2 semesters in residence. Credit for advanced studio classes in the school is contingent upon presentation of a portfolio of works created in a college-level class equivalent to the class the student is seeking credit for in the School of Art. Professors in the relevant studio area will evaluate portfolios and determine transfer credits.

## Requirements for a Major in Studio Art

In addition to the University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met.

A minimum of 51 semester hours to include:

| ARTS 1919C | Studio Foundation I | 9 |
| :--- | :--- | :--- |
| ARTS 1929C | Studio Foundation II | 9 |
| 12 Hours of Art History to include: |  |  |
| ARHS 2913 | Art History Survey I (ACTS Equivalency = ARTA <br> 2003) | 3 |
| ARHS 2923 | Art History Survey II (ACTS Equivalency $=$ ARTA <br> 2103) | 3 |

AR
ARHS 4873 Baroque Art
ARHS 4983 Special Topics in Art History
Select one of the following: (Group 2) 3
ARHS 4763 Seminar in Critical Theory
ARHS 4813 The History of Photography

ARHS 4883 18th and 19th Century European Art
ARHS 4893 20th Century European Art
ARHS 4913 American Art to 1860
ARHS 4923 American Art 1860-1960
ARHS 4933 Contemporary Art
ARHS 4993 Special Topics in Modern Art
Students may take ARHS 4973 Seminar in Art History to fulfill their ARHS requirement, but designation as Group 1 or 2 will depend on the specific seminar taken.
In addition, students must complete a minimum of 21 hours of studio 21 art courses, with at least one course from each media category. Within these 21 hours, students must complete at least 6 hours of studio art courses at the 4000-level.

## Media Categories

-2D (drawing, printmaking, painting)
-3D (sculpture, ceramics)

- Digital/Lens (photography, graphic design (digital tools), time \& motion)

Studio Art majors must complete a basic fine arts course that satisfies the University Core requirement from outside the School of Art.

The Fulbright College Writing Requirement is satisfied by completing an art history (ARHS) course numbered 3000-level or higher with a grade of a ' C ' or higher.

## Studio Art B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency = | 3 |  |
| ENGL 1013) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = | 3 |  |
| MATH 1103) |  |  |


| ARTS 1919C Studio Foundation I | 9 |
| :--- | :---: |
| ENGL 1023 Composition II (ACTS Equivalency = |  |
| ENGL 1023) |  |
| ARTS 1929C Studio Foundation II |  |
| University/State Core U.S. history or American |  |
| National Government | 15 |

Second Year Fall
3Studio Art Media Category
ARHS 2913 Art History Survey I (ACTSEquivalency = ARTA 2003)
or ARHS 2923 Art History Survey II (ACTSEquivalency = ARTA 2103)
University/state core humanities or fine arts ..... 3
requirement (as needed)
Science University/state core lecture w/ corequisite ..... 4General Elective
Studio Art Media Category
Studio Art Media Category
ARHS 2913 Art History Survey I (ACTS
Equivalency = ARTA 2003)
or ARHS 2923 Art History Survey II (ACTSEquivalency $=$ ARTA 2103)University/State Core Humanities or Fine ArtsRequirement (as needed)Advanced Level Elective ${ }^{1}$
Year Total: ..... 16

Third Year Fall
Studio Art Media Category ..... 3
Studio Art Media Category or advanced elective ${ }^{1}$ ..... 3
Upper Level ARHS Group 1 or 2 (below) ${ }^{1,2}$ ..... 3
University/State Core Social Science Requirement ..... 3
3000+ General Elective ${ }^{1}$
Studio Art Media Category
ARHS Upper Level Group 1 or 2 (below, asneeded) ${ }^{1,2}$University/state core social science requirementAdvanced Level Elective ${ }^{1}$General Electives
Year Total: ..... 15
Fourth Year ..... FallAdvanced Level Elective ${ }^{1}$Studio Art Media Category3
University/State Core Social Science Requirement ..... 3
General Electives63

## Units

Science University/State Core Lecture w/ ..... 4
Advanced Level Electives (as needed to meet 40- ..... 7
Year Total: ..... 15 ..... 14
Total Units in Sequence: ..... 120
${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273).
2 Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations (p. 273).

Upper Level ARHS Group 1
Select one of the following: 3

| ARHS 4563 | Pre-Columbian Art |
| :--- | :--- |
| ARHS 4573 | Artists of New Spain |
| ARHS 4743 |  |
| ARHS 4753 | Renaissance and Baroque Architecture |
| ARHS 4833 | Ancient Art (ARHS 2913) |
| ARHS 4843 | Medieval Art (ARHS 2913) |
| ARHS 4853 | Italian Renaissance Art (ARHS 2923) |
| ARHS 4863 | Northern Renaissance Art (ARHS 2923) |
| ARHS 4873 | Baroque Art (ARHS 2923) |
| ARHS 4983 | Special Topics in Art History ((ARHS 2913 or |
|  | ARHS 2923)) |

## Upper Level ARHS Group 2

Select one of the following:
ARHS 4763 Seminar in Critical Theory
ARHS 4813 The History of Photography
ARHS 4823 History of Graphic Design ((ARHS 2923))
ARHS 4883 18th and 19th Century European Art (ARHS 2923)
ARHS 4893 20th Century European Art (ARHS 2923)
ARHS 4913 American Art to 1860 (ARHS 2923)
ARHS 4923 American Art 1860-1960 (ARHS 2923)
ARHS 4933 Contemporary Art ((ARHS 2923 and ARHS 4923))
ARHS 4993 Special Topics in Modern Art ((ARHS 2923))
Students may take ARHS 4973 Seminar in Art History to fulfill an ARHS requirement, but designation as Group 1 or 2 will depend on the topic of the specific seminar taken.

## Requirements for B.F.A. in Studio Art with Ceramics Concentration

Admission: Students who earn a grade point average of 3.0 or higher in art (after the completion of ARTS 1919C, ARTS 1929C and a three-credit hour introductory course in their desired concentration) and who have maintained an overall grade point average of 2.0 or higher are eligible to apply to the Studio Art B.F.A. degree program (STARBFA). In addition to meeting the required grade point average, all students must submit, as part of their application, a portfolio of current representative work for evaluation by the art faculty. Acceptance into the program is contingent upon favorable evaluation of the applicant's portfolio by the art faculty.

3 Transfer credit will be allowed from other accredited and recognized art departments and schools if the credit earned is compatible with program
and course requirements within the $U$ of $A$ School of Art and reflects a grade of " $C$ " or higher. The $U$ of $A$ School of Art will not accept more than 50 percent of the required B.F.A. degree credits from another institution, and it will require a portfolio review for acceptance of all studio art transfer courses above the foundations level.

Program Requirements: The Bachelor of Fine Arts degree will be awarded to students, who, upon the completion of the approved program, have maintained a 3.0 grade point average within the $U$ of A School of Art and a 2.0 grade point average overall. Students in the STARBFA program whose grade point average falls below 3.0 in $U$ of $A$ School of Art classes for two consecutive semesters will be dismissed from the program. While in the program, students are required to participate in a faculty-supervised critique once each semester. Finally, a senior exhibition is required prior to completing the program.

## University and College Requirements for a Bachelor of Fine Arts in Studio Art

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all state minimum core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| State Minimum Core |  | 35 |
| :---: | :---: | :---: |
| ARTS 1919C | Studio Foundation I | 9 |
| ARTS 1929C | Studio Foundation II | 9 |
| 15 credit hours in art history courses (ARHS) to include: |  | 15 |
| ARHS 2913 | Art History Survey I (ACTS Equivalency = ARTA 2003) ${ }^{1}$ |  |
| ARHS 2923 | Art History Survey II (ACTS Equivalency = ARTA 2103) ${ }^{1}$ |  |
| Nine credit hours in Art History electives (ARHS) numbered 3000level or higher. PHIL 4403 Philosophy of Art may also be used towards this requirement. |  |  |
| 27 credit hours in studio art electives (ARTS) numbered 3000-level or higher. At a minimum, students must divide the electives into the following: |  |  |
| At least six credit hours in Drawing and/or Painting courses (ARTS) |  |  |
| At least six credit hours in Photography and/or Printmaking courses (ARTS) |  |  |
| At least six credit hours in Ceramics and/or Sculpture courses (ARTS) |  |  |
| 21 credit hours towards a concentration in a single studio art media area (Ceramics, Drawing, Painting, Photography, Printmaking, or Sculpture) numbered 3000-level or higher, with six of these credit hours numbered 4000-level or higher. |  |  |
| ARTS 4993 | Studio Art BFA Capstone | 3 |
| General Electives |  |  |
| Total Hours |  | 120 |
| ${ }^{1}$ Completion of ARHS 2913 (http://catalog.uark.edu/search/?P=ARHS \%202913) and ARHS 2923 (http://catalog.uark.edu/search/?P=ARHS \%202923) satisfies the content covered in ARHS 1003 (http:// |  |  |

catalog.uark.edu/search/?P=ARHS\ 1003) for fulfillment of the Fine Arts State Minimum Core requirement.

Writing Requirement: School of Art majors will satisfy the Fulbright College Writing Requirement by earning a grade of " C " or higher on the final paper in an Art History (ARHS) course numbered 3000-level or higher or by successful completion of an honors thesis.

## Ceramics Concentration

21 credit hours in Ceramics courses (ARTS) numbered 3000-level or higher, with six of these credit hours numbered 4000-level or higher.

## Art B.F.A. with Ceramics Concentration Eight-Semester Degree Program First Year

ENGL 1013 Composition I (ACTS Equivalency 3
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
Satisfies General Education Outcome 2.1:
MATH 1313 Quantitative Reasoning (ACTS
Equivalency $=$ MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency = MATH 1103)
or any MATH course numbered higher than MATH 1203
ARTS 1919C Studio Foundation I 9
ENGL 1023 Composition II (ACTS Equivalency 3
= ENGL 1023) (Satisfies General Education Outcome 1.1)
State Minimum Core—Science with corequisite lab 4
(Satisfies General Education Outcome 3.4)
ARTS 1929C Studio Foundation II 9
Year Total: 15

| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) | 4 |  |
| Satisfies General Education Outcome 3.1: |  |  |
| ARHS 2913 Art History Survey I (ACTS <br> Equivalency = ARTA 2003) <br> or ARHS 2923 Art History Survey II (ACTS <br> Equivalency = ARTA 2103) | 3 |  |
| Ceramics 1 | 3 |  |
| Studio Art Elective 1 | 3 |  |
| Studio Art Elective 2 | 3 |  |
| State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2) |  | 3 |
| ARHS 2913 Art History Survey I (ACTS <br> Equivalency = ARTA 2003) <br> or ARHS 2923 Art History Survey II (ACTS <br> Equivalency = ARTA 2103) |  | 3 |
| Ceramics 2 |  | 3 |
| Studio Art Elective 3 |  | 3 |
| Studio Art Elective 4 |  | 3 |

Year Total:

| Third Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| State Minimum Core—Social Sciences (Satisfies | 3 |  |
| General Education Outcomes 3.3 and 4.1) |  |  |
| Ceramics 3 | 3 |  |
| Studio Art Elective 5 | 3 |  |
| Art History Elective | 3 | 3 |
| General Elective | 3 | 3 |
| State Minimum Core—Social Sciences (Satisfies |  |  |
| General Education Outcomes 3.3 and 5.1) |  |  |

General Education Outcomes 3.3 and 5.1) ${ }^{2}$
Ceramics 4
Ceramics 5
Studio Art Elective 6
Art History Elective
3
Year Total:
15


RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033. Note, courses cannot be counted twice in degree requirements.

## Requirements for B.F.A. in Studio Art with Drawing Concentration

Admission: Students who earn a grade point average of 3.0 or higher in art (after the completion of ARTS 1919C, ARTS 1929C and a three-credit hour introductory course in their desired concentration) and who have maintained an overall grade point average of 2.0 or higher are eligible to apply to the Studio Art B.F.A. degree program (STARBFA). In addition to meeting the required grade point average, all students must submit, as part of their application, a portfolio of current representative work for evaluation by the art faculty. Acceptance into the program is contingent upon favorable evaluation of the applicant's portfolio by the art faculty.

Transfer credit will be allowed from other accredited and recognized art departments and schools if the credit earned is compatible with program and course requirements within the $U$ of $A$ School of Art and reflects a grade of "C" or higher. The $U$ of A School of Art will not accept more than 50 percent of the required B.F.A. degree credits from another institution, and it will require a portfolio review for acceptance of all studio art transfer courses above the foundations level.

Program Requirements: The Bachelor of Fine Arts degree will be awarded to students, who, upon the completion of the approved program, have maintained a 3.0 grade point average within the $U$ of A School of Art and a 2.0 grade point average overall. Students in the STARBFA program whose grade point average falls below 3.0 in $U$ of A School of Art classes for two consecutive semesters will be dismissed from the program. While in the program, students are required to participate in a faculty-supervised critique once each semester. Finally, a senior exhibition is required prior to completing the program.

## University and College Requirements for a Bachelor of Fine Arts in Studio Art

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all state minimum core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| State Minimum Core |  | 35 |
| :---: | :---: | :---: |
| ARTS 1919C | Studio Foundation I | 9 |
| ARTS 1929C | Studio Foundation II | 9 |
| 15 credit hours in art history courses (ARHS) to include: |  | 15 |
| ARHS 2913 | Art History Survey I (ACTS Equivalency = ARTA 2003) ${ }^{1}$ |  |
| ARHS 2923 | Art History Survey II (ACTS Equivalency = ARTA 2103) ${ }^{1}$ |  |

Nine credit hours in Art History electives (ARHS) numbered 3000level or higher. PHIL 4403 Philosophy of Art may also be used towards this requirement.
27 credit hours in studio art electives (ARTS) numbered 3000-level or higher. At a minimum, students must divide the electives into the following:

At least six credit hours in Drawing and/or Painting courses
(ARTS)

At least six credit hours in Photography and/or Printmaking courses (ARTS)
At least six credit hours in Ceramics and/or Sculpture courses (ARTS)
21 credit hours towards a concentration in a single studio art media 21 area (Ceramics, Drawing, Painting, Photography, Printmaking, or Sculpture) numbered 3000-level or higher, with six of these credit hours numbered 4000-level or higher.

| ARTS 4993 | Studio Art BFA Capstone | 3 |
| :--- | :--- | :--- |
| General Electives | 1 |  |

Total Hours
1 Completion of ARHS 2913 (http://catalog.uark.edu/search/?P=ARHS \%202913) and ARHS 2923 (http://catalog.uark.edu/search/?P=ARHS \%202923) satisfies the content covered in ARHS 1003 (http:// catalog.uark.edu/search/?P=ARHS\ 1003) for fulfillment of the Fine Arts State Minimum Core requirement.

Writing Requirement: School of Art majors will satisfy the Fulbright College Writing Requirement by earning a grade of "C" or higher on the final paper in an Art History (ARHS) course numbered 3000-level or higher or by successful completion of an honors thesis.

## Requirements for Drawing Concentration

21 credit hours in Drawing courses (ARTS) numbered 3000-level or higher, with six of these credit hours numbered 4000-level or higher.

## Art B.F.A. with Drawing Concentration Eight-Semester Degree Program

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency <br> ( ENGL 1013) (Satisfies General Education <br> Outcome 1.1) <br> Satisfies General Education Outcome 2.1: <br> MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency = MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency = MATH 1103) <br> or any MATH course numbered higher than <br> MATH 1203 | 3 |  |
| ARTS 1919C Studio Foundation I |  |  |
| ENGL 1023 Composition II (ACTS Equivalency <br> = ENGL 1023) (Satisfies General Education <br> Outcome 1.1) <br> State Minimum Core-Science with corequisite lab <br> (Satisfies General Education Outcome 3.4) <br> ARTS 1929C Studio Foundation II <br> Year Total: |  |  |

(Satisfies General Education Outcome 3.4)
Satisfies General Education Outcome 3.1:

ARHS 2913 Art History Survey I (ACTS
Equivalency $=$ ARTA 2003)
or ARHS 2923 Art History Survey II (ACTS
Equivalency $=$ ARTA 2103)
Drawing 1
Studio Art Elective 13
Studio Art Elective 23

State Minimum Core—U.S. History or Government 3
(Satisfies General Education Outcome 4.2)
ARHS 2913 Art History Survey I (ACTS
Equivalency $=$ ARTA 2003)
or ARHS 2923 Art History Survey II (ACTS
Equivalency $=$ ARTA 2103)
Drawing 2 3
Studio Art Elective 3 3
Studio Art Elective 4
Year Total: 16

| Third Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| State Minimum Core—Social Sciences (Satisfies | 3 |  |
| General Education Outcomes 3.3 and 4.1) |  |  |
| Drawing 3 | 3 |  |
| Studio Art Elective 5 | 3 |  |
| Art History Elective | 3 |  |
| General Elective | 3 |  |

$\begin{array}{ll}\text { State Minimum Core—Social Sciences (Satisfies } & 3 \\ \text { General Education Outcomes } 3.3 \text { and } 5.1)^{2} & \end{array}$
Drawing 4 3
Drawing 5 3
Studio Art Elective 6
Art History Elective 3
Year Total: 15

Fourth Year | Units |
| ---: |
| Fall |

State Minimum Core—Social Sciences (Satisfies 3
General Education Outcome 3.3) ${ }^{3}$
Drawing 6 4000-level
3
Studio Art Elective 7 3
Studio Art Elective 8 3
Art History Elective 3
State Minimum Core—Humanities (Satisfies 3
General Education Outcome 3.2)
Drawing 7 4000-level
Studio Art Elective 9 3
ARTS 4993 Studio Art BFA Capstone (Satisfies 3
General Education Outcomes 1.2 and 6.1)
General Elective
Year Total: 15
${ }^{1}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{2}$ The Social Sciences Elective courses that satisfy General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H,HUMN 2114H, INST 2813, INST 2813H, PLSC 2813, or PLSC 2813H.
${ }^{3}$ The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033. Note, courses cannot be counted twice in degree requirements.

## Requirements for B.F.A. in Studio Art with Painting Concentration

Admission: Students who earn a grade point average of 3.0 or higher in art (after the completion of ARTS 1919C, ARTS 1929C and a three-credit hour introductory course in their desired concentration) and who have maintained an overall grade point average of 2.0 or higher are eligible to apply to the Studio Art B.F.A. degree program (STARBFA). In addition to meeting the required grade point average, all students must submit, as part of their application, a portfolio of current representative work for evaluation by the art faculty. Acceptance into the program is contingent upon favorable evaluation of the applicant's portfolio by the art faculty.

Transfer credit will be allowed from other accredited and recognized art departments and schools if the credit earned is compatible with program and course requirements within the $U$ of $A$ School of Art and reflects a grade of " $C$ " or higher. The $U$ of A School of Art will not accept more than 50 percent of the required B.F.A. degree credits from another institution, and it will require a portfolio review for acceptance of all studio art transfer courses above the foundations level.

Program Requirements: The Bachelor of Fine Arts degree will be awarded to students, who, upon the completion of the approved program, have maintained a 3.0 grade point average within the $U$ of $A$ School of Art and a 2.0 grade point average overall. Students in the STARBFA program whose grade point average falls below 3.0 in $U$ of A School of Art classes for two consecutive semesters will be dismissed from the program. While in the program, students are required to participate in a faculty-supervised critique once each semester. Finally, a senior exhibition is required prior to completing the program.

## University and College Requirements for a Bachelor of Fine Arts in Studio Art

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all state minimum core requirements are met, students may substitute with general electives in consultation with their academic advisor.
State Minimum Core ..... 35
ARTS 1919C Studio Foundation I ..... 9
ARTS 1929C Studio Foundation II ..... 9
15 credit hours in art history courses (ARHS) to include: ..... 15
ARHS 2913 Art History Survey I (ACTS Equivalency = ARTA2003) ${ }^{1}$
ARHS 2923 Art History Survey II (ACTS Equivalency = ARTA 2103) ${ }^{1}$
Nine credit hours in Art History electives (ARHS) numbered 3000level or higher. PHIL 4403 Philosophy of Art may also be used towards this requirement.
27 credit hours in studio art electives (ARTS) numbered 3000-level
following:
At least six credit hours in Drawing and/or Painting courses (ARTS)
At least six credit hours in Photography and/or Printmaking courses (ARTS)
At least six credit hours in Ceramics and/or Sculpture courses (ARTS)
21 credit hours towards a concentration in a single studio art media area (Ceramics, Drawing, Painting, Photography, Printmaking, or Sculpture) numbered 3000 -level or higher, with six of these credit hours numbered 4000-level or higher.
ARTS 4993 Studio Art BFA Capstone 3
General Electives 1
Total Hours ..... 120
${ }^{1}$ Completion of ARHS 2913 (http://catalog.uark.edu/search/?P=ARHS \%202913) and ARHS 2923 (http://catalog.uark.edu/search/?P=ARHS \%202923) satisfies the content covered in ARHS 1003 (http:// catalog.uark.edu/search/?P=ARHS\ 1003) for fulfillment of the Fine Arts State Minimum Core requirement.
Writing Requirement: School of Art majors will satisfy the Fulbright College Writing Requirement by earning a grade of " C " or higher on the final paper in an Art History (ARHS) course numbered 3000-level or higher or by successful completion of an honors thesis.

## B.F.A. in Studio Art with Painting Concentration

## Eight-Semester Plan

## Art B.F.A. with Painting Concentration

 Eight-Semester Degree Program| First Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |

3
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
Satisfies General Education Outcome 2.1:
MATH 1313 Quantitative Reasoning (ACTS
3
Equivalency $=$ MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency $=$ MATH 1103)
or any MATH course numbered higher than MATH 1203

| ARTS 1919C Studio Foundation I | 9 |  |
| :---: | :---: | :---: |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| State Minimum Core-Science with corequisite lab ARTS 1929C Studio Foundation II |  | 9 |
| Year Total: | 15 | 16 |
| Second Year |  | Units |
|  | Fall | Spring |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) | 4 |  |
| Satisfies General Education Outcome 3.1: |  |  |
| ARHS 2913 Art History Survey I (ACTS Equivalency = ARTA 2003) or ARHS 2923 Art History Survey II (ACTS Equivalency = ARTA 2103) | 3 |  |
| Painting 1 | 3 |  |
| Studio Art Elective 1 | 3 |  |
| Studio Art Elective 2 | 3 |  |
| State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2) |  | 3 |
| ARHS 2913 Art History Survey I (ACTS Equivalency = ARTA 2003) or ARHS 2923 Art History Survey II (ACTS Equivalency = ARTA 2103) |  | 3 |
| Painting 2 |  | 3 |
| Studio Art Elective 3 |  | 3 |
| Studio Art Elective 4 |  | 3 |
| Year Total: | 16 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| State Minimum Core-Social Sciences (Satisfies General Education Outcomes 3.3 and 4.1) ${ }^{1}$ | 3 |  |
| Studio Art Elective 5 | 3 |  |
| Art History Elective | 3 |  |
| General Elective | 3 |  |
| Painting 3 | 3 |  |
| State Minimum Core-Social Sciences (Satisfies General Education Outcomes 3.3 and 5.1) ${ }^{2}$ |  | 3 |
| Painting 4 |  | 3 |
| Painting 5 |  | 3 |
| Studio Art Elective 6 |  | 3 |
| Art History Elective |  | 3 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| State Minimum Core-Social Sciences (Satisfies General Education Outcome 3.3) ${ }^{3}$ | 3 |  |
| Painting 6 4000-level | 3 |  |
| Studio Art Elective 7 | 3 |  |
| Studio Art Elective 8 | 3 |  |



## Requirements for B.F.A. in Studio Art with Photography Concentration

Admission: Students who earn a grade point average of 3.0 or higher in art (after the completion of ARTS 1919C, ARTS 1929C and a three-credit hour introductory course in their desired concentration) and who have maintained an overall grade point average of 2.0 or higher are eligible to apply to the Studio Art B.F.A. degree program (STARBFA). In addition to meeting the required grade point average, all students must submit, as part of their application, a portfolio of current representative work for evaluation by the art faculty. Acceptance into the program is contingent upon favorable evaluation of the applicant's portfolio by the art faculty.

Transfer credit will be allowed from other accredited and recognized art departments and schools if the credit earned is compatible with program and course requirements within the $U$ of $A$ School of Art and reflects a grade of "C" or higher. The $U$ of A School of Art will not accept more than 50 percent of the required B.F.A. degree credits from another institution, and it will require a portfolio review for acceptance of all studio art transfer courses above the foundations level.

Program Requirements: The Bachelor of Fine Arts degree will be awarded to students, who, upon the completion of the approved program, have maintained a 3.0 grade point average within the $U$ of A School of Art and a 2.0 grade point average overall. Students in the STARBFA program whose grade point average falls below 3.0 in $U$ of A School of Art classes for two consecutive semesters will be dismissed from the program. While in the program, students are required to participate in a faculty-supervised
critique once each semester. Finally, a senior exhibition is required prior to completing the program.

## University and College Requirements for a Bachelor of Fine Arts in Studio Art

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all state minimum core requirements are met, students may substitute with general electives in consultation with their academic advisor.
State Minimum Core 35
ARTS 1919C Studio Foundation I 9
ARTS 1929C Studio Foundation II 9

15 credit hours in art history courses (ARHS) to include: 15
ARHS 2913 Art History Survey I (ACTS Equivalency = ARTA 2003) ${ }^{1}$

ARHS 2923 Art History Survey II (ACTS Equivalency = ARTA 2103) ${ }^{1}$

Nine credit hours in Art History electives (ARHS) numbered 3000level or higher. PHIL 4403 Philosophy of Art may also be used towards this requirement.
27 credit hours in studio art electives (ARTS) numbered 3000-level or higher. At a minimum, students must divide the electives into the following:

At least six credit hours in Drawing and/or Painting courses (ARTS)
At least six credit hours in Photography and/or Printmaking courses (ARTS)
At least six credit hours in Ceramics and/or Sculpture courses (ARTS)
21 credit hours towards a concentration in a single studio art media area (Ceramics, Drawing, Painting, Photography, Printmaking, or Sculpture) numbered 3000-level or higher, with six of these credit hours numbered 4000-level or higher.
ARTS 4993 Studio Art BFA Capstone 3

| General Electives | 1 |
| :--- | ---: |
| Total Hours | $\mathbf{1 2 0}$ |

${ }^{1}$ Completion of ARHS 2913 (http://catalog.uark.edu/search/?P=ARHS \%202913) and ARHS 2923 (http://catalog.uark.edu/search/?P=ARHS \%202923) satisfies the content covered in ARHS 1003 (http:// catalog.uark.edu/search/?P=ARHS\ 1003) for fulfillment of the Fine Arts State Minimum Core requirement.

Writing Requirement: School of Art majors will satisfy the Fulbright College Writing Requirement by earning a grade of " C " or higher on the final paper in an Art History (ARHS) course numbered 3000-level or higher or by successful completion of an honors thesis.

## B.F.A. in Studio Art with Photograph Concentration <br> Eight Semester Plan <br> Art B.F.A. with Photography Concentration Eight-Semester Degree Program

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) <br> Satisfies General Education Outcome 2.1: |  |  |
| MATH 1313 Quantitative Reasoning (ACTS | 3 |  |
| Equivalency = MATH 1113) |  |  |
| or MATH 1203 College Algebra (ACTS |  |  |
| Equivalency = MATH 1103) |  |  |
| $\quad$ or any MATH course numbered higher than |  |  |
| MATH 1203 |  |  |


| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| State Minimum Core—Science with corequisite lab | 4 |  |

Equivalency = ARTA 2003)
or ARHS 2923 Art History Survey II (ACTS
Equivalency = ARTA 2103)
Photography 2
Studio Art Elective 3
Studio Art Elective 4
Year Total:

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

| Studio Art Elective 5 | 3 |  |
| :--- | :--- | :--- |
| Art History Elective | 3 |  |
| General Elective | 3 | 3 |
| State Minimum Core-Social Sciences (Satisfies |  |  |
| General Education Outcome 3.3 and 5.1) |  |  |

## Requirements for B.F.A. in Studio Art with Printmaking Concentration

Admission: Students who earn a grade point average of 3.0 or higher in art (after the completion of ARTS 1919C, ARTS 1929C and a three-credit hour introductory course in their desired concentration) and who have maintained an overall grade point average of 2.0 or higher are eligible to
apply to the Studio Art B.F.A. degree program (STARBFA). In addition to meeting the required grade point average, all students must submit, as part of their application, a portfolio of current representative work for evaluation by the art faculty. Acceptance into the program is contingent upon favorable evaluation of the applicant's portfolio by the art faculty.

Transfer credit will be allowed from other accredited and recognized art departments and schools if the credit earned is compatible with program and course requirements within the $U$ of $A$ School of Art and reflects a grade of "C" or higher. The U of A School of Art will not accept more than 50 percent of the required B.F.A. degree credits from another institution, and it will require a portfolio review for acceptance of all studio art transfer courses above the foundations level.

Program Requirements: The Bachelor of Fine Arts degree will be awarded to students, who, upon the completion of the approved program, have maintained a 3.0 grade point average within the $U$ of $A$ School of Art and a 2.0 grade point average overall. Students in the STARBFA program whose grade point average falls below 3.0 in $U$ of A School of Art classes for two consecutive semesters will be dismissed from the program. While in the program, students are required to participate in a faculty-supervised critique once each semester. Finally, a senior exhibition is required prior to completing the program.

## University and College Requirements for a Bachelor of Fine Arts in Studio Art

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all state minimum core requirements are met, students may substitute with general electives in consultation with their academic advisor.
State Minimum Core ..... 35
ARTS 1919C Studio Foundation I ..... 9
ARTS 1929C Studio Foundation II ..... 9
15 credit hours in art history courses (ARHS) to include: ..... 15

ARHS 2913 Art History Survey I (ACTS Equivalency = ARTA 2003) ${ }^{1}$

ARHS 2923 Art History Survey II (ACTS Equivalency = ARTA 2103) ${ }^{1}$

Nine credit hours in Art History electives (ARHS) numbered 3000level or higher. PHIL 4403 Philosophy of Art may also be used towards this requirement.
27 credit hours in studio art electives (ARTS) numbered 3000 -level or higher. At a minimum, students must divide the electives into the following:

> At least six credit hours in Drawing and/or Painting courses (ARTS)

At least six credit hours in Photography and/or Printmaking courses (ARTS)
At least six credit hours in Ceramics and/or Sculpture courses (ARTS)
21 credit hours towards a concentration in a single studio art media area (Ceramics, Drawing, Painting, Photography, Printmaking, or Sculpture) numbered 3000 -level or higher, with six of these credit hours numbered 4000-level or higher.
ARTS 4993 Studio Art BFA Capstone

| General Electives |
| :--- |
| Total Hours |
|  |
| ${ }^{1}$ Completion of ARHS 2913 (http://catalog.uark.edu/search/?P=ARHS |
| \%202913) and ARHS 2923 (http://catalog.uark.edu/search/?P=ARHS |
| ${ }^{\text {\%202923) satisfies the content covered in ARHS 1003 (http:// }}$ |
| catalog.uark.edu/search/?P=ARHS\%201003) for fulfillment of the Fine |
| Arts State Minimum Core requirement. |

Writing Requirement: School of Art majors will satisfy the Fulbright College Writing Requirement by earning a grade of "C" or higher on the final paper in an Art History (ARHS) course numbered 3000-level or higher or by successful completion of an honors thesis.

## Printmaking Concentration Requirements:

21 credit hours in Printmaking courses (ARTS) numbered 3000-level or higher, with six of these credit hours numbered 4000-level or higher.

## Art B.F.A. with Printmaking Concentration Eight-Semester Degree Program

| First Year | Fall | Unit <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency |  |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 3 |  |
| Satisfies General Education Outcome 2.1: <br> MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency = MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency = MATH 1103) <br> or any MATH course numbered higher than |  |  |
| $\quad$ MATH 1203 |  |  |

State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2)

ARHS 2913 Art History Survey I (ACTS
Equivalency $=$ ARTA 2003)
or ARHS 2923 Art History Survey II (ACTS
Equivalency $=$ ARTA 2103)
Printmaking 2
Studio Art Elective 3 3
Studio Art Elective 4 3
$\begin{array}{lll}\text { Year Total: } & 16 & 15\end{array}$

| Third Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| State Minimum Core—Social Sciences (Satisfies | 3 |  |
| General Education Outcomes 3.3 and 4.1) |  |  |
| Printmaking 3 | 3 |  |
| Studio Art Elective 5 | 3 |  |
| Art History Elective | 3 |  |
| General Elective | 3 |  |

State Minimum Core—Social Sciences (Satisfies 3
General Education Outcomes 3.3 and 5.1) ${ }^{2}$
Printmaking 4
Printmaking 5 3
Studio Art Elective 6 3
Art History Elective 3
Year Total: 15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| State Minimum Core—Social Sciences (Satisfies | 3 |  |

General Education Outcome 3.3) ${ }^{3}$
Printmaking 6 4000-level 3
Studio Art Elective 7 3
3 Studio Art Elective 8 3
Art History Elective 3
State Minimum Core—Humanities (Satisfies 3
4 General Education Outcome 3.2)
Printmaking 7 4000-level 3
9 Studio Art Elective 9 3
16 ARTS 4993 Studio Art BFA Capstone (Satisfies 3
General Education Outcomes 1.2 and 6.1)
General Elective 1
Year Total: 15 13

Total Units in Sequence:
1 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
2 The Social Sciences Elective courses that satisfy General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H,HUMN 2114H, INST 2013, INST 2813, INST 2813H,PLSC 2813, or PLSC 2813H.

3 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033. Note, courses cannot be counted twice in degree requirements.

## Requirements for B.F.A. in Studio Art with Sculpture and Experimental Media Concentration

Admission: Students who earn a grade point average of 3.0 or higher in art (after the completion of ARTS 1919C, ARTS 1929C and a three-credit hour introductory course in their desired concentration) and who have maintained an overall grade point average of 2.0 or higher are eligible to apply to the Studio Art B.F.A. degree program (STARBFA). In addition to meeting the required grade point average, all students must submit, as part of their application, a portfolio of current representative work for evaluation by the art faculty. Acceptance into the program is contingent upon favorable evaluation of the applicant's portfolio by the art faculty.

Transfer credit will be allowed from other accredited and recognized art departments and schools if the credit earned is compatible with program and course requirements within the $U$ of $A$ School of Art and reflects a grade of "C" or higher. The $U$ of $A$ School of Art will not accept more than 50 percent of the required B.F.A. degree credits from another institution, and it will require a portfolio review for acceptance of all studio art transfer courses above the foundations level.

Program Requirements: The Bachelor of Fine Arts degree will be awarded to students, who, upon the completion of the approved program, have maintained a 3.0 grade point average within the $U$ of $A$ School of Art and a 2.0 grade point average overall. Students in the STARBFA program whose grade point average falls below 3.0 in $U$ of $A$ School of Art classes for two consecutive semesters will be dismissed from the program. While in the program, students are required to participate in a faculty-supervised critique once each semester. Finally, a senior exhibition is required prior to completing the program.

## University and College Requirements for a Bachelor of Fine Arts in Studio Art

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all state minimum core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| State Minimum Core |  |
| :---: | :---: |
| ARTS 1919C | Studio Foundation I |
| ARTS 1929C | Studio Foundation II |
| 15 credit hours in art history courses (ARHS) to include: |  |
| ARHS 2913 | Art History Survey I (ACTS Equivalency = ARTA 2003) ${ }^{1}$ |
| ARHS 2923 | Art History Survey II (ACTS Equivalency = ARTA 2103) ${ }^{1}$ |

Nine credit hours in Art History electives (ARHS) numbered 3000level or higher. PHIL 4403 Philosophy of Art may also be used towards this requirement.
27 credit hours in studio art electives (ARTS) numbered 3000-level or higher. At a minimum, students must divide the electives into the following:

At least six credit hours in Drawing and/or Painting courses (ARTS)
At least six credit hours in Photography and/or Printmaking courses (ARTS)
At least six credit hours in Ceramics and/or Sculpture courses (ARTS)
21 credit hours towards a concentration in a single studio art media area (Ceramics, Drawing, Painting, Photography, Printmaking, or Sculpture) numbered 3000-level or higher, with six of these credit hours numbered 4000-level or higher.
ARTS 4993 Studio Art BFA Capstone 3
General Electives 1
Total Hours 120
1 Completion of ARHS 2913 (http://catalog.uark.edu/search/?P=ARHS \%202913) and ARHS 2923 (http://catalog.uark.edu/search/?P=ARHS \%202923) satisfies the content covered in ARHS 1003 (http:// catalog.uark.edu/search/?P=ARHS\ 1003) for fulfillment of the Fine Arts State Minimum Core requirement.

Writing Requirement: School of Art majors will satisfy the Fulbright College Writing Requirement by earning a grade of " C " or higher on the final paper in an Art History (ARHS) course numbered 3000-level or higher or by successful completion of an honors thesis.

## Sculpture Concentration Requirements:

21 credit hours in Sculpture and Experimental Media courses (ARTS) numbered 3000-level or higher, with six of these credit hours numbered 4000-level or higher.

## Art B.F.A. with Sculpture and Experimental Media Concentration Eight-Semester Degree Program

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| Satisfies General Education Outcome 2.1: <br> MATH 1313 Quantitative Reasoning (ACTS | 3 |  |
| Equivalency = MATH 1113) |  |  |
| or MATH 1203 College Algebra (ACTS |  |  |
| Equivalency = MATH 1103) <br> or any MATH course numbered higher than <br> MATH 1203 |  |  |
| ARTS 1919C Studio Foundation I |  |  |
| ENGL 1023 Composition II (ACTS Equivalency | 9 |  |
| = ENGL 1023) (Satisfies General Education |  |  |
| Outcome 1.1) <br> State Minimum Core-Science with corequisite lab <br> (Satisfies General Education Outcome 3.4) |  | 4 |



## Faculty

Adams, Carris, M.F.A. (University of Chicago), B.F.A. (University of Texas at Austin), Visiting Professor, 2022.
Amirvaghefi, Maryamsadat, M.F.A. (University of Arkansas), B.F.A. (Sooreh Art University, Tehran), Instructor, 2017.
Andree, David, M.F.A. (State University of New York), B.F.A.
(Minneapolis College of Art and Design), Assistant Professor, 2015.
Andree, Kara M., M.F.A. (State University of New York at Buffalo), B.F.A. (Minneapolis College of Art and Design), Instructor, 2016.
Barnes, Ty, M.F.A. (University of Arkansas), B.F.A. (Mississippi State University), Instructor, 2022.
Benbrahim, Dina, M.F.A. (University of Florida), M.A. (Simon Fraser University), B.A. (Simon Fraser University), Endowed Assistant Professor, 2021.

Blakinger, John, Ph.D., M.A. (Stanford University), B.A. (Wesleyan University), Associate Professor, Endowed Chair in Art History, 2020.
Callander, Adrienne, M.F.A. (Rutgers University), B.A. (Reed College), Visiting Assistant Professor, 2017.
Callander, Neil, M.F.A. (Rutgers University), B.F.A. (Indiana University at Bloomington), Assistant Professor, 2017.
Camacho-Valencia, Paulina, Ph.D. (University of Illinois Urbana-
Champaign), M.A. (School of Art Institute of Chicago), Endowed Assistant Professor in Art History, 2022.
Cassiano Alverez, Renata, M.F.A. (University of MassachusettsDartmouth), Instructor, 2019.
Chioffi, David Charles, M.A. (Wesleyan University), B.F.A. (The
Rochester Institute of Technology), Professor, 2013, 2019.
Drolen, Rebecca, M.F.A., B.A. (Indiana University, Bloomington), Assistant Professor, 2015.
Edwards, Vincent A., M.F.A. (Herron School of Art and Design), B.F.A. (Indiana University), Instructor, 2016.
Efstathiou, Kes, M.F.A. (Rochester Institute of Technology), B.A.
(Montana State University), Visiting Assistant Professor, 2022.
Greenhill, Jennifer, Ph.D. (Yale University), M.A. (Williams College), B.A. (University of California, Los Angeles), Professor, Endowed Chair in Art History, 2020.
Hapgood, Thomas Layley, M.F.A., B.A. (University of Arizona), Associate Professor, 2005, 2012.
Hartenberger, Craig, M.F.A. (Kent State University), B.F.A. (Missouri State University), Instructor, 2022.
Hernandez, Gaby, M.F.A. (University of Florida), B.A. (Universidad de Costa Rica), Endowed Associate Professor of Graphic Design, 2021.
Hogan, Adam S., M.A, M.F.A (Washington University in St. Louis), Assistant Professor, 2014.
Hulen, Jeannie, M.F.A. (Louisiana State University), B.F.A. (Kansas City Art Institute), Professor, 2002, 2018.
Issa, Nadia, Ph.D. (Academy of Fine Arts in Warsaw), Teaching Assistant Professor, 2022.
Jacobs, Lynn Frances, Ph.D., M.A. (New York University), B.A.
(Princeton University), Distinguished Professor, 1989, 2016.
Joseph, Qwist, M.F.A. (University of Nebraska-Lincoln), Instructor, 2022.
King, Sam, M.F.A. (Indiana University at Bloomington), B.F.A. (University of Tulsa), Assistant Professor, 2011, 2016.
Lane, Marty Maxwell, M.G.D. (North Carolina State University), B.F.A. (University of Illinois at Chicago), Associate Professor, 2014, 2019.
LaPorte, Angela M., Ph.D. (Pennsylvania State University), M.A. (Arizona
State University), B.S. (La Roche College), Professor, 1998, 2016.
Lee, Oh Mee, M.A. (University of Oregon), Visiting Assistant Professor, 2019.

Levenson, Abra, Ph.D., M.A.(Princeton), B.A. (University of California, Berkeley), Assistant Professor, 2018.

Lopez, Linda Nguyen, M.F.A. (University of Colorado-Boulder), B.F.A. (California State University-Chico), Instructor, 2012.
McConnell, Mathew S., M.F.A. (University of Colorado-Boulder), B.F.A.
(Valdosta State University), Associate Professor, 2011, 2016.
McMahon, Bree, M.A., B.A. (North Carolina State University), Assistant Professor, 2018.
Mitchell, Marc E., M.F.A. (Boston University), Associate Professor, 2014, 2019.

Murff, Zora J., M.F.A. (University of Nebraska), Assistant Professor, 2018.

Place, Alison L., M.F.A (Miami University), Assistant Professor, 2017.
Posnak, Adam, M.F.A (Louisiana State University and A\&M College), Instructor, 2010.
Pulido Rull, Ana, Ph.D., M.A. (Harvard University), B.A. (National
Autonomous University of Mexico), Associate Professor, 2012, 2018.
Richards, Kat, M.F.A. (University of Arkansas), B.A. (University of Kansas), Visiting Assistant Professor, 2022.
Salas, Alexis, Ph.D. (University of Texas at Austin), Endowed Assistant Professor, 2022.
Schmitt, Jean, M.F.A. (Vermont College), B.F.A. (Alfred University), Assistant Professor, 2022.
Schulte, Christopher M., Ph.D. (Pennsylvania State University), Associate Professor, 2019.
Slone, Ryan B., B.F.A (University of Arkansas), Instructor, 2001.
Springer, Bethany Lynn, M.F.A. (University of Georgia), B.A. (Virginia
Polytechnic Institute and State University), Associate Professor, 2006, 2012.

Svendgard, Madison, M.F.A. (University of Arkansas), B.F.A. (University of Nebraska), Instructor, 2022.
Sytsma, Janine A., Ph.D. (University of Wisconsin-Madison), M.A. (University of Denver), B.A. (Arizona State University), Assistant Professor, 2016.
Thompson, Jody, M.F.A. (University of Arkansas, Fayetteville), B.A. (McNeese State University), Instructor, 2019.
Turner, Aaron, M.F.A (Rutgers State University), B.A (University of Memphis), Research Associate, 2016.
Wilson, Nichole, M.F.A. (Northwestern University), B.F.A. (Temple University), Assistant Professor, 2020.
Wilson-Parrish, Nichelle La Von, M.F.A. (University of North Texas), B.F.A. (University of Arkansas), M.A. (University of North Texas), Instructor, 2013.
Yoon-Ramirez, Injeong, Ph.D. (University of Arizona), Assistant Professor, Endowed Chair in Art Education, 2017.
Young, Chase, M.F.A. (University of Arkansas), B.F.A. (Arizona State University, Tempe), Instructor, 2022.
Young, Rana N., M.F.A. (University of Nebraska), Visiting Assistant Professor, 2019.

## Art Education Courses

ARED 1003. Introduction to Art Education. 3 Hours.
Covers foundational theories in art education, educational psychology, and philosophy. An 18 -hour early field experience includes observation and participation in art classes in public schools and community settings. (Typically offered: Fall and Spring)
ARED 3003. Curriculum Design \& Teaching Practices in Art Education. 3 Hours.
Covers contemporary art education theories and their implication to curriculum design. Students will discuss sociocultural learning theories in relation to the artmaking process. (Typically offered: Fall and Spring)

## ARED 3013. Inclusive Art Pedagogy. 3 Hours.

This course provides future art educators with the current issues and practices necessary for teaching disabled students in an inclusive art class through inverse inclusion (rotating roles as teacher, assistant, student, and observer). It will involve readings, observations, reflections, discussion, and extensive experience applying curriculum and contemporary pedagogy to inclusive art education practice in a community-based setting. (Typically offered: Irregular)

## ARED 3013H. Honors Inclusive Art Pedagogy. 3 Hours.

Provides future art educators with the current issues and practices necessary for teaching art to students with disabilities through inverse inclusion and rotating roles as teacher, assistant, student, and observer. Focuses on contemporary pedagogy to art classroom inclusion practice in a community-based setting with service learning. Prerequisite: Honors standing. (Typically offered: Irregular)
This course is equivalent to ARED 3013.
ARED 3103. Diversity Theory \& Pedagogy. 3 Hours.
Investigates various issues of diversity and equity in relation to art and education. It discusses the application of the theories of diversity and equity into teaching, community organizing, activism, and art practices. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with AAST 3103.
ARED 4003. Community Art. 3 Hours.
Covers community-based art theories, classroom learning theories, and instructional strategies. It is also a teaching practicum course for community outreach; thus, students will design curriculum, implement lesson plans, and organize a final exhibition. Includes at least 24 hours of community teaching experience.
Prerequisite: ARED 3003. (Typically offered: Spring)

## ARED 4003H. Honors Community Art. 3 Hours.

Covers community-based art theories, classroom learning theories, and instructional strategies. It is also a teaching practicum course for community outreach; thus, students will design curriculum, implement lesson plans, and organize a final exhibition. Includes at least 24 hours of community teaching experience. Prerequisite: ARED 3003 and honors standing. (Typically offered: Spring) This course is equivalent to ARED 4003.

## ARED 4633. Individual Research in Art Education. 3 Hours.

Independent study in specific areas of art education. Prerequisite: 6 hours of art education. (Typically offered: Fall and Spring)

ARED 476V. Student Teaching in Art. 6-12 Hour.
A minimum of 6 weeks will be spent in an off-campus school. During this time the student teacher will have an opportunity under supervision to observe, to teach and participate in other activities involving the school and community. Successful completion of a criminal background check required before student can begin student teaching. Prerequisite: ARTBFA major. (Typically offered: Fall and Spring)

ARED 4773. Professional Development in Art Education. 3 Hours.
Students will reflect on their art education experiences and the roles of art educators in various educational settings. This capstone course prepares students for their professional careers in K-12 schools and community settings through journaling, discussions, and teaching portfolio review. (Typically offered: Fall and Spring)
ARED 486V. Internship in Art Education. 1-3 Hour.
Offers credit for practical experience gained through internships in community-based art education including museums and/or other organizations. A report is required from the intern and field supervisor on significant accomplishments and/or progress. Prerequisite: ARED 1003. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

ARED 486VH. Honors Internship in Art Education. 1-3 Hour.
Offers credit for practical experience gained through internships in community-based art education including museums and/or other organizations. A report is required from the intern and field supervisor on significant accomplishments and/or progress. Prerequisite: ARED 1003 and honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is equivalent to ARED 486 V .
ARED 490VH. Honors Thesis in Art Education. 1-6 Hour.
Special problems in Art Education. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

ARED 4953. Special Topics in Art Education. 3 Hours.
Art education topics not included in regularly offered courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## ARED 4953H. Honors Special Topics in Art Education. 3 Hours.

Art education topics not included in regularly offered courses. Pre- or Corequisite: ARED 3613. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to ARED 4953.

## Art History Courses

ARHS 1003. Basic Course in the Arts: Art Lecture (ACTS Equivalency = ARTA 1003). 3 Hours.

A general introduction to the visual arts. Lectures on theory and criticism, demonstrations, films, and slides. Three hours a week plus attendance at specified programs and exhibits. May not be presented toward satisfaction of the B.A. fine arts requirement by art majors. (Typically offered: Fall, Spring and Summer)

ARHS 1003H. Honors Basic Course in the Arts: Art Lecture. 3 Hours.
A general introduction to the visual arts. Lectures on theory and criticism, demonstrations, films, slides. Three hours a week plus attendance at specified programs and exhibits. May not be presented toward satisfaction of the B.A. fine arts requirement by art majors. (Typically offered: Irregular)
This course is equivalent to ARHS 1003.
ARHS 2913. Art History Survey I (ACTS Equivalency = ARTA 2003). 3 Hours. Survey of art works from Stone Age through Medieval. Completion of ARHS 2913 and ARHS 2923 satisfies the content covered in ARHS 1003 for fulfillment of the fine arts university/state core. (Typically offered: Fall and Spring)

ARHS 2923. Art History Survey II (ACTS Equivalency = ARTA 2103). 3 Hours.
Survey of art works from Renaissance to the present. Completion of ARHS 2913 and ARHS 2923 satisfies the content covered in ARHS 1003 for fulfillment of the fine arts university/state core. (Typically offered: Fall and Spring)

## ARHS 3923H. Honors Colloquium. 3 Hours.

Covers a special topic or issue. Offered as a part of the honors program. Prerequisite: honors candidacy (not restricted to candidacy in art). (Typically offered: Irregular)

## ARHS 4013. Case Studies in Art History. 3 Hours.

Provides in-depth studies of selected artists, themes, or specific groups of art works. Only offered during intersession. Prerequisite: 6 hours of ARHS courses. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## ARHS 4013H. Honors Case Studies in Art History. 3 Hours.

Provides in-depth studies of selected artists, themes, or specific groups of art works. Only offered during intersession. Prerequisite: 6 hours of ARHS courses and honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to ARHS 4013.

## ARHS 4413. Greek Art and Archaeology. 3 Hours.

Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.) from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. Prerequisite: ARHS 2913. (Typically offered: Spring and Summer Odd Years)
This course is cross-listed with CLST 4413.

## ARHS 4413H. Honors Greek Art and Archaeology. 3 Hours.

Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.)
from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. Prerequisite: ARHS 2913 and honors standing. (Typically offered: Spring and Summer Odd Years)
This course is cross-listed with CLST 4413, ARHS 4413.
ARHS 4423. Roman Art and Archaeology. 3 Hours.
Roman Art and Archaeology focuses on how visual and material culture shaped and were shaped by Roman society (religion, politics, economy, gender, ethnicity, etc.) from the Iron Age through the Late Antique period. We encounter famous masterpieces, but also the material remains of everyday Romans in civic and domestic spaces. Prerequisite: ARHS 2913. (Typically offered: Spring and Summer Even Years)
This course is cross-listed with CLST 4423.

## ARHS 4423H. Honors Roman Art and Archaeology. 3 Hours.

Roman Art and Archaeology focuses on how visual and material culture shaped and were shaped by Roman society (religion, politics, economy, gender, ethnicity, etc.) from the Iron Age through the Late Antique period. We encounter famous masterpieces, but also the material remains of everyday Romans in civic and domestic spaces. Prerequisite: ARHS 2913 and honors standing. (Typically offered: Spring and Summer Even Years)
This course is cross-listed with CLST 4423, ARHS 4423.
ARHS 451V. Internship in Art History. 1-3 Hour.
Credit for practical experience gained through an internship in art history. Report required from intern and field supervisor on significant accomplishments and/or progress. Prerequisite: 9 hours of ARHS courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## ARHS 4563. Pre-Columbian Art. 3 Hours.

An introduction to pre-Columbian art from Mexico (3000 BC- 1521 AD) through a survey of works of art from different media: sculpture, architecture, and mural painting. Topics examined include: sacred images, political uses of sculpture, architecture and cosmogony, as well as the relationship between the material and content. (Typically offered: Irregular)

## ARHS 4563H. Honors Pre-Columbian Art. 3 Hours.

An introduction to pre-Columbian art from Mexico (3000 BC- 1521 AD) through a survey of works of art from different media: sculpture, architecture, and mural painting. Topics examined include: sacred images, political uses of sculpture, architecture and cosmogony, as well as the relationship between the material and content. (Typically offered: Irregular)
This course is equivalent to ARHS 4563.

## ARHS 4573. Artists of New Spain. 3 Hours.

An overview of colonial art in colonial New Spain. Focused on native agency, social function of art, and cross-cultural communication. Topics include indigenous materials and techniques, the use of images in legal contexts, and ritual liturgy. Some consideration will be given to artworks from the viceroyalty of Peru. (Typically offered: Irregular)

## ARHS 4573H. Honors Artists of New Spain. 3 Hours.

An overview of colonial art in colonial New Spain. Focused on native agency, social function of art, and cross-cultural communication. Topics include indigenous materials and techniques, the use of images in legal contexts, and ritual liturgy. Some consideration will be given to artworks from the viceroyalty of Peru. (Typically offered: Irregular)
This course is equivalent to ARHS 4573.

## ARHS 4613. African Art and Society. 3 Hours.

Situates the artistic production of modern Africa (1800-present) within a sociocultural framework, taking into consideration the role of the artist, the methods of production, the relationship between form and function, and the impact of geopolitical shifts (including intercontinental trade, colonialization, and globalization) on the artistic practice. Prerequisite: ARHS 2923. (Typically offered: Irregular)

## ARHS 4613H. Honors African Art and Society. 3 Hours.

Situates the artistic production of modern Africa (1800-present) within a sociocultural framework, taking into consideration the role of the artist, the methods of production, the relationship between form and function, and the impact of geopolitical shifts (including intercontinental trade, colonialization, and globalization) on the artistic practice. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular)
This course is equivalent to ARHS 4613.
ARHS 4623. African American Art History. 3 Hours.
Surveys African American art from the seventeenth century to the present. It begins with a discussion of the transatlantic slave trade and it examines art produced in what Pratt terms the "contact zones." It then follows developments in African American art from the Antebellum Period to the present. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is cross-listed with AAST 4623.

## ARHS 4623H. Honors African American Art History. 3 Hours.

Surveys African American art from the seventeenth century to the present. It begins with a discussion of the transatlantic slave trade and it examines art produced in what Pratt terms the "contact zones." It then follows developments in African American art from the Antebellum Period to the present. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular)
This course is cross-listed with ARHS 4623, AAST 4623.

## ARHS 4633. Contemporary African Art. 3 Hours.

Serves as a forum for the study of contemporary African art. It situates African art from the 1980s to the present within a historic context, addressing the impact of geopolitical ruptures on artistic practices, and it examines how the work operates across different intellectual, political, and geographical spheres. Prerequisite: ARHS 2923. (Typically offered: Irregular)

## ARHS 4633H. Honors Contemporary African Art. 3 Hours.

Serves as a forum for the study of contemporary African art. It situates African art from the 1980s to the present within a historic context, addressing the impact of geopolitical ruptures on artistic practices, and it examines how the work operates across different intellectual, political, and geographical spheres. Prerequisite:
ARHS 2923 and honors standing. (Typically offered: Irregular)
This course is equivalent to ARHS 4633.

## ARHS 4733. Saint Peter's and the Vatican. 3 Hours.

Examines art and the architectural history of St. Peter's Basilica in Rome from antiquity to present. Emphasis on the Renaissance/Baroque church and its early Christian predecessor. Students consider the impact of devotional practices and papal politics on the church, the Vatican Palace, and its renown artworks including the Sistine ceiling. Prerequisite: ARHS 2913 and ARHS 2923. (Typically offered: Irregular)

## ARHS 4733H. Honors Saint Peter's and the Vatican. 3 Hours.

Examines art and the architectural history of St. Peter's Basilica in Rome from antiquity to present. Emphasis on the Renaissance/Baroque church and its early Christian predecessor. Students consider the impact of devotional practices and papal politics on the church, the Vatican Palace, and its renown artworks including the Sistine ceiling. Prerequisite: ARHS 2913 and ARHS 2923 and honors standing. (Typically offered: Irregular)
This course is equivalent to ARHS 4733.

## ARHS 4753. Renaissance and Baroque Architecture. 3 Hours.

Study of Renaissance and Baroque architecture in Europe and the New World from 1400 to 1700 . With reference to an array of texts, drawings, and edifices, this course charts the evolution of a commanding Western architectural tradition with close attention to social, humanistic, and religious contexts. Prerequisite: ARHS 2923 or ARCH 4433. (Typically offered: Irregular)
ARHS 4763. Seminar in Critical Theory. 3 Hours.
Study of critical theory as it relates to problems in modern and contemporary art. Prerequisite: Nine credit hours of ARHS coursework. (Typically offered: Spring)
ARHS 4763H. Honors Seminar in Critical Theory. 3 Hours.
Study of critical theory as it relates to problems in modern and contemporary art. Prerequisite: Nine credit hours of ARHS coursework. (Typically offered: Spring) This course is equivalent to ARHS 4763.

## ARHS 4773. History of New Media Art. 3 Hours.

Examines the history of "new media" art in relation to larger shifts in technology, philosophy and politics. Beginning in the 19th century, the course explores the development of photography, film, video, performance, sound and digital art through the 20th century. Culminates with an examination of contemporary practice. Prerequisite: ARHS 2923 and 3 hours of 3000 level and above art history coursework. (Typically offered: Irregular)

## ARHS 4773H. Honors History of New Media Art. 3 Hours.

Examines the history of "new media" art in relation to larger shifts in technology, philosophy and politics. Beginning in the 19th century, the course explores the development of photography, film, video, performance, sound and digital art through the 20th century. Culminates with an examination of contemporary practice. Prerequisite: ARHS 2923, honors standing and 3 hours of 3000 level and above art history coursework. (Typically offered: Irregular)
This course is equivalent to ARHS 4773.

## ARHS 4783. Special Topics in Contemporary Art. 3 Hours.

Examines specialized topics within the field of contemporary art, with special attention to cutting-edge issues confronting artists today. Prerequisite: ARHS 2923. (Typically offered: Irregular) May be repeated for degree credit.
ARHS 4783H. Honors Special Topics in Contemporary Art. 3 Hours.
Examines specialized topics within the field of contemporary art, with special attention to cutting-edge issues confronting artists today. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular) May be repeated for degree credit. This course is equivalent to ARHS 4783.

ARHS 4793. Making the Museum: History, Theory and Practice. 3 Hours. Presents a broad overview of the institutional history and the contemporary professional practice of the museum world. Features numerous visiting lectures from a working professionals from the local area and nationwide institutions. Prerequisite: Any 3 credit hour, 3000 level or higher art history course. (Typically offered: Irregular)
ARHS 4813. The History of Photography. 3 Hours.
Survey of photography from 1685 to present. (Typically offered: Irregular)

## ARHS 4823. History of Graphic Design. 3 Hours.

Survey of graphic design history from 1850 to the present. Prerequisite: ARHS 2923. (Typically offered: Spring)

ARHS 4823H. Honors History of Graphic Design. 3 Hours.
Survey of graphic design history from 1850 to the present. Prerequisite: Honors standing and ARHS 2923. (Typically offered: Spring)
This course is equivalent to ARHS 4823.
ARHS 4833. Ancient Art. 3 Hours.
Study of selections from the visual arts of Mesopotamia, Egypt, Greece, or Rome. Prerequisite: ARHS 2913. (Typically offered: Irregular)

## ARHS 4843. Medieval Art. 3 Hours.

Study of Early Christian, Byzantine, Early Medieval, Romanesque, and Gothic styles. Prerequisite: ARHS 2913. (Typically offered: Irregular)

ARHS 4843H. Honors Medieval Art. 3 Hours.
Study of Early Christian, Byzantine, Early Medieval, Romanesque, and Gothic styles. Prerequisite: ARHS 2913. (Typically offered: Irregular)
This course is equivalent to ARHS 4843.
ARHS 4853. Italian Renaissance Art. 3 Hours.
Study of Proto-Renaissance, Early, High Renaissance, and Mannerist styles in Italy. Prerequisite: ARHS 2923. (Typically offered: Irregular)

ARHS 4853H. Honors Italian Renaissance Art. 3 Hours.
Study of Proto-Renaissance, Early, High Renaissance, and Mannerist styles in Italy. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is equivalent to ARHS 4853.
ARHS 4863. Northern Renaissance Art. 3 Hours.
Study of Late Gothic and Renaissance styles in the Netherlands, Germany, and France. Prerequisite: ARHS 2923. (Typically offered: Irregular)
ARHS 4863H. Honors Northern Renaissance Art. 3 Hours.
Study of Late Gothic and Renaissance styles in the Netherlands, Germany, and
France. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is equivalent to ARHS 4863.
ARHS 4873. Baroque Art. 3 Hours.
Study of art styles of the 17th century, primarily in Italy, Spain, France, Flanders, and the Netherlands. Prerequisite: ARHS 2923. (Typically offered: Irregular)

ARHS 4873H. Honors Baroque Art. 3 Hours.
Study of art styles of the 17th century, primarily in Italy, Spain, France, Flanders, and the Netherlands. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is equivalent to ARHS 4873.
ARHS 4883. 18th and 19th Century European Art. 3 Hours.
Study of eighteenth- and nineteenth-century art and architecture in Europe.
Prerequisite: ARHS 2923. (Typically offered: Irregular)
ARHS 4893. 20th Century European Art. 3 Hours.
Study of the major styles and movements of the century, including Cubism, Fauvism, German Expressionism, and Surrealism. Prerequisite: ARHS 2923. (Typically offered: Irregular)
ARHS 490VH. Honors Thesis in Art History. 1-6 Hour.
Special problems in art history. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

## ARHS 4913. American Art to 1860. 3 Hours.

The visual arts in the United States from Colonial times through 1860. Prerequisite: ARHS 2923. (Typically offered: Irregular)
ARHS 4913H. Honors American Art to 1860. 3 Hours.
The visual arts in the United States from Colonial times through 1860. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is equivalent to ARHS 4913.
ARHS 4923. American Art 1860-1960. 3 Hours.
The visual arts in the United States from the onset of the American Civil War through the Cold War Era. Prerequisite: ARHS 2923. (Typically offered: Irregular)

## ARHS 4923H. Honors American Art 1860-1960. 3 Hours.

The visual arts in the United States from the onset of the American Civil War through the Cold War Era. Prerequisite: ARHS 2923. (Typically offered: Irregular) This course is equivalent to ARHS 4923.

## ARHS 4933. Contemporary Art. 3 Hours.

Study of styles and major trends in the visual arts since 1960. Prerequisite: ARHS 2923. (Typically offered: Fall)

## ARHS 4933H. Honors Contemporary Art. 3 Hours.

Study of styles and major trends in the visual arts since 1960. Prerequisite:
ARHS 2923 and ARHS 4923. (Typically offered: Fall)
This course is equivalent to ARHS 4933.

## ARHS 4953. Art Museum Studies. 3 Hours.

A survey of the history and function of the art museum and an introduction to museum work. Investigation of collections and collections management, conservation, exhibitions, education and public programs, museum management, and contemporary issues which effect the museum profession. Prerequisite: ARHS 2913 and ARHS 2923, or graduate Art MFA standing. (Typically offered: Irregular)

ARHS 4963. Individual Research in Art History. 3 Hours.
Independent study in specific areas of art history and criticism. Prerequisite: 12 hours of Art History and permission of instructor. (Typically offered: Fall and Spring)

ARHS 4973. Seminar in Art History. 3 Hours.
Special studies of periods and styles of art. Prerequisite: 9 hours of Art History. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ARHS 4983. Special Topics in Art History. 3 Hours.
Subject matter not covered in regularly offered courses, and relating to the history of art before the eighteenth century. May be repeated for different topics. Prerequisite: ARHS 2913 or ARHS 2923. (Typically offered: Irregular) May be repeated for degree credit.

## ARHS 4983H. Honors Special Topics in Art History. 3 Hours.

Subject matter not covered in regularly offered courses, and relating to the history of art before the eighteenth century. May be repeated for different topics. Prerequisite: ARHS 2913 or ARHS 2923. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to ARHS 4983.

## ARHS 4993. Special Topics in Modern Art. 3 Hours.

Subject matter not covered in regularly offered courses, and relating to the history of art from the nineteenth century to the present. May be repeated for different topics. Prerequisite: ARHS 2923. (Typically offered: Irregular) May be repeated for degree credit.

## ARHS 4993H. Honors Special Topics in Modern Art. 3 Hours.

Subject matter not covered in regularly offered courses, and relating to the history of art from the nineteenth century to the present. May be repeated for different topics. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to ARHS 4993.

## Art Courses

ARTS 1013. Drawing for Non-majors: Observation. 3 Hours.
Designed for non-studio majors, this course investigates the complexities of drawing from direct observation. Through demonstrations, guided working time, and critiques, students will refine their own ability to translate the observed world into 2-dimensional drawn forms. Knowledge of historical and contemporary artists will compliment studio production. (Typically offered: Summer)

ARTS 1023. Drawing for Non-majors: Experimental Methods. 3 Hours. Investigates drawing as a method for creative thinking and experimental imagemaking. Introduction to a wide range of materials and processes. Content includes visual design principles, creative ideation, and related artists who challenge the role of drawing. (Typically offered: Summer)

## ARTS 1313. Two-Dimensional Design. 3 Hours.

Studio problems in the use of line, shape, texture, value, and color and their relationships. (Typically offered: Fall and Spring)

## ARTS 1323. Three-Dimensional Design. 3 Hours.

Studio problems with the elements of three-dimensional design: structure, space, form, surface, and their relationship. (Typically offered: Fall and Spring)

## ARTS 1803. Photography for Non-Majors. 3 Hours.

Addresses photography's currency within visual culture by investigating its relationship to both society and art, considering its evolution as an art form. Using a variety of tools and techniques, projects will emphasize composition, digital manipulation, and the role of intention in creating art. (Typically offered: Fall and Spring)

## ARTS 1919C. Studio Foundation I. 9 Hours.

Intensive, studio-format coursework in a variety of two-dimensional, threedimensional, and time-based media provides an introduction to fundamentals of art and design with emphasis on components of the creative process; research and critical thinking; investigation of materials; and instruction in software and fabrication techniques. 9 credit hours. Corequisite: Drill component. (Typically offered: Fall and Spring)

## ARTS 1929C. Studio Foundation II. 9 Hours.

Continuation of Studio Foundation I. Intensive intermediate studio projects in a variety of two-dimensional, three-dimensional, and time-based mediums; instruction in software and fabrication techniques; and the introduction of professional practices, including the assemblage and maintenance of a foundational portfolio; required attendance at weekly seminar. Corequisite: Drill component. Prerequisite: ARTS 1919C (Typically offered: Fall and Spring)

ARTS 3003. Drawing I: Elements. 3 Hours.
This course explores the language of drawing and its creative application. Traditional materials and methods are complemented with implicit challenges to think expansively about drawing's potential. Investigations enable each individual to learn to see with acuity and develop fine motor skills to create meaningful and accomplished drawings in different forms. Prerequisite: ARTS 1919C and ARTS 1929C; or ARTS 1013 and instructor consent. (Typically offered: Fall and Spring)

ARTS 3013. Figure Drawing I. 3 Hours.
Investigation of the human form through drawing, with special emphasis on gestural modes of working. Careful analysis of human anatomy, including internal and externally visible structures, position and movement of joints, as well as anatomical proportions and their variations among different individuals. Prerequisite: ARTS 3003 or ARTS 3103. (Typically offered: Spring)

ARTS 3023. Drawing II: Invented Images. 3 Hours.
This course investigates drawing strategies for constructing images from the starting point of imagination and invention as a means to create a body of personalized work. Special emphasis is given to the process of generating and organizing images through a wide range of drawing media, collage, color, and digital tools. Prerequisite: ARTS 3003 or GDES 2313. (Typically offered: Spring)

## ARTS 3033. Drawing II: Perceptual Studio. 3 Hours.

This course investigates drawing strategies for generating images derived from direct perceptual experience in order to create a body of personalized work. Emphasis is placed on methods for translating perceptual experience into believable and complex drawn forms. Investigations explore on-site location drawing, selfdesigned studio environments, and the use of color. Prerequisite: ARTS 3003 or GDES 2313. (Typically offered: Fall)

## ARTS 3043. Illustration: Communicating With Drawing. 3 Hours.

How to create images that carry specific, unambiguous meanings - to speak with pictures. Projects will explore various modes of visual communication and relationships to texts, including narrative, editorial and sequential illustrations. Prerequisite: ARTS 3023 or ARTS 3033 or ARTS 3403 or GDES 2313 or instructor consent. (Typically offered: Irregular)

## ARTS 3053. Drawing in the Expanded Field. 3 Hours.

A philosophical examination of the discipline of drawing through experimental works. Initial projects will question the essential aspects of drawing-ness, pushing beyond the typical materials and processes to make drawings with unusual properties. In the second half of the course, students will take on a sustained individual exploration.
Prerequisite: ARTS 3023 or ARTS 3033 or ARTS 3503 or ARTS 3813 or ARTS 3203 or ARTS 3213 or instructor consent. (Typically offered: Irregular)

## ARTS 3103. Painting I. 3 Hours.

An introduction to oil painting, focusing on painting from direct observation. Topics to be covered include: materials, palette, understanding perceptual color and color theory, and development of the painting through use of layers, value, mark-making, composition, light, and space. Prerequisite: ARTS 3013 or (ARTS 1919C and ARTS 1929C). (Typically offered: Fall and Spring)

ARTS 3123. Painting: Water Media. 3 Hours.
Introduction to materials and techniques of watercolor and acrylic painting. Form, composition, and content to be studied through observation and imagination. Traditional techniques as well as experimentation and personal expression are to be explored. Prerequisite: ARTS 3103 or ARTS 3003. (Typically offered: Irregular)

## ARTS 3133. Figure Painting. 3 Hours.

Introduction to representational and interpretive figure painting and to contemporary issues in figurative painting. The model as well as other visual sources will be used as a basis for observation, interpretation and invention. Prerequisite: ARTS 3013, ARTS 3103. (Typically offered: Irregular)

## ARTS 3143. Painting \& Digital Tools. 3 Hours.

Introduces students to hybrid working methods, between analog painting and digital processes, to produce innovative personalized imagery. Digital tools such as image software, scanners, printers, plotters and laser cutters will extend the possibilities of painting through generating source material, creating cut forms, custom stencils, manipulating and reconfiguring imagery. Prerequisite: ARTS 3103. (Typically offered: Irregular)

## ARTS 3153. Painting Perception Into Abstraction. 3 Hours.

Investigation of the abstraction of visual phenomena. Various starting points and approaches will be studied. Emphasis on the analysis of form, the creation of pictorial structure, and the conceptual basis of perceptual abstraction. Prerequisite: ARTS 3103. (Typically offered: Irregular)

## ARTS 3163. Abstract Painting. 3 Hours.

An introduction to the material, formal, and conceptual aspects of abstract painting. Projects will explore a variety of starting points for the invention of form in painting. Examines the construction of meaning in modern and contemporary abstract painting through studio work, discussion, writing assignments and lectures. Prerequisite: ARTS 3103. (Typically offered: Irregular)
ARTS 3173. Contemporary Representational Painting. 3 Hours.
Contemporary approaches to the use of imagery in painting. Projects emphasize the systematic alteration of color, form and space through strategies of reduction, omission, distortion and compositing. Prerequisite: ARTS 3103. (Typically offered: Irregular)

## ARTS 3183. Landscape Painting. 3 Hours.

Exploration of perceptual and conceptual approaches to painting the landscape. Both traditional and experimental techniques of oil painting will be studied. Includes outdoor on-site painting. Prerequisite: ARTS 3103. (Typically offered: Irregular)

ARTS 3203. Fundamentals of Modeling, Mold Making \& Casting. 3 Hours.
An introduction to fundamental additive and subtractive sculpture techniques and methods of seeing and working that give expression to material form. Beginning techniques in modeling, carving, mold making, and basic casting are demonstrated. Lectures, readings, and critiques will develop student awareness of traditional building techniques which inform contemporary sculpture practices. Prerequisite: ARTS 1323; or ARTS 1919C and ARTS 1929C. (Typically offered: Spring and Summer)

## ARTS 3213. Construction Methods I. 3 Hours.

A focus on material sensitivity through thoughtful and skillful additive approaches. Woodworking and metalworking are introduced as methods to examine structural and spatial possibilities. Through examining and questioning the interplay of form, material, technique, and content, students will develop their knowledge of traditional fabrication processes, which inform contemporary sculpture. Prerequisite: ARTS 1323; or ARTS 1919C and ARTS 1929C. (Typically offered: Fall)

## ARTS 3223. Issues in Contemporary Sculpture. 3 Hours.

An experimental lab focused on critical issues in contemporary sculpture. Students will be challenged to dissect their process of making, to question the nature of sculpture and art-making in the 21st century, and the context in which art is created, shown, and distributed. Prerequisite: ARTS 1323 or (ARTS 1919C and ARTS 1929C). (Typically offered: Fall and Summer)
ARTS 3293. Seminar in Sculpture + Experimental Media. 3 Hours.
Introduction to techniques and theories that foster new experimental forms of artistic practice and to historical and contemporary interplay between methodologies including: object making and contextual design, material history and environmental sustainability, the moving image, sound, performance, mechatronics/electronics, interactivity, digital fabrication, social practice, speculative design, and interventions in public space. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

## ARTS 3403. Printmaking: Introduction. 3 Hours.

Introduction to the technical, formal, conceptual, and historical aspects of printmaking through methods of relief, intaglio (etching), monoprint, serigraphic (screenprinting), and lithographic printing techniques. Prerequisite: ARTS 1919C and ARTS 1929C; or ARCH 1025; or LARC 1325; or IARD 1045. (Typically offered: Fall, Spring and Summer)

## ARTS 3423. Printmaking: The Collaborative Print. 3 Hours.

Collaborative exploration in the technical, formal, conceptual, and historical aspects of lithographic printmaking processes including wet and dry media on stone and plate, photo processes, and various inking methods. Prerequisite: ARTS 3403 or ARTS 3443; or ARCH 1025; or IARD 1045; or LARC 1325. (Typically offered: Spring)

## ARTS 3433. Printmaking: Painterly Prints. 3 Hours.

Exploration in the technical, formal, conceptual, and historical aspects of monoprint and relief printmaking through traditional and current methods of woodcut, linoleum, CNC routing, digital technologies, and other methods to create small editions and unique, singular works on paper. Prerequisite: ARTS 3403; or ARCH 1025; or IARD 1045; or LARC 1325. (Typically offered: Fall)

## ARTS 3443. Printmaking: Screenprinting. 3 Hours.

Introduction to serigraphic techniques, including cut stencils, photosensitive stencils, resist methods, additive and reductive printing, and other processes. Prerequisite: ARTS 1919C and ARTS 1929C; or ARTS 3403; or ARCH 1025; or IARD 1045; or LARC 1325. (Typically offered: Fall, Spring and Summer)

## ARTS 3463. Printmaking: Digital Inquiries. 3 Hours.

Exploration of the technical, formal, and conceptual aspects of both traditional printmaking techniques and contemporary digital media and their application to contemporary art and visual culture. Prerequisite: ARTS 3403 or ARTS 3443; or ARCH 1025; or LARC 1325; or IARD 1045. (Typically offered: Spring)

## ARTS 3473. Printmaking: Publishing Power. 3 Hours.

Exploration in the technical, formal, conceptual, and historical aspects of book arts and contemporary publishing practices through various book forms, book construction, binding, design, content, letterpress printing, risograph printing, and conceptual considerations. Prerequisite: ARTS 3403 or ARTS 3443; or ARCH 1025; or IARD 1045; or LARC 1325. (Typically offered: Fall)

## ARTS 3503. Ceramics: Handbuilding I. 3 Hours.

this introductory course investigates the techniques, materials, and themes common to hand-built ceramincs. Students will also be introduced to ceramic studio processes, including clay and glaze mixing, low temperature gas and electric firing, and studio safety procedures. Prerequisite: ARTS 1013 and ARTS 1323; or ARTS 1919C and ARTS 1929C. (Typically offered: Fall and Summer)

## ARTS 3523. Ceramics: Wheelthrowing I. 3 Hours.

This introductory course investigates the techniques, materials, and themes common in wheel-thrown ceramics. Students will also be introduced to ceramic studio processes, including clay and glaze mixing, high temperature gas and electric firing, and studio safety procedures. Prerequisite: ARTS 1013 and ARTS 1323; or ARTS 1919C and ARTS 1929C. (Typically offered: Spring and Summer)

## ARTS 3533. Ceramics: Wheelthrowing II. 3 Hours.

This concept-driven intermediate-level course focuses on expanding the students' skills and knowledge of wheel-thrown and hand-built forms. Additional emphasis will be placed on clay and glaze testing, and understanding the processes of firing in electric, gas, salt/soda, and wood-firing kilns. Prerequisite: ARTS 3523. (Typically offered: Irregular)

## ARTS 3543. Ceramics: Slip-Casting. 3 Hours.

This concept-driven intermediate-level course focuses on the techniques and approaches common to ceramic slip-casting. Plaster mold-making, model development and preparation, slip mixing, and slip-casting are emphasized. Students will utilize low and high temperature gas and electric firings. Prerequisite: ARTS 3503. (Typically offered: Spring)

## ARTS 3723. Experiments in Moving Image I. 3 Hours.

An introduction to experimental video art, providing a theoretical and practical foundation for creating video for installation, performance or screen, set within a context of historical and contemporary video art and experimental film. Students will complete assignments creating new, original moving image works. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall and Spring)

## ARTS 3733. Experiments in Sound. 3 Hours.

An introduction to experimental sound art, providing a theoretical and practical foundation for creating sound for installation, performance or composition, set within a context of historical and contemporary sound art and electroacoustic composing. Students will complete assignments creating new, original sound works. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall)

## ARTS 3803. Photo I: Darkroom. 3 Hours.

Photography I: Darkroom is an introduction to the basics of camera operation and exposure, analog black and white film and print processing, and photographic technique and theory. An emphasis on how to communicate through photographs is pursued in assignments, critiques, slide lectures, and demonstrations. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall and Spring)

## ARTS 3813. Photo I: Digital. 3 Hours.

Photo I: Digital starts with and expands upon the basics of digital SLR photography, editing in Adobe Lightroom, basic digital file management, and printing. This includes an introduction to the applications of composition, light, and color in photography. The course also delves into image interpretation and photographic seeing. There will be emphasis placed on communicating ideas effectively through photography as well as the ability to speak about photography analytically, formally, and conceptually. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall and Spring)

ARTS 3823. Alternative Photographic Methods. 3 Hours.
Alternative Photographic Methods focuses on the study and practice of alternative and historic photographic processes with a special interest in how materiality influences the content of a photograph. A heavy influence is placed on experimentation as the course explores the hybridization of analog chemical processes with digital technology and contemporary content. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

## ARTS 3833. Documentary Photography. 3 Hours.

This course introduces students to a variety of methods used in the area of documentary photography in order to build the conceptual and technical skills necessary to create extended projects that focus on documenting and visually exploring subjects in an in-depth manner. Discussion of Photography's tricky relationship with objectivity is explored throughout the semester. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

## ARTS 3843. Studio Light. 3 Hours.

Explores the technical, creative, and professional possibilities within making photographs using controlled light in both the studio setting and on location. Emphasizes how the studio setting has been used by photographers throughout history as well as its vital role in contemporary photography. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

## ARTS 3853. The Photobook. 3 Hours.

This course is based on the both the historic and contemporary relevance of the photobook as an art object. Students will learn about all aspects of producing a photobook from generating content, designing a structure, case-binding methods, fine art inkjet printing, and book construction. Special attention will be paid to sequencing photographs to convey conceptual thought and critique of those ideas. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

## ARTS 3903. Arts Entrepreneurship. 3 Hours.

Explores vehicles for socially conscious, arts-based, entrepreneurial action to gain an understanding of the innovative role that the creative process plays. With a bias toward action and collaboration, students will explore creative content, viability, and social, environmental, and cultural accountability. (Typically offered: Fall)

## ARTS 3913. Social Justice and the Arts. 3 Hours.

Takes a critical look at historic and contemporary models of collaborative and interdisciplinary practices in the visual arts. Examines art as a catalyst for community impact, develops strategies for addressing the needs and goals of a specific partner, and implements support for those strategies. Service learning course. (Typically offered: Spring)

## ARTS 4003. Drawing Projects. 3 Hours.

Individual studio projects in Drawing. Each student will propose a project to pursue over the course of the semester. Prerequisite: (ARTS 3023 and ARTS 3033) or ARTS 3043 or ARTS 3053 or Studio Art BFA concentration in drawing or by Instructor permission. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

## ARTS 404V. Special Problems in Drawing. 1-6 Hour.

Individual projects in drawing arranged with the instructor. Prerequisite: ARTS 3003. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## ARTS 4153. Topics in Advanced Painting. 3 Hours.

Topics in advanced and experimental painting. Prerequisite: 6 hours of painting. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

## ARTS 417V. Special Problems in Painting. 1-6 Hour.

Individual technique and subject matter projects to be arranged with the instructor. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## ARTS 4183. Contemporary Issues in Painting. 3 Hours.

Examination of concepts and themes relevant to the contemporary practice of painting, accompanied by the production of an individually determined body of work. Emphasis on studio work supplemented by research, critique, reading and writing. Pre- or Corequisite: Three hours of painting from ARTS 3123, ARTS 3133, ARTS 3153, ARTS 3163, ARTS 3173, ARTS 3183, or ARTS 4153. Prerequisite: ARTS 3103. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

## ARTS 4193. Advanced Painting. 3 Hours.

Intensive course for those art majors concentrating in painting. Extended, individually determined projects will emphasize production of a well researched, conceptually grounded and cohesive body of work. Supplemented by reading, writing and discussion of contemporary issues in painting. Pre- or Corequisite: Three hours of painting from ARTS 3123, ARTS 3133, ARTS 3153, ARTS 3163, ARTS 3173, ARTS 3183, or ARTS 4153. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

## ARTS 4203. Modeling, Mold Making, \& Casting II. 3 Hours.

Merging historical methodology and advanced technology from lost-wax metal casting to digital fabrication, a continuation of additive and subtractive techniques in modeling, carving, moldmaking, and casting. Specific problems utilizing various media are preceded by readings, lectures, and demonstrations. Prerequisite: ARTS 3203. (Typically offered: Fall)

## ARTS 4213. Mixed Media \& Spatial Context. 3 Hours.

An exploration in assemblage, installation, environmental art, light, and kinetics as they apply to contemporary sculptural language. Specific problems utilizing various media are preceded by readings, lectures, and demonstrations. Prerequisite: One course from the following: ARTS 3203 or ARTS 3213 or ARTS 3223 or ARTS 3723 or ARTS 3733. (Typically offered: Fall and Spring)

## ARTS 4223. Advanced Sculpture + Experimental Media. 3 Hours.

A directed analysis of form and its relationship to content based on the development of work in students' medium of choice. Students will acquire the technical skills needed to meet personal vision through guidance of the instructor. Research evidenced in work, discussions, and critiques is emphasized. Prerequisite: Two of the following courses: ARTS 4203, ARTS 4213, ARTS 4243, ARTS 4743, ARTS 4753, or ARTS 4783. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

## ARTS 423V. Special Problems in Sculpture. 1-6 Hour.

Individual projects in sculpture with emphasis on materials exploration. Prerequisite: ARTS 4223. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## ARTS 4243. Construction Methods II. 3 Hours.

A deeper investigation into construction techniques to further examine structural and spatial possibilities and question the relationship between traditional and contemporary sculptural materials. Through a more profound and critical analysis of form, material, process, content, and context, construction methodology will be established as a foundation for individual practice. Prerequisite: ARTS 3213. (Typically offered: Spring)

## ARTS 4413. Printmaking: Archives \& Counter-Archives. 3 Hours.

Advanced individual exploration of institutional and non-normative archives, theories, systems, and practices to create a research-informed body of work. Prerequisite: ARTS 3403 and ARTS 3443; plus one of the following: ARTS 3423 or ARTS 3433 or ARTS 3463 or ARTS 3473. (Typically offered: Fall)
ARTS 4423. Printmaking: The Expanded Field in the Expanding Field. 3 Hours. Advanced individual and collaborative exploration of artistic production through publication, events, and happenings. Prerequisite: ARTS 3403 and ARTS 3443; plus one of the following: ARTS 3423 or ARTS 3433 or ARTS 3463 or ARTS 3473 or ARTS 4413. (Typically offered: Spring)

ARTS 4453. Printmaking: Collaborative Publishing Workshop. 3 Hours.
Advanced exploration of the inner workings of the professional publishing workshop environment through the production of a fine art print edition designed in collaboration with a visiting artist. Prerequisite: ARTS 4483 or ARTS 4413 or ARTS 4423. (Typically offered: Fall and Spring)

## ARTS 4483. Printmaking: Advanced Studio. 3 Hours.

Continued advanced study in various printmaking media with emphasis on individual technical research, development of personal imagery, and refinement of skills. Prerequisite: ARTS 3403 and ARTS 3443; plus one of the following: ARTS 3423 or ARTS 3433 or ARTS 3463 or ARTS 3473. (Typically offered: Spring)
ARTS 449V. Special Problems in Prints. 1-6 Hour.
Advanced individual study of one or more printmaking processes with emphasis on individual technical research, development of personal imagery, and refinement of skills. Prerequisite: ARTS 3403. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## ARTS 4503. Intermediate Ceramics. 3 Hours.

Focuses on discovering and developing a personal approach to the creation of ceramic objects. Students will explore and test clay bodies, surface treatments, and firing methods while simultaneously exploring ideas, formats, contexts, and interpretations to their work. Any or all ceramic processes may be used. Pre- or corequisite: ARTS 3503 or ARTS 3523 or ARTS 3543. (Typically offered: Fall)

## ARTS 4513. Technical Ceramics. 3 Hours.

Advanced study of ceramic materials and processes. Clay composition, clay body formulation and analysis, glaze composition and formulation, firing methods (low, mid, and high-temperature gas, electric and atmospheric firings), and kiln design will be covered in depth. Prerequisite: ARTS 4503. (Typically offered: Irregular)
ARTS 4573. Advanced Ceramics. 3 Hours.
This course focuses on the generation and development of ideas and objects to form a cohesive body of work. Students will lead their own explorations, technically and conceptually, while working toward a professional-level standard of output. Any or all ceramic processes may be used. Prerequisite: ARTS 3503 and ARTS 3523 and ARTS 3543 and ARTS 4503. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
ARTS 458V. Special Problems in Ceramics. 1-3 Hour.
Individual projects in ceramic techniques. Prerequisite: ARTS 3503 or ARTS 3523. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## ARTS 4743. Experiments in Moving Image II. 3 Hours.

Further exploration of experimental video art, pushing the theoretical and practical foundation students build in "Experiments in Moving Image I". Expands on creating video for installation, performance or screen, set within a context of historical and contemporary video art and experimental film. Prerequisite: ARTS 1919C, ARTS 1929C and ARTS 3723. (Typically offered: Fall and Spring)

## ARTS 4753. Sound and Space. 3 Hours.

Continued exploration of experimental sound art in order to build a deeper theoretical and practical understanding of creating sound for installation, performance, or composition within a context of historical and contemporary sound art and electroacoustic composing. Prerequisite: ARTS 3733. (Typically offered: Spring)

## ARTS 4783. Critical Issues in Experimental Media Art. 3 Hours.

This course serves as a special topics course for Experimental Media Art. Students will explore a variety of contemporary critical issues and methodologies, all while building a deeper theoretical and practical understanding of creating for the twentyfirst century. Prerequisite: (ARTS 1919C or ARTS 1929C) and (ARTS 3723 or ARTS 3733). (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ARTS 4823. Advanced Digital: The Constructed Image. 3 Hours.
Advanced Digital: The Constructed Image explores processes and concepts related to creating photographs that are staged, manipulated, or constructed in some manner both through digital processing and fabricating images for the camera. Emphasis will be placed on a questioning of photographic truth and how to communicate effectively through a series of photographs. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

## ARTS 4833. Large Format Photography. 3 Hours.

Large Format Photography introduces students to the $4 \times 5$ view camera and the technical processes of larger film formats. Advanced darkroom work and digital process are combined to explore professional printmaking. Projects allow students to explore concepts in depth and relate the large format camera to contemporary photographic practice. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)
ARTS 484V. Special Problems in Photography. 1-6 Hour.
Individual instruction for advanced undergraduates and graduate students. Special projects in photography designated by students in collaboration with faculty. Prerequisite: ARTS 3803 and (ARTS 3813 or ARTS 4823 or ARTS 4833). (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## ARTS 4893. Advanced Projects in Photography. 3 Hours.

Emphasizes diverse aspects of recognizing and fostering individualized creative processes, critical thinking, and problem-solving skills in order to create a sustainable and professional studio practice. Prerequisite: ARTS 3803 and ARTS 3813 and Junior or Senior level standing. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.
ARTS 490VH. Honors Thesis in Studio Art. 1-6 Hour.
Special problems in studio art. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

## ARTS 491V. Internships in Art. 1-6 Hour.

Credit for practical experience gained through internships in studio art, gallery practices and/or art education. Report required from intern and field supervisor on significant accomplishments and/or progress. Prerequisite: Junior standing and art major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## ARTS 4923. Professional Development. 3 Hours.

The creation and presentation of a portfolio of work in the student's area of concentration, accompanied by creation of relevant materials for successful professional practice. Art Education students may choose ARED 476V, Student Teaching, (12 credit hours) as a substitution. Prerequisite: Art majors only. Requires junior, senior or graduate standing. (Typically offered: Fall and Spring)
ARTS 493V. Fine Arts Gallery Internship. 1-3 Hour.
Study all aspects of operating the Fine Arts Gallery. Research and preparation for exhibitions, organize and install exhibits, care of art works, create and distribute publicity, arrange interviews with newspapers, and other media. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## ARTS 495V. Special Topics. 1-6 Hour.

May be offered in a subject not specifically covered by the courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## ARTS 4993. Studio Art BFA Capstone. 3 Hours.

A capstone experience for graduating BFA students across all Studio Art concentrations. Provides intensive mentorship and instruction to prepare students with acute visual literacy and relevant frameworks concerning career paths in contemporary art practice, curation, and education. Prerequisite: Studio Art BFA majors only and senior standing. (Typically offered: Spring)

## Arts and Sciences (ARSC)

Deborah Korth
Assistant Dean of Fulbright College

Old Main 526/CORD 338
479-575-7661
Students may enroll in college and off-campus programs (ARSC) under special circumstances and with the approval of the Assistant Dean of Fulbright College Student Success.

## Courses

ARSC 104V. Special Topics in Student Success. 1-3 Hour.
Empowers students to explore various ARSC topics and programs under the guidance of ARSC faculty and/or advisors to advance student success. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

ARSC 1201. Introduction to Teaching STEM Subjects. 1 Hour. This course provides a preview of what it is like to teach STEM subjects. Engaging activities that model effective teaching practices, discussions of STEM education issues, and optional school observations will help STEM majors clarify interest in teaching as a career or as an additional skill as a STEM professional. (Typically offered: Fall and Spring)
ARSC 1212. Inquiry Approach to Teaching STEM Subjects. 2 Hours.
Along with learning classroom strategies for engaging students and organizing a lesson, student pairs plan and teach three inquiry-based lessons (choice of math, science, or computer science) in a local school classroom, assess student understanding, and reflect on feedback. For STEM majors exploring teaching as an additional career option. (Typically offered: Fall and Spring)
ARSC 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARSC 2003. Second Year Experience. 3 Hours.
Explores the purpose of a college education, the university general education objectives, and the many dimensions of wellness for sophomores who are still discovering their place at the university. Prerequisite: Sophomore standing or instructor consent. (Typically offered: Fall and Spring)

ARSC 2201. College Perspectives for Transfer Students. 1 Hour.
Develops a sense of social belonging and wellness during the transition period by encouraging critical thinking and civil engagement for transfer students. Provides peer-to-peer support and instruction. (Typically offered: Fall and Spring)
ARSC 2600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARSC 3013. Fulbright College Career Connections. 3 Hours.
This course teaches students how to capitalize on their strengths, skills, experience, professional connections, and academic discipline. Key components of this course are guest lectures from on-campus and off-campus professionals, interactive group activities to practice professional skills, and the creation of an online portfolio. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring)
ARSC 310V. Fulbright College Elective Internship. 1-3 Hour.
Available to students completing an internship that aligns with their career goals and/or their area of study. Credit-only course that may be repeated for up to 6 hours of elective degree credit. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
ARSC 3203. Professional ePortfolio. 3 Hours.
Serves as a forum for the development of a professional ePortfolio, showcasing academic and co-curricular accomplishments. Intended for students exploring multiple majors or career opportunities, but can benefit any student. (Typically offered: Fall and Spring)
ARSC 3600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARSC 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

## Asian Studies (AIST)

Ka Zeng
Chair of Studies
428 Old Main
479-575-3356
Asian Studies Website (https://fulbright.uark.edu/area-studies/asianstudies/)

Students may pursue Asian studies as a second major alongside a primary major in Fulbright College. The program also offers a minor in Asian Studies.

The Asian Studies Program draws on the strength of faculty both in the Fulbright College of Arts and Sciences and in other colleges on campus to provide resources and training in Asian languages, cultures, history, politics and economics. The program strives to provide students with a well-rounded education essential for careers in which knowledge of Asia is vital, promote interdisciplinary research on the Pacific region, and serve as a source of knowledge and expertise for the community.

## Requirements for a Combined Major in Asian Studies

Language Competence: Students must complete CHIN 2013 (or equivalent) or JAPN 2013 (or equivalent). Subject to the approval of the Director of Studies, students with language competence in one language (Chinese or Japanese) may receive some elective credit for competence level courses in the other language. Proficiency in other Asian languages may also satisfy this requirement.

In addition to the above language requirement, students must complete 21 credit hours in Asia-related courses, subject to the following conditions:

Colloquium (3-6 hours): Students must complete at least three credit hours in the interdisciplinary colloquium, AIST 4003/AIST 4003H. The AIST Colloquium may be repeated, provided the topic is different.

Electives (15-18 hours): In addition to the above requirements and the requirements for the departmental major, students must complete $15-18$ credit hours of Asia-related courses (AIST-approved electives listed below) subject to the following conditions of distribution:

1. Students must complete 6 credit hours in history (HIST) courses.
2. Students must complete 6 credit hours in social science courses chosen from economics (ECON), political science (PLSC), or sociology (SOCI).
3. Courses must be selected from at least three different departments.
4. A maximum of 9 credit hours may be submitted from a single department.
5. In addition, the following may be applied toward the major:
a. Up to six credit hours in world language courses numbered at the 3000-level or higher (such as CHIN 3003, CHIN 3033, CHIN 3103, or JAPN 3033);
b. Up to 6 credit hours in an approved study-abroad program;
c. Up to 6 credit hours in CHIN 3983 or JAPN 3983 (Special Studies)
d. Other Asia-related courses with approval of the director of Asian Studies

## Approved AIST Electives

AIST 390V Special Topics in Asian Studies1-3

CHIN/AIST 3103 Chinese Culture through Film

| CHIN 4313/ | Culture and Society in China | 3 |
| :--- | :--- | :--- |
| AIST 4323 |  |  |
| ECON 3933 | The Japanese Economic System | 3 |
| ECON 4633 | International Trade | 3 |
| HIST 3523 | Modern China | 3 |
| HIST/AIST 3533 | World War II | 3 |
| HIST/AIST 3633 | Modern Japan | 3 |
| HIST/AIST 4403 | Islam in Asia | 3 |
| JAPN 3003H |  | 3 |
| JAPN 3013H |  | 3 |
| JAPN 4313 | Language and Society of Japan | 3 |
| MUSY 4113 |  | 3 |
| PLSC/AIST 3503 | Governments and Politics of East Asia | 3 |
| PLSC/AIST 4823 | Foreign Policy of East Asia | 3 |
| SOCI/AIST 3273 | Sociology of China |  |

## Requirements for a Minor in Asian Studies

Students may earn a minor in Asian Studies by taking courses in art, anthropology, economics, geography, history, languages, sociology, political science, and literature of Asia. Students must fulfill the language requirement described below and complete 15 hours in Asia-related courses in order to earn the minor.

Language Requirement: Students must complete CHIN 2013 (or equivalent) or JAPN 2013 (or equivalent). At the discretion of the chair of studies, proficiency in other Asian languages may also satisfy this requirement.

Beyond the language requirement, students must complete 15 credit hours of approved courses, including at least three hours in the Asian Studies Colloquium (AIST 4003). The following courses may be taken in fulfillment of the elective requirements:

## Approved AIST Electives

| AIST 390V | Special Topics in Asian Studies | $1-3$ |
| :--- | :--- | ---: |
| CHIN/AIST 3103 | Chinese Culture through Film | 3 |
| CHIN 4313/ | Culture and Society in China | 3 |
| AIST 4323 |  | 3 |
| ECON 3933 | The Japanese Economic System | 3 |
| ECON 4633 | International Trade | 3 |
| HIST 3523 | Modern China | 3 |
| HIST/AIST 3533 | World War II | 3 |
| HIST/AIST 3633 | Modern Japan | 3 |
| HIST/AIST 4403 | Islam in Asia | 3 |
| JAPN 4313 | Language and Society of Japan | 3 |
| MUSY 4113 |  | 3 |
| PLSC/AIST 3503 | Governments and Politics of East Asia | 3 |
| PLSC/AIST 4823 | Foreign Policy of East Asia | 3 |
| SOCI/AIST 3273 | Sociology of China |  |

Students may also apply three hours of credit in an approved studyabroad program in an Asian country and three hours of upper-level Chinese or Japanese toward the minor.

Other courses that include Asia-specific content may be taken for credit toward the secondary major or minor with the approval of the Chair of Asian Studies.

## Minor in East Asian History and Politics

The East Asian history and political science minor is designed to enhance students' understanding of the historical and political development of East Asia, in particular China and Japan. Students must complete 15 hours in courses related to East Asian history and political science in order to earn the minor. The interdisciplinary nature of this degree will allow students to use a variety of courses on East Asia to develop their own B.A. degree and thus prepare for a career related to the region.

## Students must complete 15 hours from the following:

| Required Courses (6 hours) |  |
| :---: | :---: |
| PLSC 3503 | Governments and Politics of East Asia |
| HIST 3523 | Modern China |
| Electives |  |
| Choose any three courses |  |
| AIST 4003 or AIST 40 | Asian Studies Colloquium :Honors Asian Studies Colloquium |
| CHIN 3103 | Chinese Culture through Film |
| CHIN 4313 | Culture and Society in China |
| HIST 4403 | Islam in Asia |
| Students can Japanese lan abroad progr | apply up to 3 hours of upper level Chinese or uage courses and 3 hours in an approved study $m$ toward the minor. |

## Total Hours

15

## Courses

AIST 3103. Chinese Culture through Film. 3 Hours.
Explores Chinese culture through the lens of Chinese films with an emphasis on contemporary communicative culture. Designed to give students analytical insights into Chinese culture, especially how its language, history, philosophy, society, education, customs, family values, and gender roles shape contemporary culture and people's communication. (Typically offered: Fall and Spring)
This course is cross-listed with CHIN 3103.

## AIST 3273. Sociology of China. 3 Hours.

This class offers a sociological account of China, including both its social ethos and the experience of Chinese Americans in the United States. (Typically offered: Fall) This course is cross-listed with SOCI 3273.

AIST 3503. Government and Politics of East Asia. 3 Hours.
Comparative analysis of structures, processes, and problems of the political systems of the Democratic Republic of Vietnam, Japan, and the Peoples Republic of China.
Prerequisite: PLSC 2013. (Typically offered: Fall and Spring)
This course is cross-listed with PLSC 3503.

## AIST 3533. World War II. 3 Hours.

This course explores broad themes such as imperialism, colonialism, nationalism, transnationalism, and racism by placing WWII in the context of the build-up of tensions between China, the Japanese Empire, and the United States starting in the nineteenth century. (Typically offered: Spring)
This course is cross-listed with HIST 3533.
AIST 3633. Modern Japan. 3 Hours.
This course exposes students to the rapid transformations in Japan from the midnineteenth century through to their rise into an important player in global politics. Students will be familiarized with the narrative history of the Japanese home islands as well as the place of Japan in the context of world events and global currents. (Typically offered: Fall)
This course is cross-listed with HIST 3633.

AIST 390V. Special Topics in Asian Studies. 1-3 Hour.
Special topics in Asian Studies. May be repeated for degree credit. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## AIST 4003. Asian Studies Colloquium. 3 Hours.

An interdepartmental colloquium with an annual change of subject, required of students in the Asian studies program. Prerequisite: Sophomore standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

## AIST 4003H. Honors Asian Studies Colloquium. 3 Hours.

An interdepartmental colloquium with an annual change of subject, required of students in the Asian studies program. Prerequisite: Sophomore standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
This course is equivalent to AIST 4003.
AIST 4323. Culture and Society in China. 3 Hours.
Examines contemporary Chinese society and culture through the lens of language and with an emphasis on globalization. (Typically offered: Fall and Spring) This course is cross-listed with CHIN 4313.

## AIST 4403. Islam in Asia. 3 Hours.

This course will introduce students to the history and varieties of Muslim life in East Asia and Southeast Asia during the past 1,200 years. Through a comparative historical approach, it will examine themes of gender, imperialism and nationalism, religious education, pilgrimage, Islamic modernism, and religious extremism. (Typically offered: Fall)
This course is cross-listed with HIST 4403.

## AIST 4823. Foreign Policy of East Asia. 3 Hours.

This course provides an introduction to China's foreign policy at the undergraduate level. Key topics covered include the historical, domestic, and international contexts of Chinese foreign policy, China's relations with key partner countries, security strategies, foreign economic relations, and evolving role in global governance. (Typically offered: Fall)
This course is cross-listed with PLSC 4823.

## Biological Sciences (BISC)

David S. McNabb
Department Chair
601 Science-Engineering Building
479-575-3787
Email: dmcnabb@uark.edu
Michelle Evans-White
Graduate Coordinator
623 Science-Engineering Building
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Email: mevanswh@uark.edu
Department of Biological Sciences Website (http://fulbright.uark.edu/ departments/biology/)

The Department of Biological Sciences offers a supportive training environment across the full spectrum of biology, bridging the disciplines of cell and molecular biology, physiology, development, genetics, molecular systematics, microbiology, neurobiology, ecology, and evolutionary biology. Through course selection both within and outside the department, our students are prepared to enter research and professional training programs (health, secondary education, law, etc.) or enter careers in government and a broad range of businesses that rely on a technologyliterate workforce with analytical and problem-solving skills.

For information on advanced degrees in biology, see the Graduate School Catalog (http://catalog.uark.edu/graduatecatalog/programsofstudy/ biologicalsciencesbisc/).

## University and College Requirements for a Bachelor of Science in Biology

In addition to the Fulbright College of Arts and Sciences graduation requirements (see under Degree Completion Program Policy), the following course requirements must be met.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.
State Minimum Core ..... 35
Mathematics ..... 4MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)Statistics3-4
Choose one statistics (STAT) course from the following:

STAT 2303 Principles of Statistics (ACTS Equivalency = MATH 2103)

STAT 2823 Biostatistics
STAT 3003 Statistical Methods
\& STAT 3001L and Statistics Methods Laboratory
Chemistry
CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)
CHEM 1123 University Chemistry II (ACTS Equivalency = \& CHEM 1121LCHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
CHEM 3603 Organic Chemistry I
\& CHEM 3601Land Organic Chemistry I Laboratory
CHEM 3613 Organic Chemistry II
\& CHEM 3611Land Organic Chemistry II Laboratory
CHEM 3813 Elements of Biochemistry
Physics
8
Choose one two-semester sequence from the following:
PHYS 2013 College Physics I (ACTS Equivalency = PHYS \& PHYS 2011L 2014 Lecture)
and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)
PHYS 2033 College Physics II (ACTS Equivalency = PHYS
\& PHYS 2031L 2024 Lecture)
and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)
-or-
PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034)

PHYS 2074 University Physics II (ACTS Equivalency $=$ PHYS 2044 Lecture)

## Philosophy

PHIL 2103 Introduction to Ethics (ACTS Equivalency = PHIL 1003)

PHIL 2203 Logic (ACTS Equivalency $=$ PHIL 1003)
PHIL 3113 Environmental Ethics
PHIL 4213 Philosophy of Science

## Biology

BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture) ${ }^{1}$
BIOL 2533 Cell Biology
BIOL 2323 General Genetics
BIOL 3023 Evolutionary Biology
BIOL 3863 General Ecology
and a minimum of one lab chosen from the following:
BIOL 2531L Cell Biology Laboratory
BIOL 2321L General Genetics Laboratory
BIOL 3861L General Ecology Laboratory
At least 23 credit hours in biology (BIOL) or biology-related electives, including:

1. At least 18 credit hours in biology (BIOL) courses numbered 3000 -level or higher, of which at least 12 credit hours must be numbered 4000-level or higher.
2. At least two lab courses numbered 2000 -level or higher. This includes Biology Core labs not previously completed. Courses whose course descriptions explicitly exlude them from counting toward this requirement may not be used. Lab courses may also include BIOL 480V Special Topics in Biological Sciences and BIOL 499V Research in Biology Sciences (and their honors equivalents).
3. No more than four credit hours numbered at the 1000-level are permitted. BIOL 1543/BIOL 1541L Principles of Biology/Principles of Biology Laboratory may not apply to this requirement.
4. A biology (BIOL) course that meets the Fulbright College Writing Requirement. This may be satisfied by a) Enrolling in BIOL 498V Senior Thesis; b) completing a term paper with a grade of a 'B' or higher in a biology (BIOL) course numbered 3000 -level or higher on a topic approved by the instructor; or c) Completing an honors thesis. Students may not use a paper written for another BIOL course for BIOL 498V Senior Thesis.
Note: Biology-related electives that are not taught by the Department of Biological Sciences must be approved by a departmental faculty member using the "Exception Request for Major or Minor Requirements" form.

| General Electives | 8 |
| :--- | ---: |
| Total Hours | 120 |

1 A student who, after completing BIOL 1543/BIOL 1541L Principles of Biology/Principles of Biology Laboratory with a grade of a ' B ' or better in both courses, wishes to substitute BIOL 1543/BIOL 1541L for the required BIOL 1584 Biology for Majors may petition the Department of Biological Sciences to do so. These petitions will be considered on a case by case basis.

Writing Requirement: The college writing requirement for majors in biology may be met by one of the following:

Choose one philosophy (PHIL) course from the following:

1. Completion of an honors thesis,
2. Completion of a senior thesis (BIOL 498V) supervised by a faculty member in biological sciences,
3. Completion of a required term paper with a grade of $B$ or above in a BIOL course numbered 3000 or above on a topic approved by the instructor, or
4. Completion of a paper, supervised by a Biological Sciences faculty member, in Special Topics (BIOL 480V)

Note A student exercising Option 3 or 4 may not use the paper written for that option for credit in BIOL 498V

## B.S. in Biology

## Eight-Semester Degree Plan

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year |  |
| :---: | :---: |
|  | Fall |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |
| Education Outcome 2.1): ${ }^{1}$ |  |
| MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103) |  |
| MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203) |  |
| MATH 1284C Precalculus Mathematics (ACTS Equivalency $=$ MATH 1305) |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) ${ }^{2}$ |  |
| BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture) (Satisfies General Education Outcome 3.4) ${ }^{1}$ | 4 |
| CHEM 1103 University Chemistry I (ACTS <br> Equivalency = CHEM 1414 Lecture) <br> \& CHEM 1101L University Chemistry I Laboratory <br> (ACTS Equivalency $=$ CHEM 1414 Lab) | 4 |
| General Electives | 0-1 |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ |  |
| MATH 1213 Plane Trigonometry (ACTS <br> Equivalency = MATH 1203) (if needed--otherwise take general electives) <br> or MATH 1284C Precalculus Mathematics (ACTS <br> Equivalency = MATH 1305) <br> or MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) |  |


| CHEM 1123 University Chemistry II (ACTS |  |  |
| :---: | :---: | :---: |
| Equivalency = CHEM 1424 Lecture) |  |  |
| \& CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |  |  |
| State Minimum Core-U.S. History (Satisfies General Education Outcome 3.2, 3.3, and 4.2) ${ }^{1}$ |  | 3 |
| General Electives |  | 1-2 |
| Year Total: | 15 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| State Minimum Core-Fine Arts (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| Philosophy (PHIL) requirement | 3 |  |
| BIOL 2533 Cell Biology (take BIOL 2531L if needed) | 3 |  |
| CHEM 3603 Organic Chemistry I | 4 |  |
| \& CHEM 3601L Organic Chemistry I Laboratory |  |  |
| General Electives | 2 |  |


| Third Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| State Minimum Core—Social Science | 3 |  |
| CHEM 3813 Elements of Biochemistry | 3 |  |
| Select one of the following: | 4 |  |


| Year Total: | 16 | 15 |
| :---: | :---: | :---: |
| Fourth Year |  | Units |
|  | Fall | Spring |
| State Minimum Core-Social Science | 3 |  |
| BIOL Electives | 9 |  |
| General Electives | 3 |  |
| State Minimum Core-Humanities (Satisfies General Education Outcome 5.1) ${ }^{1}$ |  | 3 |
| BIOL Electives ((Satisfies General Education Outcomes 1.2 and 6.1) ${ }^{1}$ |  | 3 |
| General Electives |  | 8 |
| Year Total: | 15 | 14 |

[^4]Total Units in Sequence:
120
1 Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu
 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiLCJXVCI6Mn0\&̊ロロrganic Physiological Chemistry Laboratory \%7C1000\&sdata=ZHBCul1Vytd
\%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566؛ \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haV \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks \%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## Requirements for a B.A. Degree with a Major in Biology:

A minimum of 120 hours is required, including:

1. BIOL 1584 Biology for Majors. Majors may substitute another 1000level BIOL course (BIOL 1603/BIOL 1601L Principles of Zoology or BIOL 1613/BIOL 1611L Plant Biology) for BIOL 1584; a maximum of four 1000-level credits may be applied toward the major. A student who, after completing BIOL 1543/BIOL 1541L Principles of Biology/ Lab with a grade of B or better in both courses, wishes to substitute BIOL 1543/BIOL 1541L Principles of Biology for BIOL 1584 may petition the Department of Biological Sciences to do so. These petitions will be considered on a case by case basis for approval.
2. An additional 26 hours of biological sciences, including:
a. Biology Core (13 hours):

BIOL 2533 Cell Biology 3
BIOL 2323 General Genetics 3
BIOL 3023 Evolutionary Biology 3
BIOL 3863 General Ecology 3
and a minimum of one hour of Core Laboratory selected from: 1
5. Students must complete a minimum of 20 credit hours at the 3000level or higher from requirements 2,3 , and 4 listed above or from a combination of requirements 2,3 , and 4 above and from additional 3000 -level or higher BIOL upper-level electives.

Writing Requirement: The college writing requirement for majors in biology may be met by one of the following:

1. Completion of an honors thesis,
2. Completion of a senior thesis (BIOL 498V) supervised by a faculty member in biological sciences,
3. Completion of a required term paper with a grade of $B$ or above in a BIOL course numbered 3000 or above on a topic approved by the instructor, or
4. Completion of a paper, supervised by a Biological Sciences faculty member, in Special Topics (BIOL 480V)

Note A student exercising Option 3 or 4 may not use the paper written for that option for credit in BIOL 498V

## Biology B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| Select one of the following (Satisfies General Education Outcome 2.1): ${ }^{1}$ | 3-4 |  |
| MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203) |  |  |
| MATH 1284C Precalculus Mathematics (ACTS Equivalency = MATH 1305) |  |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) ${ }^{3}$ |  |  |
| BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture) (Satisfies General Education Outcome 3.4) | 4 |  |
| Satisfies General Education Outcome 3.4: |  |  |
| CHEM 1103 University Chemistry I (ACTS <br> Equivalency = CHEM 1414 Lecture) <br> \& CHEM 1101L University Chemistry I Laboratory <br> (ACTS Equivalency = CHEM 1414 Lab) | 4 |  |
| General Elective | 0-1 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| MATH 2043 Survey of Calculus (ACTS Equivalency $=$ MATH 2203) ${ }^{3}$ or MATH 2554 Calculus I (ACTS Equivalency $=$ MATH 2405) |  | 3 |

CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II Laboratory
(ACTS Equivalency = CHEM 1424 Lab)
Select one of the following (Satisfies General Education Outcome 4.2:

HIST 2003 History of the American People to
1877 (ACTS Equivalency $=$ HIST 2113)
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)

PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)
Fine Arts State Minimum Core (Satisfies General
Education Outcome 3.1) ${ }^{2}$
Year Total: 15

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| BIOL 2533 Cell Biology (BIOL 2531L optional) $)^{3}$ | 3 |  |
| Select from the following: | 4 |  |

CHEM 3603 Organic Chemistry I
\& CHEM 3601L Organic Chemistry I
Laboratory ${ }^{3,4}$
or
BIOL 2323 General Genetics
\& BIOL 2321L General Genetics Laboratory ${ }^{3}$
State Minimum Core Social Sciences (Satisfies
General Education Outcome 3.3) ${ }^{5}$
State Minimum Core Social Sciences (Satisfies
General Education Outcome 3.3)(as needed) or General Elective ${ }^{5}$
General Elective (Select a course that satisfies
General Education Outcome 4.1) ${ }^{6}$
Select one of the following:
BIOL 2323 General Genetics
\& BIOL 2321L General Genetics Laboratory ${ }^{3}$
Biology elective
BIOL 3023 Evolutionary Biology ${ }^{3,4}$
Select one of the following:
CHEM 3613 Organic Chemistry II
\& CHEM 3611L Organic Chemistry II
Laboratory ${ }^{3,4}$
CHEM 2613 Organic Physiological Chemistry
(ACTS Equivalency = CHEM 1224 Lecture)
\& CHEM 2611L Organic Physiological
Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab) ${ }^{3}$
Select one of the following:

PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003) (Satisfies General
Education Outcomes 3.2 and 5.1)
PHIL 2203 Logic (ACTS Equivalency $=$ PHIL
1003) ${ }^{3}$

PHIL 3113 Environmental Ethics ${ }^{3,4}$
PHIL 4213 Philosophy of Science ${ }^{3,4}$

${ }^{3}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273).
${ }^{4}$ Meets 24 -hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations (p. 273).
${ }^{5}$ The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include:
AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033
${ }^{6}$ Courses which satisfy the General Education Outcome 4.1 include: AGEC 2303, AMPD 1013, ANTH 1023, ANTH 1033, ANTH 4013, ARCH 1003, CATE 3103, CLST 1003, CLST 1003H, CLST 1013,COMM 1023, GEOS 2003, GEOS 2003H, GERM 2003, HDFS 1403, HDFS 2413, HDFS 2493, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HORT 1103, HRWD 4133, HUMN 1114H, HUMN 1124H, HUMN 2114H, HUMN 2213, INST 2813, INST 2813H, LALS 2013, LARC 1003, MUSY 2003, MUSY 2003H, NURS 4023, PHIL 3113, PHIL 4093, PHIL 4113, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SCWK 3193, SOCI 2013, SOCI 2013H, SOCI 2033, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
7 The Humanities Elective courses which satisfy both General Education Outcomes 3.2 and 5.1 include:
CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
${ }^{8}$ Courses which satisfy the General Education Outcome 1.2 include: ACOM 3143, ACOM 3143H, AGED 3133, AGED 4003, CATE 4013, CATE 406X, COMM 1313, ENGL 1033, ENGL 1033H, INST 3303, INST 3503, INST 3603, INST 4603, NURS 4092, NURS 4112, or NURS 4701.

## Requirements for a Minor in Biology:

Students must complete at least 19 credit hours of BIOL courses that include:

1. BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture) or BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture)/BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
2. Three of the four biology core courses: BIOL 2533 Cell Biology, BIOL 2323 General Genetics, BIOL 3023 Evolutionary Biology, BIOL 3863 General Ecology.
3. Two additional BIOL courses, one of which must be a BIOL course numbered 3000 or above. This may include an additional BIOL core course.

Students must notify their academic dean's office of their intent to minor in biology.

Requirements for Departmental Honors in Biology: The biological sciences honors program is designed to provide students an opportunity to investigate questions in biology through an expanded reading program and research experience. Biological science majors may apply to enter the program between the second semester of the sophomore year and the end of the junior year. Application is made through both Honors Studies (MAIN 517) and the Department of Biological Sciences
(SCEN 601). Applicants must have a 3.5 grade-point average. Students should consult with their adviser to identify and contact a potential faculty research mentor. The student's research activities will then be directed by the departmental faculty member who agrees to sponsor the student.

Students may enroll for up to four hours of credit in BIOL 499VH during the junior year and up to eight hours of credit in BIOL 499VH during the senior year. A maximum of six of these credits may be applied toward a major. Participants must complete and defend an honors thesis and take 12 hours in Honors Studies, which may include six hours of thesis. The honors thesis is based on an original research project and presented orally before a committee composed of two faculty from the biological sciences, a person from outside the biological sciences, and a representative from the Honors Council. This committee makes a recommendation concerning the award of the honors distinction to the Honors Council. Students who successfully complete the departmental honors program usually graduate as "Departmental Scholar Cum Laude." Higher degree distinctions are recommended only in exceptional cases and are based upon the candidate's entire involvement in the honors program. Completion of an honors thesis fulfills the writing requirement in biological sciences, which precludes credit for BIOL 498V (Senior Thesis) for the same body of work.

## Biology/Life Science Teacher Licensure Requirements:

Students interested in pursuing a minor in STEM Education or Secondary Teacher Licensure in mathematics, biology, chemistry, physics, or computer science at the undergraduate level should consult with a STEM Education faculty adviser, teach@uark.edu. Another option to obtain secondary teacher licensure is to complete the one-year Master of Arts in Teaching (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/ mathematicalsciencesmasc/graduatecatalog/programsofstudy/ teachereducation/).

## Faculty

Alrubaye, Adnan A., Ph.D., M.Ed. (University of Arkansas), M.Sc. (University of Baghdad), Assistant Professor, 2016, 2021.
Alverson, Andrew James, Ph.D. (University of Texas at Austin), M.S. (lowa State University), B.S. (Grand Valley State University), Associate Professor, 2012, 2018.
Bailey, Tameka A., Ph.D. (University of Arkansas), B.S. (University of Arkansas-Pine Bluff), Research Assistant Professor, 2017.
Beaulieu, Jeremy M., Ph.D. (Yale University), M.S., B.S. (California Polytechnic State University), Associate Professor, 2016, 2021.
Beaupre, Steven J., Ph.D. (University of Pennsylvania), M.S., B.S. (University of Wisconsin), Professor, 1995, 2006.
Catanzaro, Donald G., Ph.D. (University of Arkansas), A.B. (University of California, Los Angeles), Research Assistant Professor, 2014.
Ceballos, Ruben M., Ph.D. (University of Montana), M.A. (University of Alabama-Birmingham), B.S.(University of Alabama-Huntsville), Assistant Professor, 2016.
DeGregorio, Brett A., Ph.D. (University of Illinois at Urbana-Champaign), M.S. (Purdue University), B.S. (University of Massachusetts at Amherst), Research Associate Professor, 2019.
Douglas, Marlis R., Ph.D., M.S., B.S. (University of Zurich), Professor, Bruker Life Sciences Chair, 2012.
Douglas, Michael Edward, Ph.D. (University of Georgia), M.S., B.S. (University of Louisville), Professor, 21st Century Chair in Global Change Biology, 2011.
Du, Yuchun, Ph.D. (Kagoshima University, Japan), B.S. (Shaanxi
University of Technology, China), Associate Professor, 2007, 2013.

DuRant, Sarah Elizabeth, Ph.D. (Virginia Polytechnic Institute and State University), B.S. (University of South Carolina), Associate Professor, 2017, 2021.
Durdik, Jeannine M., Ph.D. (Johns Hopkins University), B.S. (Purdue University), Professor, 1994, 2004.
Etges, William J., Ph.D. (University of Rochester), M.S. (University of Georgia), B.S. (North Carolina State University), Professor, 1987, 2004.
Evans, Timothy A., Ph.D. (Indiana University), B.S. (Slippery Rock University), Associate Professor, 2013, 2019.
Evans-White, Michelle Allayne, Ph.D. (University of Notre Dame), M.S., B.S. (Kansas State University), Professor, 2008, 2018.

Forbes, Kristian M., Ph.D. (University of Jyväskylä), M.P.H. (Latrobe University), B.Sc. (Latrobe University), Assistant Professor, 2018.
Henry, Ralph Leroy, Ph.D., M.S. (Kansas State University), B.S.E. (University of Kansas), Distinguished Professor, W.M. Keck Endowed Professorship, 1996, 2012.
Ivey, Mack, Ph.D., B.S. (University of Georgia), Associate Professor, 1992, 1998.
Iyer, Shilpa, Ph.D. (University of Georgia), M.Sc., B.Sc. (University of Pune, India), Assistant Professor, 2016.
Kral, Timothy Alan, Ph.D. (University of Florida), B.S. (John Carroll University), Professor, 1981, 2008.
Lehmann, Michael Herbert, Ph.D., Diploma in Biology (Philipps University of Marburg, Germany), Professor, 2002, 2018.
Lessner, Daniel J., Ph.D. (University of lowa), B.S. (University of Wisconsin-Stevens Point), Professor, 2008, 2020.
Lessner, Faith H., Ph.D. (University of lowa), B.S. (Cornell University), Teaching Assistant Professor, 2016, 2018.
Lewis, Jeffrey A., Ph.D. (University of Wisconsin-Madison), B.S. (University of California-Santa Barbara), Associate Professor, 2013, 2020. Lorince, Tammy, M.A., B.S. (University of Arkansas), Instructor, 2000. Magoulick, Daniel D., Ph.D. (University of Pittsburgh), M.S. (Eastern Michigan University), B.S. (Michigan State University), Research Professor, 2000, 2010.
McNabb, David S., Ph.D. (Louisiana State University Health Sciences Center), B.S. (University of Texas at Arlington), Associate Professor, 2000, 2006.
Mortensen, Jennifer, Ph.D. (Tufts University), M.S. (Villanova
University), Teaching Assistant Professor, 2019.
Naithani, Kusum, Ph.D. (University of Wyoming), M.Sc. (G.B. Pant University of Agriculture and Technology-India), B.Sc. (University of Lucknow-India), Associate Professor, 2014, 2021.
Nakanishi, Nagayasu, Ph.D. (University of California, Los Angeles), B.S. (University of California, San Diego), Assistant Professor, 2017.
Ortega, Jason, M.S. (University of Texas-Pan American), B.S. (Cornell University), Instructor, 2019.
Paré, Adam C., Ph.D. (University of California, San Diego), B.S. (Cornell University), Assistant Professor, 2019.
Pinto, Ines, Ph.D. (Louisiana State University Health Sciences Center), M.S., B.S. (University of Chile), Associate Professor, 2000, 2006.

Rhoads, Douglas Duane, Ph.D. (Kansas State University), M.A., B.A. (Wichita State University), University Professor, 1990, 2006.
Shadwick, John D.L., M.S. (University of Arkansas), B.S. (University of Central Arkansas), Instructor, 2011.
Siepielski, Adam M., Ph.D. (University of Wyoming-Laramie), M.S. (New Mexico State University), B.S. (Pennsylvania State University-University Park), Associate Professor, 2015, 2019.
Stephenson, Steven Lee, Ph.D., M.S. (Virginia Polytechnic Institute and State University), B.S. (Lynchburg College), Research Professor, 2003.
Tipsmark, Christian K., Ph.D., M.S. (University of Southern Denmark), Associate Professor, 2010, 2016.

Walker, James M., Ph.D. (University of Colorado-Boulder), M.S., B.S. (Louisiana Polytechnic Institute), Professor, 1965.
Walker, Kate Ireton, M.S. (University of Arkansas), B.S. (Kansas State University), Instructor, 2014.
Westerman, Erica L., Ph.D. (Yale University), M.Sc. (University of New Hampshire), B.S. (Yale University), Assistant Professor, 2016.
Willson, John David, Ph.D. (University of Georgia), B.S. (Davidson College), Associate Professor, 2012, 2018.
Zhuang, Xuan, Ph.D. (University of Illinois Urbana-Champaign), Assistant Professor, 2021.

## Courses

BIOL 1524. Biological Principles (ACTS Equivalency = BIOL 1004 Lecture). 4 Hours.
Integrated lecture and laboratory focusing on the overriding principles of Biology. Designed to convey biological reasoning to non-science majors. May not count as prerequisite for advanced courses in BIOL. Corequisite: Lab component. (Typically offered: Fall, Spring and Summer)
BIOL 1541L. Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab). 1 Hour.
Experimental and observational techniques used in biology with emphasis on the acquisition and interpretation of results that illustrate major biological principles.
Corequisite: BIOL 1543. (Typically offered: Fall, Spring and Summer)
BIOL 1541M. Honors Principles of Biology Laboratory. 1 Hour.
This course is designed for the well prepared student in the Honors program. It focuses on teaching students experimental and observational techniques used in the science of biology. It emphasizes the acquisition and interpretation of results that illustrate the major principles of biology. Corequisite: BIOL 1543H or BIOL 1543. (Typically offered: Fall and Spring)
This course is equivalent to BIOL 1541 L .
BIOL 1543. Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture). 3 Hours.
Principles that unify biology with emphasis on scientific study that demonstrates how all organisms are the product of evolution and are parts of interacting systems from the molecular to the ecosystem level. Corequisite: BIOL 1541L. (Typically offered: Fall, Spring and Summer)
BIOL 1584. Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture). 4 Hours.
Integrated lecture and laboratory course designed to prepare Biology Majors to enter the rest of the Biology Core of Cell Biology, General Genetics, Evolutionary Biology, and General Ecology. Pre- or Corequisite: CHEM 1103 or CHEM 1203. (Typically offered: Fall and Spring)

BIOL 1601L. Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab). 1 Hour.
Laboratory exercises illustrating animal structure, physiology, genetics, and ecology. Corequisite: BIOL 1603. (Typically offered: Fall and Summer)
BIOL 1603. Principles of Zoology (ACTS Equivalency = BIOL 1054 Lecture). 3 Hours.
Introduction to zoological principles relating to cells, organ systems, development, genetics, ecology, and animal phyla. Corequisite: BIOL 1601L. Prerequisite:
BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Fall and Summer)
BIOL 1611L. Plant Biology Laboratory (ACTS Equivalency = BIOL 1034 Lab). 1 Hour.
Plant biology lab. Pre- or Corequisite: BIOL 1613. (Typically offered: Spring and Summer)

BIOL 1613. Plant Biology (ACTS Equivalency = BIOL 1034 Lecture). 3 Hours. Consideration of basic flowering plant structure, growth, development, physiology, genetics, ecology, and a brief survey of other plant groups. Lecture 3 hours per week. BIOL 1611 L is recommended as a corequisite and both are required for partial fulfillment of the Fulbright College natural sciences requirement. Prerequisite: BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Spring and Summer)

BIOL 1693. Biology Bridges. 3 Hours.
Prepares students for advanced biology courses including genetics, cell biology, ecology, and evolutionary biology, among others. Synthesizes sub-disciplines within biology using the underlying concepts of evolutionary theory found in scientific literature. Prerequisite: BIOL 1543 or BIOL 1584. (Typically offered: Spring)

BIOL 2011L. General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab). 1 Hour.
Techniques for handling microorganisms. Does not count toward BS in Biology. Corequisite: BIOL 2013. (Typically offered: Fall, Spring and Summer)

BIOL 2011M. Honors General Microbiology Laboratory. 1 Hour.
Techniques for handling microorganisms. Does not count towards BS in Biology. Corequisite: BIOL 2013. (Typically offered: Fall, Spring and Summer)
This course is equivalent to BIOL 2011L
BIOL 2013. General Microbiology (ACTS Equivalency = BIOL 2004 Lecture). 3 Hours.
Basic concepts of microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Does not count towards BS in Biology. Corequisite: BIOL 2011L. Prerequisite: (BIOL 1543 and BIOL 1541L) or BIOL 1584)) and (CHEM 1073 and CHEM 1071L or CHEM 1103 or CHEM 1123 and CHEM 1121L or CHEM 1203 and CHEM 1201L). (Typically offered: Fall, Spring and Summer)

BIOL 2211L. Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab). 1 Hour.
Exercises include experiments on osmosis, reflexes, senses, muscle, cardiovascular system, ventilation, metabolism, renal function, etc. Data collection, analysis, and report writing. Does not satisfy the Fulbright College writing requirement. Does not count toward BS in Biology. Corequisite: BIOL 2213. (Typically offered: Fall and Spring)

BIOL 2213. Human Physiology (ACTS Equivalency = BIOL 2414 Lecture). 3 Hours.
Fundamental concepts of physiology with emphasis in the human. Does not count toward BS in Biology. Corequisite: BIOL 2211L. Prerequisite: (CHEM 1073 and CHEM 1071L) or (CHEM 1103) or (CHEM 1123 and CHEM 1121L) and MATH 1203. (Typically offered: Fall and Spring)

BIOL 2321L. General Genetics Laboratory. 1 Hour.
Analysis of genetic problems and experiments with emphasis on "hands-on" experience with a variety of organisms. May require time outside laboratory period. Laboratory 3 hours per week. Pre- or Corequisite: BIOL 2323. (Typically offered: Fall and Spring)

## BIOL 2323. General Genetics. 3 Hours.

Surveys of Mendelian, molecular, and population mechanisms of inheritance and gene expression in prokaryotes and eukaryotes. Lecture 3 hours per week. Prerequisite: (BIOL 1584 or BIOL 1543 and BIOL 1541L) and (CHEM 1103 or CHEM 1203) and (MATH 1203 or higher or STAT 2823 or STAT 2303 or equivalent). (Typically offered: Fall and Spring)

BIOL 2441L. Human Anatomy Laboratory (ACTS Equivalency = BIOL 2404 Lab). 1 Hour.

Laboratory 3 hours exercises in mammalian anatomy. Cannot be taken without prior credit in BIOL 2443 or concurrent enrollment in BIOL 2443. Does not count toward BS in Biology. Corequisite: BIOL 2443. (Typically offered: Fall, Spring and Summer)

BIOL 2443. Human Anatomy (ACTS Equivalency = BIOL 2404 Lecture). 3 Hours.
Description of human body as a series of organ systems and their interrelationships. Does not count towards BS in Biology. Corequisite: BIOL 2441L. Prerequisite: Four hours of biological sciences. (Typically offered: Fall, Spring and Summer)

BIOL 2531L. Cell Biology Laboratory. 1 Hour.
Introduction to methods and techniques used in Cell Biology research. Laboratory experiences to highlight topics covered in BIOL 2533. Pre- or Corequisite:
BIOL 2533. (Typically offered: Fall and Spring)
BIOL 2533. Cell Biology. 3 Hours.
Introduction to cell structure, cell processes, biological polymers, energetics, and diversity. An introduction to biochemistry and cell chemistry. Recommended:
(CHEM 1123 and CHEM 1121L) or (CHEM 1223 and CHEM 1221L) or equivalent. Prerequisite: BIOL 1584, or BIOL 1543 and BIOL 1541L. (Typically offered: Fall and Spring)

## BIOL 3001L. Principles of Plant Pathology Lab. 1 Hour.

Lab course in examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions Spread of disease and principles of disease control. Pre- or Corequisite: PLPA 3003 or BIOL 3003. (Typically offered: Fall)
This course is cross-listed with PLPA 3001L
BIOL 3003. Principles of Plant Pathology. 3 Hours.
Examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions. Spread of disease and principles of disease control. (Typically offered: Fall)
This course is cross-listed with PLPA 3003.
BIOL 3011L. Introduction to Insect Identification Lab. 1 Hour.
Introductory lab course on insect identification, collection, and curation techniques, primarily designed as an intensive add-on to BIOL 3013 for students wanting a more in-depth examination of insect diversity. Insect collection required. Course includes field trips. Students are encouraged to contact instructor before enrolling. Pre- or corequisite: BIOL 3013. (Typically offered: Fall)
This course is cross-listed with ENTO 3011L.
BIOL 3013. Introduction to Entomology. 3 Hours.
Fundamentals of insect biology including structure and function, development, ecology, behavior, plant feeding and disease transmission. Lecture 3 hours/week. Students interested in a more intensive examination of insects, including collection, curation, and identification techniques, should sign up for the separate one credit lab BIOL 3011L. Students are strongly encouraged to take BIOL 1543 before registering for this course. (Typically offered: Fall)
This course is cross-listed with ENTO 3013.

## BIOL 3023. Evolutionary Biology. 3 Hours.

An introduction to the mechanisms and patterns of evolutionary change. Seeks to develop logical, scientific skills and to apply them in understanding how life has changed during the history of the earth. Corequisite: Drill component. Prerequisite: (BIOL 1584 or BIOL 1543, BIOL 1541L) and BIOL 2323. (Typically offered: Fall and Spring)

BIOL 3043. Bones, Bodies, and Brains in Evolutionary Perspective. 3 Hours. Reviews the anatomy of the human body, comparing this anatomy with primates mammals, and vertebrates, and it will consider how the major features of the human body emerged throughout evolution. (Typically offered: Spring)
This course is cross-listed with ANTH 3043.
BIOL 3123H. Honors Prokaryote Biology. 3 Hours.
An in-depth coverage of prokaryote diversity, genetics, metabolism, growth, structures and functions. Prerequisite: BIOL 2533. (Typically offered: Spring)

BIOL 3273. Inquiry and Modeling in Science Education. 3 Hours.
Study of science practices with emphasis on modeling and inquiry for learning/ teaching. Includes practical, philosophical, cognitive, and disciplinary specific dimensions of doing science in academic and nonacademic settings. Includes planning and implementing multiple scientific inquiries, engaging in reflective practices, writing and presenting scientific information. Safety and ethical issues are included. Prerequisite: 8 hours of BIOL courses. Corequisite: Drill component. (Typically offered: Fall)
This course is cross-listed with PHYS 3273, CHEM 3273.

## BIOL 3404. Comparative Vertebrate Morphology. 4 Hours.

Anatomy of selected vertebrate animals with emphasis upon homologous structures in various animal groups. The recommended anatomy course for Biology BS majors. Lecture 2 or 3 hours, laboratory 4 or 6 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Fall and Spring)

## BIOL 3861L. General Ecology Laboratory. 1 Hour.

General ecology lab. Pre- or Corequisite: BIOL 3863. (Typically offered: Fall)

## BIOL 3863. General Ecology. 3 Hours.

Ecological principles and concepts; environmental factors and interactions that determine distribution and abundance of organisms. Prerequisite: 7 hours of biological science. (Typically offered: Fall and Spring)

## BIOL 3923H. Honors Colloquium. 3 Hours.

Covers a special topic or issue, offered as part of the honors program. Prerequisite: honors candidacy (not restricted to candidacy in biological sciences). (Typically offered: Irregular) May be repeated for degree credit.

## BIOL 4003L. Laboratory in Prokaryote Biology. 3 Hours.

Laboratory techniques in prokaryote culture, identification, physiology, metabolism, and genetics. Laboratory 6 hours per week. Prerequisite: BIOL 3123. (Typically offered: Fall and Spring)
BIOL 4013. Insect Behavior and Chemical Ecology. 3 Hours.
Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory/discussion 2 hours per week. Corequisite: Lab component. (Typically offered: Spring Even Years)
This course is cross-listed with ENTO 4013.
BIOL 4024. Insect Diversity and Taxonomy. 4 Hours.
Principles and practices of insect classification and identification with emphasis on adult insects. Corequisite: Lab component. Prerequisite: ENTO 3013. (Typically offered: Fall Even Years)
This course is cross-listed with ENTO 4024.

## BIOL 4043. Prokaryote Biology. 3 Hours.

An in-depth coverage of prokaryote diversity, genetics, metabolism, growth, structures and functions. Prerequisite: BIOL 2533. (Typically offered: Spring)

## BIOL 4053. Insect Ecology. 3 Hours.

To develop understanding of important ecological concepts through study of dynamic relationships among insects and their environment. To become familiar with the literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. Corequisite: Lab component. (Typically offered: Fall Even Years) This course is cross-listed with ENTO 4053.

## BIOL 4104. Taxonomy of Flowering Plants. 4 Hours.

Identifying, naming, and classifying of wildflowers, weeds, trees, and other flowering plants. Emphasis is on the practical aspects of plant identification. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1613 and BIOL 1611L and BIOL 2323 and BIOL 3023. (Typically offered: Spring)

BIOL 4114. Dendrology. 4 Hours.
Morphology, classification, geographic distribution, and ecology of woody plants. Lecture 3 hours, laboratory 3 hours per week, and fieldtrips. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Fall)

## BIOL 4122. Food Microbiology. 2 Hours.

The study of food microbiology including classification/taxonomy, contamination, preservation and spoilage of different kinds of foods, pathogenic microorganisms, food poisoning, sanitation, control and inspection and beneficial uses of microorganisms. Prerequisite: BIOL 2013 and BIOL 2011L or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with FDSC 4122.

## BIOL 4133. Plant Disease Control. 3 Hours.

Principles, methods and mechanics of plant disease control. Emphasis is given to the integration of control measures and epidemiology of plant diseases. Lecture 3 hours per week. Prerequisite: PLPA 3003. (Typically offered: Fall)
This course is cross-listed with PLPA 4223.

## BIOL 4153. Biology of Global Change. 3 Hours.

Covers impact of global change on sustainability and adaptability of biological systems. Corequisite: BIOL 4252. Prerequisite: (BIOL 1543 and BIOL 1541L) or BIOL 1584. (Typically offered: Spring)

## BIOL 4163. Dynamic Models in Biology. 3 Hours.

Mathematical and computational techniques for developing, executing, and analyzing dynamic models arising in the biological sciences. Both discrete and continuous time models are studied. Applications include population dynamics, cellular dynamics, and the spread of infectious diseases. Prerequisite: MATH 2554. (Typically offered: Irregular)
This course is cross-listed with MATH 4163.

## BIOL 4174. Conservation Genetics. 4 Hours.

Covers concepts of biodiversity identification and illustrates how genetic data are generated and analyzed to conserve and restore biological diversity. Corequisite: Lab component and drill. Prerequisite: BIOL 3023, BIOL 3863 and STAT 2823 (or equivalent), and Junior standing. (Typically offered: Spring)
BIOL 4213. Biological Regulation and Subcellular Communication. 3 Hours. Combines lectures, review of primary literature, student presentations, and small group discussions to explore a diversity of topics related to mechanisms of biological regulation and subcellular communication. Prerequisite: BIOL 2323 and BIOL 2533. (Typically offered: Irregular)

## BIOL 4223. Bacterial Lifestyles. 3 Hours.

Introduces students to bacteria as prokaryotic organisms, different from eukaryotes such as plants and animals. Model microbial systems will be studied to identify unique strategies that bacteria employ to thrive in their respective environments or develop special adaptations to harsh environments. Prerequisite: BIOL 2013 and BIOL 2011L or BIOL 3123. (Typically offered: Spring Odd Years) This course is cross-listed with PLPA 4123.

## BIOL 4233. Genomics and Bioinformatics. 3 Hours.

Principles of molecular and computational analyses of genomes. Prerequisite: BIOL 2533 and BIOL 2323. (Typically offered: Spring)

## BIOL 4234. Comparative Physiology. 4 Hours.

Comparison of fundamental physiological mechanisms in various animal groups. Adaptations to environmental factors at both the organismal and cellular levels are emphasized. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2533 and CHEM 3613 and (CHEM 3611L or CHEM 3612M). (Typically offered: Fall)
BIOL 4241L. Ichthyology Laboratory. 1 Hour.
Practical application of fish identification based on anatomy, fish sampling methods, and curation of fish specimen. Laboratory component of BIOL 4243. Corequisite: BIOL 4243. (Typically offered: Spring Odd Years)

## BIOL 4241M. Honors Ichthyology Laboratory. 1 Hour.

Practical application of fish identification based on anatomy, fish sampling methods, and curation of fish specimen. Laboratory component of BIOL 4243H. Prerequisite: Honors standing. Corequisite: BIOL 4243H. (Typically offered: Spring Odd Years) This course is equivalent to BIOL 4241L.

BIOL 4243. Ichthyology. 3 Hours.
Comprehensive overview of the diversity of fishes. Covers anatomy, physiology, evolution, taxonomy, ecology, behavior, zoogeography and conservation of marine and freshwater fishes. Lecture 3 hours per week. Prerequisite: Eight credits in Biology. Corequisite: BIOL 4241L. (Typically offered: Spring Odd Years)

## BIOL 4243H. Honors Ichthyology. 3 Hours.

Comprehensive overview of the diversity of fishes. Covers anatomy, physiology, evolution, taxonomy, ecology, behavior, zoogeography and conservation of marine and freshwater fishes. Lecture 3 hours per week. Prerequisite: Eight credits in Biology and honors standing. Corequisite: BIOL 4241L. (Typically offered: Spring Odd Years)
This course is equivalent to BIOL 4243.

## BIOL 4252. Biology of Global Change Seminar. 2 Hours.

Readings, essays, and group discussions that parallel the 27 lectures in BIOL 4153 and which dissect the resulting impacts of global change on sustainability and adaptability of biological systems. Corequisite: BIOL 4153. Prerequisite: BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Spring)

## BIOL 4252H. Honors Biology of Global Change Seminar. 2 Hours.

Readings, essays, and group discussions that parallel the 27 lectures in BIOL 4153 and which dissect the resulting impacts of global change on sustainability and adaptability of biological systems. Corequisite: BIOL 4153. Prerequisite: BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Spring)
This course is equivalent to BIOL 4252.

## BIOL 4263. Cell Physiology. 3 Hours.

In-depth molecular coverage of cellular processes involved in growth, metabolism, transport, excitation, signalling and motility, with emphasis on function and regulation in eukaryotes, primarily animals. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3813 and PHYS 2033. (Typically offered: Fall)

BIOL 4273. Endocrinology. 3 Hours.
In endocrinology we study hormonal integration of living processes as all levels from molecule to organism. We will work with the mechanisms of hormone action, the endocrine control axes and hormones physiological role. The course will include paper discussions and student presentations on topics of special interest. Prerequisite: BIOL 2533 or equivalent. (Typically offered: Spring)

BIOL 4313. Molecular Cell Biology. 3 Hours.
In-depth molecular coverage of transcription, cell cycle, translation, and protein processing in eukaryotes and prokaryotes. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3603 and CHEM 3601L and CHEM 3613 and CHEM 3611L. (Typically offered: Spring)

## BIOL 4313H. Honors Molecular Cell Biology. 3 Hours.

In-depth molecular coverage of transcription, cell cycle, translation, and protein processing in eukaryotes and prokaryotes. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3603 and CHEM 3601L and CHEM 3613 and CHEM 3611L. (Typically offered: Spring)
This course is equivalent to BIOL 4313.

## BIOL 4323. Comparative Neurobiology. 3 Hours.

Exploration of modern research approaches to understanding the development and function of animal nervous systems, with emphasis on molecular and cellular approaches in non-human animal models commonly used in biomedical research. Format combines lectures, group discussions, and student presentations using examples from the primary neurobiology literature. Prerequisite: BIOL 2323 and BIOL 2533 or equivalents. (Typically offered: Irregular)

BIOL 4333. Biotechnology in Agriculture. 3 Hours.
Discussion of the techniques, applications, and issues of biotechnology as it is being used in modern agriculture. Coverage includes the basics of molecular biology, production of transgenic plants and animals, and new applications in the agricultural, food, and medical marketplace. Lecture and discussion, 3 hours per week. (Typically offered: Fall)
This course is cross-listed with PLPA 4333.
BIOL 4353. Ecological Genetics/Genomics. 3 Hours.
Analysis of the genetics of natural and laboratory populations with emphasis on the ecological bases of evolutionary change. Prerequisite: BIOL 2323 and BIOL 2321L and MATH 2554 and STAT 2823 or equivalents. (Typically offered: Fall Odd Years)

## BIOL 4433. Principles of Evolution. 3 Hours.

Advanced survey of the mechanisms of evolutionary change with special emphasis on advances since the Modern Synthesis. Historical, theoretical, and population genetics approaches are discussed. Recommended BIOL 3023 and BIOL 2321L and BIOL 3861L. Prerequisite: BIOL 2323 and BIOL 3863. (Typically offered: Fall Even Years)

## BIOL 4463. Physiological Ecology. 3 Hours.

Interactions between environment, physiology, and properties of individuals and populations on both evolutionary and ecological scales. Prerequisite: BIOL 3863 and BIOL 4234 and its lab component. (Typically offered: Spring Odd Years)

BIOL 4511L. Population Ecology Laboratory. 1 Hour.
Population Ecology Lab. Pre- or Corequisite: BIOL 4513. (Typically offered: Fall Even Years)

## BIOL 4513. Population Ecology. 3 Hours.

Survey of theoretical and applied aspects of population processes stressing models of growth, interspecific interactions, and adaptation to physical and biotic environments. Prerequisite: BIOL 3863. (Typically offered: Fall Even Years)

BIOL 4523. Plant Ecology. 3 Hours.
To develop understanding of important ecological concepts through study of dynamics relationships among plants and their environment. To become familiar with the literature of plant ecology, and interpretation and critique of ecological research. Prerequisite: BIOL 3863. (Typically offered: Spring Even Years)

## BIOL 4543. Developmental Biology. 3 Hours.

An analysis of the principles and mechanisms of development emphasizing the embryonic and postembryonic development of animals. Prerequisite: BIOL 2533 and BIOL 2323. (Typically offered: Irregular)

BIOL 4554. Developmental Biology with Laboratory. 4 Hours.
An analysis of the concepts of mechanisms of development emphasizing the experimental approach. Lecture 3 hours, laboratory 3 hours per week. Students may not receive degree credit for both BIOL 4543 and BIOL 4554. Corequisite: Lab component. Prerequisite: BIOL 2533 and BIOL 2323 or graduate standing. (Typically offered: Fall)

## BIOL 4563. Cancer Biology. 3 Hours.

An introduction to the fundamentals of cancer biology. Prerequisite: BIOL 2533. (Typically offered: Fall)

BIOL 4573L. Introduction to Research in Animal Development and Evolution. 3 Hours.
Provides a hands-on introduction to investigation of problems in animal development and evolution. Emphasis on comparative molecular genetic approaches using nontraditional model organisms. Prerequisite: BIOL 2323. (Typically offered: Fall)

## BIOL 4583. Genetic Engineering. 3 Hours.

Provides an overview of current methods for altering gene expression, as well as ethical concerns arising from genetic engineering. Special emphasis is placed on practical considerations and techniques necessary for implementing genetic engineering strategies. Prerequisite: BIOL 2323 and BIOL 2533. (Typically offered: Fall)

BIOL 4613. Primate Adaptation and Evolution. 3 Hours.
Introduction to the biology of the order Primates. This course considers the comparative anatomy, behavioral ecology and paleontology of our nearest living relatives. Prerequisite: BIOL 3023 or ANTH 1013. (Typically offered: Spring) This course is cross-listed with ANTH 4613.

BIOL 4693. Forest Ecology. 3 Hours.
Introduction to the various biological, ecological and historical aspects of forest communities, with particular emphasis on the forests of the central and southeastern United States. Prerequisite: BIOL 3863. (Typically offered: Irregular)

BIOL 4703. Mechanisms of Pathogenesis. 3 Hours.
A survey of the events causing human disease at the molecular, cellular and genetic levels. Seeks to develop an appreciation that both the tricks pathogens use and the body's own defenses contribute to pathology. Prerequisite: BIOL 2533. (Typically offered: Fall)

## BIOL 4711L. Basic Immunology Laboratory. 1 Hour.

Basic immunology laboratory. Corequisite: BIOL 4713. (Typically offered: Spring)

## BIOL 4713. Basic Immunology. 3 Hours.

A general overview of immunity with emphasis on the underlying cellular, molecular, and genetic events, and discussions of more specialized issues in immunology, such as disease states involving the immune system, and other interesting problems in modern immunology. Lecture 2 hours, laboratory 4 hours per week. Prerequisite: BIOL 2323 and BIOL 2533. (Typically offered: Spring)

## BIOL 4713H. Honors Basic Immunology. 3 Hours.

A general overview of Immunity with emphasis on the underlying cellular, molecular, and genetic events, and discussions of more specialized issues in Immunology, such as disease states involving the Immune system, and other interesting problems in modern Immunology. Prerequisite: BIOL 2323 and BIOL 2533. (Typically offered: Spring)
This course is equivalent to BIOL 4713.
BIOL 4723L. Laboratory in Microbial Fermentation. 3 Hours.
An inquiry-based lab focusing on the microbiology of brewing. Introduces students to laboratory techniques used in molecular ecology, microbial physiology, genetics, and brewing. Laboratory 6 hours per week. Pre- or corequisite: FDSC 2723. Prerequisite: BIOL 2013 or BIOL 2323 or BIOL 2533. (Typically offered: Fall Even Years)

## BIOL 4734. Wildlife Management Techniques. 4 Hours.

To familiarize students with techniques used in the management of wildlife populations. Students will be exposed to field methods, approaches to data analysis, experimental design, and how to write a scientific paper. Management applications will be emphasized. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Irregular)

## BIOL 4744. Fish Biology. 4 Hours.

Morphology, classification, life history, population dynamics, and natural history of fishes and fish-like vertebrates. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: 12 hours of biological science. (Typically offered: Spring Odd Years)
BIOL 4763. Ornithology. 3 Hours.
Taxonomy, morphology, physiology, behavior, and ecology of birds. Lecture, laboratory, and field work. Corequisite: Lab component. Prerequisite: BIOL 3863 (Typically offered: Spring Even Years)

## BIOL 4774. Biometry. 4 Hours.

Students learn biological statistics and experimental design by actually designing experiments and analyzing data, as well as through lecture, discussion, reading, writing, and problem solving. Lecture 3 hours, laboratory 3 hours each week. Corequisite: Lab component. Prerequisite: (STAT 2823 or STAT 2303 or equivalent) and BIOL 3863. (Typically offered: Spring Even Years)

BIOL 4793. Introduction to Neurobiology. 3 Hours.
Exploration of the neurological underpinnings of perception, action, and experience including: how sense receptors convert information in the world into electricity, how information flows through the nervous systems, how neural wiring makes vision possible, how the nervous system changes with experience, and how the system develops. Prerequisite: BIOL 2533. (Typically offered: Spring)

BIOL 480V. Special Topics in Biological Sciences. 1-6 Hour.
Consideration of new areas of biological sciences not yet treated adequately in other courses. Prerequisite: 8 hours of biological sciences. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
BIOL 480VH. Honors Special Topics in Biological Sciences. 1-6 Hour.
Consideration of new areas of biological sciences not yet treated adequately in other courses. Prerequisite: 8 hours of biological sciences. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to BIOL 480 V .

## BIOL 4833. Animal Behavior. 3 Hours.

Organization, regulation, and phylogeny of animal behavior, emphasizing diversity across animal taxa. Lecture, laboratory, and field work. Corequisite: Lab component. (Typically offered: Spring)
BIOL 4844. Community and Ecosystem Ecology. 4 Hours.
Survey of theoretical and applied aspects of community processes stressing structure, tropic dynamics, community interactions, and major community types. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Fall Odd Years)

BIOL 4863. Analysis of Animal Populations. 3 Hours.
Basic principles of design and analysis for population studies of fish and wildlife species. Students will be instructed in the use of the latest software for estimating population parameters. Focus will be on both concepts and applications.
Management applications of estimated parameters will be emphasized. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Spring Even Years)
BIOL 4873. Microbial Molecular Genetics and Informatics. 3 Hours.
Fundamentals of microbial genomics and bioinformatics. Course covers microbial genetics, genetic structure, genome organization, proteome organization, approaches for the analysis of DNA, RNA, and proteins, cellular metabolic pathways, genetic regulation, small RNA molecules, functional genomics, metagenomics, and bioinformatics approaches for analysis of microbial genomes. Prerequisite: BIOL 2323 or BIOL 2533. (Typically offered: Fall)
BIOL 4883. Mammalian Evolution and Osteology. 3 Hours.
Focuses on describing the evolutionary history of mammals, a group of vertebrates that include over 5,000 species in 29 orders, and will provide an overview of living species and their identifying features. Prerequisite: ANTH 1013 and ANTH 1011L, or BIOL 1543 and BIOL 1541L, or instructor consent. (Typically offered: Fall Even Years)
This course is equivalent to ANTH 4703.
BIOL 496V. Culture and Environment: Field Studies. 1-6 Hour.
May be taken by students participating in overseas study programs or other domestic field study programs approved by the department. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
BIOL 496VH. Honors Culture and Environment: Field Studies. 1-6 Hour.
May be taken by students participating in overseas study programs or other domestic field study programs approved by the department. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
This course is equivalent to BIOL 496V.
BIOL 498V. Senior Thesis. 1-6 Hour.
Senior thesis. (Typically offered: Fall, Spring and Summer)

BIOL 499V. Research In Biological Sciences. 1-4 Hour.
Research. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.

BIOL 499VH. Honors Research in Biological Sciences. 1-4 Hour. Honors research. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit. This course is equivalent to BIOL 499V.

## Chemistry and Biochemistry (CHBC)

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The Department of Chemistry and Biochemistry offers two degree programs leading to either Bachelor of Science degree or a Bachelor of Arts degree.

The Bachelor of Science degree offers students one of three concentrations: a chemistry concentration, a biophysical concentration and a biochemistry concentration.

The Bachelor of Arts degree offers students the choice of two concentrations: a chemistry concentration and a biochemistry concentration.

Students with satisfactory performance on the chemistry proficiency exam and who completed CHEM 1123 on the Fayetteville campus with grade of "C" or better can request credit for CHEM 1103.

## Requirements for a B.S. degree with a Major in Chemistry

In addition to the University Core requirements and the Fulbright College of Arts and Sciences Graduation Requirements, the following course requirements must be met. Bolded courses from the list below may be applied to portions of the University Core requirements.

A Minimum of 40 Semester Hours in Chemistry including:
8 hours of one of the two following sequences:
CHEM 1203 Chemistry for Majors I
\& CHEM 1201Land Chemistry for Majors I Laboratory
CHEM 1223 Chemistry for Majors II
\& CHEM 1221Land Chemistry for Majors II Laboratory
or
CHEM 1103 University Chemistry I (ACTS Equivalency =
\& CHEM 1101LCHEM 1414 Lecture)
and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)

| CHEM 1123 <br> \& CHEM 1121 | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |  |
| :---: | :---: | :---: |
| CHEM 2263 \& CHEM 2261L | Analytical Chemistry Lecture and Analytical Chemistry Laboratory | 4 |
| CHEM 3504 | Physical Chemistry I | 4 |
| CHEM 3512L | Physical Chemistry Laboratory | 2 |
| CHEM 3514 | Physical Chemistry II | 4 |
| CHEM 3703 <br> \& CHEM 3702L | Organic Chemistry I Lecture for Chemistry Majors and Organic Chemistry I Lab for Chemistry Majors | 5 |
| CHEM 3713 <br> \& CHEM 3712L | Organic Chemistry II Lecture for Chemistry Majors and Organic Chemistry II Lab for Chemistry Majors | 5 |
| CHEM 4123 | Advanced Inorganic Chemistry I | 3 |
| CHEM 4213 <br> \& CHEM 4211L | Instrumental Analysis and Instrumental Analysis Laboratory | 4 |
| CHEM 4723 | Experimental Methods in Organic Chemistry | 3 |
| And at least one | dditional Advanced Lecture course is required. | 3 |

A minimum of 18 hours of science outside of chemistry are required, including math through:

| MATH 2574 | Calculus III (ACTS Equivalency $=$ MATH 2603) <br> (Mathematics through MATH 2574) | 4 |
| :--- | :--- | :--- |
| and physics through: |  |  |

These mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program. Some work in the biological sciences is recommended.

This program meets the minimum requirements for certification by the American Chemical Society if CHEM 3813 (or CHEM 4813H/CHEM 4843H or CHEM 5813/) is included. Sample schedules may be obtained from the department of chemistry and biochemistry. Prospective students should consult a departmental adviser.

Writing Requirement: Chemistry majors will satisfy the Fulbright College writing requirement by satisfactory completion of the formal research/analytical reports required in Physical Chemistry Laboratory, CHEM 3451L or CHEM 3512L.

## Chemistry B.S. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area. Students must complete at least 124 hours and this must be considered when scheduling upper-level hours in the senior year.

This program meets the minimum requirements for certification by the American Chemical Society if CHEM 3813 (or CHEM 4813H/CHEM 4843H or CHEM 5813/CHEM 5843) is included.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) | 3 |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) ${ }^{1}$ | 4 |  |
| Select one of the following: | 4 |  |
| CHEM 1203 Chemistry for Majors I \& CHEM 1201L Chemistry for Majors I Laboratory |  |  |
| CHEM 1103 University Chemistry I (ACTS <br> Equivalency = CHEM 1414 Lecture) <br> \& CHEM 1101L University Chemistry I <br> Laboratory (ACTS Equivalency = CHEM 1414 <br> Lab) |  |  |
| University/State Core U.S. History requirement | 3 |  |
| General Elective | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) |  | 3 |
| MATH 2564 Calculus II (ACTS Equivalency $=$ MATH 2505) ${ }^{1}$ |  | 4 |
| Select one of the following: |  | 4 |
| CHEM 1223 Chemistry for Majors II \& CHEM 1221L Chemistry for Majors II Laboratory |  |  |
| CHEM 1123 University Chemistry II (ACTS <br> Equivalency = CHEM 1424 Lecture) <br> \& CHEM 1121L University Chemistry II <br> Laboratory (ACTS Equivalency = CHEM 1424 <br> Lab) |  |  |
| University/State Core Social Science requirement |  | 3 |
| Year Total: | 17 | 14 |
| Second Year |  | Units |
|  | Fall | Spring |
| MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) ${ }^{1}$ | 4 |  |
| PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) ${ }^{1}$ | 4 |  |
| CHEM 3703 Organic Chemistry I Lecture for Chemistry Majors \& CHEM 3702L Organic Chemistry I Lab for Chemistry Majors ${ }^{1,2}$ | 5 |  |
| University/State Core Fine Arts or Humanities requirement | 3 |  |
| PHYS 2074 University Physics II (ACTS <br> Equivalency = PHYS 2044 Lecture) ${ }^{1}$ |  | 4 |
| CHEM 3713 Organic Chemistry II Lecture for Chemistry Majors \& CHEM 3712L Organic Chemistry II Lab for Chemistry Majors ${ }^{1,2}$ |  | 5 |
| University/State Core Humanities or Fine Arts requirement (as needed) |  | 3 |
| University/State Core Social Science requirement |  | 3 |
| Year Total: | 16 | 15 |


| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| CHEM 3504 Physical Chemistry 1, ${ }^{1,2}$ | 4 |  |
| CHEM 2263 Analytical Chemistry Lecture \& CHEM 2261L Analytical Chemistry Laboratory ${ }^{1}$ | 4 |  |
| Select one of the following: | 3-4 |  |
| BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory $(\text { ACTS Equivalency }=\text { BIOL } 1014 \mathrm{Lab})^{1}$ <br> General Elective |  |  |
| University/State Core Social Science requirement | 3 |  |
| CHEM 3514 Physical Chemistry II \& CHEM 3512L Physical Chemistry Laboratory ${ }^{1,2}$ |  | 6 |
| Advanced Level Elective Course ${ }^{1}$ |  | 4 |
| Select one of the following: |  | 3-4 |
| BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory <br> (ACTS Equivalency = BIOL 1014 Lab) |  |  |
| General Elective |  |  |
| General Elective |  | 3 |
| Year Total: | 14 | 16 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| CHEM 4123 Advanced Inorganic Chemistry I ${ }^{1,2}$ | 3 |  |
| CHEM 4723 Experimental Methods in Organic Chemistry ${ }^{1,2}$ | 3 |  |
| CHEM 3813 Elements of Biochemistry ${ }^{1,2}$ | 3 |  |
| CHEM Elective | 3 |  |
| General Elective | 3 |  |
| CHEM 4213 Instrumental Analysis |  | 4 |
| \& CHEM 4211L Instrumental Analysis Laboratory ${ }^{1,2}$ |  |  |
| CHEM 4853 Biochemical Techniques ${ }^{1,2}$ |  | 3 |
| General Electives (as needed to total 120) |  | 6 |
| Year Total: | 15 | 13 |

Total Units in Sequence:
${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations on page 131 of this chapter
${ }^{2}$ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 131 of this chapter.

## Requirements for a B.S. degree with a Major in Chemistry, Biophysical Concentration

In addition to the University Core requirements and the Fulbright College of Arts and Sciences Graduation Requirements (see College Academic Regulations and Degree Completion Policy), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the University Core requirements.


A Minimum of 43 Semester Hours in Chemistry including:
One of the following sequences:
\& CHEM 1201Land Chemistry for Majors I Laboratory
and
CHEM 1223 Chemistry for Majors II \& CHEM 1221Land Chemistry for Majors II Laboratory

CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture)
and University Chemistry I Laboratory (ACTS
Equivalency = CHEM 1414 Lab)
and
CHEM 1123 University Chemistry II (ACTS Equivalency =
\& CHEM 1121LCHEM 1424 Lecture)
and University Chemistry II Laboratory (ACTS
Equivalency = CHEM 1424 Lab)
CHEM 2263 Analytical Chemistry Lecture
\& CHEM 2261L and Analytical Chemistry Laboratory
CHEM 3504 Physical Chemistry I

CHEM 3603 Organic Chemistry I
\& CHEM 3601Land Organic Chemistry I Laboratory
and
CHEM 3613 Organic Chemistry II
\& CHEM 3611Land Organic Chemistry II Laboratory
or
CHEM 3703 Organic Chemistry I Lecture for Chemistry Majors \& CHEM 3702Land Organic Chemistry I Lab for Chemistry Majors

CHEM 3713 Organic Chemistry II Lecture for Chemistry Majors
\& CHEM 3712Land Organic Chemistry II Lab for Chemistry Majors
CHEM 3514 Physical Chemistry II

BIOL 1543 Principles of Biology (ACTS Equivalency = \& BIOL 1541L BIOL 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
BIOL 2533 Cell Biology
\& BIOL 2531L and Cell Biology Laboratory
And one additional lecture course numbered above 3000.
The mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program.

Total Hours

The mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program.

Writing Requirement: Chemistry majors will satisfy the Fulbright College writing requirement by satisfactory completion of the formal research/analytical reports required in Physical Chemistry Laboratory, CHEM 3451L or CHEM 3512L.

## Chemistry B.S. with Biophysical Option Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency = <br> ENGL 1013) | 3 |  |
| CHEM 1103 University Chemistry I (ACTS <br> Equivalency = CHEM 1414 Lecture) | 4 |  |
| \& CHEM 1101L University Chemistry I Laboratory |  |  |
| (ACTS Equivalency = CHEM 1414 Lab) |  |  |
| MATH 2554 Calculus I (ACTS Equivalency = |  |  |
| MATH 2405) |  |  |
| University/State Core Fine Arts or Humanities <br> Course | 4 |  |

ENGL 1023)
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) ${ }^{1}$
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II Laboratory
(ACTS Equivalency = CHEM 1424 Lab)
University/State Core Humanities or Fine Arts
course (as needed)
University/State Core U.S. History Course
Year Total:
14



The mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program.

## Total Hours

Writing Requirement: Chemistry majors will satisfy the Fulbright College writing requirement by satisfactory completion of the formal research/analytical reports required in Physical Chemistry Laboratory, CHEM 3451L or CHEM 3512L.

## Chemistry B.S. with Biochemistry Option Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

This program meets the minimum requirements for certification by the American Chemical Society if CHEM 3813 (or CHEM $4813 \mathrm{H} / \mathrm{CHEM} 4843 \mathrm{H}$ ) is included.

| First Year | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency = | 3 |

MATH 1213 Plane Trigonometry (ACTS
Equivalency = MATH 1203)

MATH 1284C Precalculus Mathematics (ACTS
Equivalency = MATH 1305)
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) ${ }^{1}$
Select one of the following:
CHEM 1203 Chemistry for Majors I
\& CHEM 1201L Chemistry for Majors I
Laboratory
CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I
Laboratory (ACTS Equivalency = CHEM 1414 Lab)
University/State Core Fine Arts or Humanities requirement
University/State Core U.S. History requirement if 0-3 taking MATH 1213
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) ${ }^{1}$
or MATH 2564 Calculus II (ACTS Equivalency =
MATH 2505)
Select one of the following:
CHEM 1223 Chemistry for Majors II
\& CHEM 1221L Chemistry for Majors II Laboratory
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424 Lab)
University/State Core Humanities or Fine Arts requirement (as needed)
University/State Core Social Science requirement
Year Total:

| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Select one of the following as needed: | 3-4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) (if not already taken) ${ }^{1}$ |  |  |
| University/state core U.S. history requirement (as needed) |  |  |
| Select one of the following: | 4 |  |
| PHYS 2013 College Physics I (ACTS |  |  |
| Equivalency = PHYS 2014 Lecture) |  |  |
| \& PHYS 2011L College Physics I Laboratory $\left(\right.$ ACTS Equivalency $=$ PHYS 2014 Lab) ${ }^{1}$ |  |  |
| PHYS 2054 University Physics I (ACTS Equivalency $=$ PHYS 2034) ${ }^{1,3}$ |  |  |
| CHEM 3703 Organic Chemistry I Lecture for | 5 |  |
| \& CHEM 3702L Organic Chemistry I Lab for Chemistry Majors ${ }^{1,2}$ |  |  |
| University/State Core Social Science requirement | 3 |  |
| Select one of the following: |  | 4 |

PHYS 2033 College Physics II (ACTS
Equivalency = PHYS 2024 Lecture) \& PHYS 2031L College Physics II Laboratory
$\left(\right.$ ACTS Equivalency $=$ PHYS 2024 Lab) ${ }^{1}$
PHYS 2074 University Physics II (ACTS
Equivalency = PHYS 2044 Lecture) ${ }^{1}$
CHEM 3713 Organic Chemistry II Lecture for
Chemistry Majors
\& CHEM 3712L Organic Chemistry II Lab for Chemistry Majors ${ }^{1,2}$
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
CHEM 2263 Analytical Chemistry Lecture ${ }^{1,2}$
Year Total:

Third Year
CHEM 3453 Elements of Physical Chemistry
\& CHEM 3451L Elements of Physical Chemistry Laboratory ${ }^{1,2}$
CHEM 2261L Analytical Chemistry Laboratory ${ }^{1}$
BIOL 2533 Cell Biology
\& BIOL 2531L Cell Biology Laboratory
University/State Core Social Science requirements
General Elective
Select one of the following:
CHEM 4213 Instrumental Analysis
\& CHEM 4211L Instrumental Analysis
Laboratory ${ }^{1,2}$
CHEM 4123 Advanced Inorganic Chemistry I ${ }^{1,2}$
BIOL 2013 General Microbiology (ACTS
Equivalency = BIOL 2004 Lecture)
\& BIOL 2011L General Microbiology Laboratory
(ACTS Equivalency = BIOL 2004 Lab)
3000+ General Elective (if CHEM 4123 is taken), else General Elective
General Electives
Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| CHEM 4813H Honors Biochemistry $I^{1,2}$ | 3 |  |
| BIOL 2323 General Genetics | 3 |  |

\& BIOL 2321L General Genetics Laboratory ${ }^{1,2}$
or BIOL 4233 Genomics and Bioinformatics
$3000+$ General Elective (if BIOL 2323 is taken),
3
else General Elective
General Electives
CHEM 4843H Honors Biochemistry II ${ }^{1,2}$
CHEM 4853 Biochemical Techniques ${ }^{1,2}$
General Electives as needed to complete 120-hour requirement
Year Total:

## Total Units in Sequence:

${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations on page 131 of this chapter.
2 Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations on page 131 of this chapter.
${ }^{3}$ PHYS 2054 Calculus Based University Physics (pre- or co-requisite MATH 2554) and PHYS 2074 (pre- or co-requisite MATH 2564), is a better choice for students interested in graduate school.

## Requirements for a B.A. degree with a Major in Chemistry with Chemistry Concentration <br> In addition to the University Core requirements and the Fulbright College of Arts and Sciences Graduation Requirements, the following course requirements must be met. Bolded courses from the list below may be applied to portions of the university/state minimum core requirements. <br> Completion of a World Language Course at the 2003 Intermediate I level. <br> Select one of the following:

CHEM 1203 Chemistry for Majors I
\& CHEM 1201Land Chemistry for Majors I Laboratory
\& CHEM 1223 and Chemistry for Majors II
\& CHEM 1221Land Chemistry for Majors II Laboratory
CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture)
\& CHEM 1123 and University Chemistry I Laboratory (ACTS
\& CHEM 1121LEquivalency = CHEM 1414 Lab) and University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture)
and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
CHEM 2263 Analytical Chemistry Lecture 4
\& CHEM 2261L and Analytical Chemistry Laboratory
Select one of the following:
CHEM 3703 Organic Chemistry I Lecture for Chemistry Majors
\& CHEM 3702Land Organic Chemistry I Lab for Chemistry Majors
\& CHEM 3713 and Organic Chemistry II Lecture for Chemistry
\& CHEM 3712LMajors
and Organic Chemistry II Lab for Chemistry Majors
CHEM 3603 Organic Chemistry I
\& CHEM 3601Land Organic Chemistry I Laboratory
\& CHEM 3613 and Organic Chemistry II
\& CHEM 3611Land Organic Chemistry II Laboratory
Select one of the following:
CHEM 3453 Elements of Physical Chemistry
\& CHEM 3451Land Elements of Physical Chemistry Laboratory ${ }^{1}$
CHEM 3504 Physical Chemistry I
\& CHEM 3514 and Physical Chemistry II
\& CHEM 3512Land Physical Chemistry Laboratory ${ }^{2}$
Two Additional Lecture Courses Numbered Above 3000.

## Total Hours

${ }^{1}$ PHYS 2033/PHYS 2031L and MATH 2554 or MATH 2043 are prerequisites for CHEM 3453
${ }^{2}$ PHYS 2074 and MATH 2574 are prerequisites for the alternate physical chemistry course sequence CHEM 3504 and CHEM 3514/CHEM 3512L.

These physics and mathematics prerequisite requirements are substantial, and these courses and their prerequisites should be scheduled early in the student's program. Sample schedules may be obtained from the department of chemistry and biochemistry. Prospective students should consult a departmental adviser.

Writing Requirement: Chemistry majors will satisfy the Fulbright College writing requirement by satisfactory completion of the formal research/analytical reports required in Physical Chemistry Laboratory, CHEM 3451L or CHEM 3512L.

## Chemistry B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.


CHEM 1223 Chemistry for Majors II
\& CHEM 1221L Chemistry for Majors II
Laboratory
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424
Lab)
Intermediate I World Language Course Numbered
2003
University/State Core Social Science requirement
Year Total:

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

Select one of the following: 4-5

CHEM 3703 Organic Chemistry I Lecture for Chemistry Majors
\& CHEM 3702L Organic Chemistry I Lab for Chemistry Majors ${ }^{1,2}$
CHEM 3603 Organic Chemistry I
\& CHEM 3601L Organic Chemistry I Laboratory ${ }^{1,2}$
PHYS 2013 College Physics I (ACTS Equivalency
= PHYS 2014 Lecture)
\& PHYS 2011L College Physics I Laboratory
(ACTS Equivalency = PHYS 2014 Lab) ${ }^{1}$
University/State Core Fine Arts or Humanities requirement
University/State Core Social Science requirement 3
General Elective
Select one of the following:
CHEM 3713 Organic Chemistry II Lecture for Chemistry Majors
\& CHEM 3712L Organic Chemistry II Lab for Chemistry Majors ${ }^{1,2}$
CHEM 3613 Organic Chemistry II
\& CHEM 3611L Organic Chemistry II Laboratory ${ }^{1,2}$
University/State Core Humanities or Fine Arts
requirement (as needed)
PHYS 2033 College Physics II (ACTS Equivalency 4
= PHYS 2024 Lecture)
\& PHYS 2031L College Physics II Laboratory
(ACTS Equivalency $=$ PHYS 2024 Lab)
University/State Core Social Science requirement 3

## (as needed)

Year Total:

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| CHEM 2263 Analytical Chemistry Lecture ${ }^{1}$ | 3 |  |
| CHEM 3453 Elements of Physical Chemistry | 4 |  |
| \& CHEM 3451L Elements of Physical Chemistry Laboratory ${ }^{1,2}$ |  |  |
| General Electives | 9 |  |



## Requirements for a B.A. degree with a Major in Chemistry with Biochemistry Concentration

In addition to the University Core requirements and the Fulbright College of Arts and Sciences Graduation Requirements (see College Academic Regulations and Degree Completion Policy), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the University Core requirements.

A minimum of 32 semester hours in chemistry including:
Select one of the following:
CHEM 1203 Chemistry for Majors I
\& CHEM 1201L and Chemistry for Majors I Laboratory
\& CHEM 1223 and Chemistry for Majors II
\& CHEM 1221Land Chemistry for Majors II Laboratory
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) (CHEM 1101L, CHEM 1123, CHEM 1121L)
CHEM 2263 Analytical Chemistry Lecture 4
\& CHEM 2261L and Analytical Chemistry Laboratory
Select one of the following:
CHEM 3453 Elements of Physical Chemistry
\& CHEM 3451L and Elements of Physical Chemistry Laboratory
CHEM 3504 Physical Chemistry I
\& CHEM 3514 and Physical Chemistry II
\& CHEM 3512Land Physical Chemistry Laboratory
Select one of the following: ..... 8
CHEM 3603 Organic Chemistry I
\& CHEM 3613 and Organic Chemistry II
CHEM 3703 Organic Chemistry I Lecture for Chemistry Majors
\& CHEM 3713 and Organic Chemistry II Lecture for Chemistry \& CHEM 3712LMajors and Organic Chemistry II Lab for Chemistry Majors

Select one of the following:
Or completion of a senior thesis based on independent research wherein at least 1 credit hour is earned in CHEM 400V (chemistry research) and/or CHEM 400VH (honors chemistry research) during each of 3 different semesters.
Select one of the following: ..... 6-7
CHEM 5813-5843 (same as CHEM 4813H-4843H)
CHEM 3813 Elements of Biochemistry
\& CHEM 4213 and Instrumental Analysis
\& CHEM 4211Land Instrumental Analysis Laboratory
CHEM 3813 Elements of Biochemistry
\& CHEM 4123 and Advanced Inorganic Chemistry I
CHEM 3813 Elements of Biochemistry
\& CHEM 4723 and Experimental Methods in Organic Chemistry
MATH $2554 \quad$ Calculus I (ACTS Equivalency = MATH 2405) ..... 4
or MATH 2043 Survey of Calculus (ACTS Equivalency = MATH2203)

Select one of the following:
PHYS 2013 College Physics I (ACTS Equivalency = PHYS
\& PHYS 2011L 2014 Lecture)
\& PHYS 2033 and College Physics I Laboratory (ACTS
\& PHYS 2031L Equivalency = PHYS 2014 Lab)
and College Physics II (ACTS Equivalency = PHYS 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)

## PHYS 2054 / PHYS 2074

Four courses from the Biological Sciences (at least 3 hours of which must be upper-level courses)
Completion of a World Language Course at the 2003 Intermediate I Level.

## Total Hours

The mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program.

Writing Requirement: Chemistry majors will satisfy the Fulbright College writing requirement by satisfactory completion of the formal research/analytical reports required in Physical Chemistry Laboratory, CHEM 3451L or CHEM 3512L.

## Chemistry B.A. with Biochemistry Option Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. The following eight-
semester plan refers to additional B.A. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.


University/State Core Fine Arts or Humanities 3 requirement
University/State Core Social Science requirement
CHEM 2263 Analytical Chemistry Lecture
\& CHEM 2261L Analytical Chemistry Laboratory ${ }^{1}$
Select one of the following:
PHYS 2074 University Physics II (ACTS
Equivalency = PHYS 2044 Lecture) ${ }^{1}$
PHYS 2033 College Physics II (ACTS
Equivalency = PHYS 2024 Lecture)
\& PHYS 2031L College Physics II Laboratory
$(\text { ACTS Equivalency = PHYS } 2024 \text { Lab })^{1}$
Biology Elective 3
University/State Core Humanities or Fine Arts 3
requirement (as needed)
University/State Core Social Science requirement 3
Year Total: 17
$\begin{array}{lrr}\text { Third Year } & \begin{array}{r}\text { Units } \\ \text { Spring }\end{array} \\ \text { CHEM } 3703 \text { Organic Chemistry I Lecture for } & 5 & \end{array}$
Chemistry Majors
\& CHEM 3702L Organic Chemistry I Lab for

General Elective
Year Total:

| Fourth Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| CHEM 3813 Elty ${ }^{1,2}$ | 3 |  |

## Total Units in Sequence:

${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations on page 131 of this chapter
${ }^{2}$ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations on page 131 of this chapter.
${ }^{3}$ Depending on placement; MATH 2043 Survey of Calculus is another option. Student may also choose to take MATH 1284C Precalculus in Fall Semester Year 1 and MATH 2554 Calculus in Spring Semester Year 1. Another option is to complete MATH 1203 in Fall Semester 1 and MATH 2043 Survey of Calculus in Spring Semester Year 1.

## Requirements for a Minor in Chemistry

| CHEM 2263 | Analytical Chemistry Lecture | 4 |
| :--- | :--- | ---: |
| \& CHEM 2261L | and Analytical Chemistry Laboratory |  |
| CHEM 3603 | Organic Chemistry I | 4 |
| \& CHEM 3601L | and Organic Chemistry I Laboratory |  |
| CHEM 3613 | Organic Chemistry II | 4 |
| \& CHEM 3611L | and Organic Chemistry II Laboratory |  |
| CHEM 3453 | Elements of Physical Chemistry | 3 |
| A course at the | 3000-4000 level. | 3 |

## Total Hours

A student must notify the department of his or her intent to minor.
Requirements for Departmental Honors in Chemistry: Students with good academic backgrounds and strong interests in research are encouraged to participate in the department of chemistry and biochemistry honors program. Entrance into the program is normally during the sophomore year or the first semester of the junior year, and a minimum cumulative GPA of 3.5 is required. Entrance is initiated by consulting the faculty academic adviser, who will help arrange conferences with potential faculty research project advisers. When there is agreement between the student and the adviser on a research project or area, an Honors Advisory Committee is set up to supervise the honors candidate's program. The heart of the program is the research project, but students are encouraged to broaden their experience beyond required courses within chemistry, the natural sciences, the social sciences, and the humanities. Participation in Honors Colloquia, honors sections of regular courses, and chemistry departmental and divisional seminars is especially recommended. All honors candidates enroll in the spring semester Honors Seminar (CHEM 4011H), and senior honors students must make at least one seminar presentation. All honors candidates will be required to complete and defend an honors thesis and take 12 hours (which may include 6 hours of thesis) in Honors Studies. The thesis is required in the spring semester of the senior year, followed by an oral presentation. On the basis of these written and oral reports and their evaluation of all aspects of the student's honor program, the candidate's Honors Advisory Committee will recommend whether or not the distinction "Chemistry or Biochemistry Scholar Cum Laude" should be awarded. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Chemistry Teacher Licensure Requirements:

Students interested in pursuing a minor in STEM Education or Secondary Teacher Licensure in mathematics, biology, chemistry, physics, or computer science at the undergraduate level should consult with a STEM Education faculty adviser, teach@uark.edu. Another option to
obtain secondary teacher licensure is to complete the one-year Master of Arts in Teaching (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/ mathematicalsciencesmasc/graduatecatalog/programsofstudy/ teachereducation/).

## Faculty

Adams, Paul D., Ph.D. (Case Western Reserve University), B.S. (Louisiana State University), Professor, 2006, 2021.
Allison, Neil T., Ph.D. (University of Florida), B.S. (Georgia College), Associate Professor, 1980.
Brewer, Lorraine C., M.S. (University of Wisconsin-Madison), Instructor, 1997.

Chen, Jingyi, Ph.D. (University of Washington), M.A. (State University College at Buffalo), B.S. (Zhongshan University), Professor, 2010, 2019.
Chevrier, Vincent Francois, Ph.D. (CEREGE, Aix-en-Provence, France),
M.E.S. (University Paris VII), B.S. (Academy of Versaille, France), Research Associate Professor, 2005.
Coridan, Robert, Ph.D., M.S. (University of Illinois-Urbana-Champaign), B.S. (The Ohio State University), Associate Professor, 2015, 2021.

Dong, Bin, Ph.D. (lowa State University), B.S. (Xiamen University), Assistant Professor, 2022.
Edwards, Martin, Ph.D., M.Sc., M.Math. (University of Warwick), Assistant Professor, 2020.
Edwards, Martin, Ph.D., M.Sc., M.Math. (University of Warwick), Assistant Professor, 2020.
Fan, Chenguang, Ph.D. (lowa State University), B.S. (Nanjing University), Assistant Professor, 2016.
Fritsch, Ingrid, Ph.D. (University of Illinois-Urbana-Champaign), B.S. (University of Utah), Professor, 1992, 2005.
He, Maggie, Ph.D. (ETH Zürich), M.S. (University of Pennsylvania), B.S. (City College of New York), Assistant Professor, 2019.
Hershberger, Margaret, Ph.D., M.S. (University of Chicago), B.S. (The Ohio State University), Instructor, 2015.
Heyes, Colin David, Ph.D. (Georgia Institute of Technology), B.S. (Loughborogh University), Professor, 2008, 2021.
Kilyanek, Stefan M., Ph.D., M.S. (University of Chicago), B.S. (Grand Valley State University), Associate Professor, 2014, 2019.
Kohanek, Julia, Ph.D. and M.S. (University of Illinois Urbana-
Champaign), B.S. (University of Michigan), Instructor, 2019, 2022.
Lay, Jackson, Ph.D. (University of Nebraska-Lincoln), Professor, 2002.
Margaret, Hershberger, Ph.D., M.S. (University of Chicago), B.S. (The Ohio State University), Instructor, 2015.
Mazzanti, Christopher L., Ph.D., M.S. (University of Arkansas), B.S. (University of Arkansas at Monticello), Instructor, 2012.
McIntosh, Matt, Ph.D. (Pennsylvania State University), B.A. (Virginia Tech), Professor, 1996, 2011.
Millett, Francis, Ph.D. (Columbia University), B.S. (University of Wisconsin), Distinguished Professor, 1972, 2003.
Moradi, Mahmoud, Ph.D. (North Carolina State University), M.S., B.S.
(Sharif University of Technology), Associate Professor, 2015, 2021.
Norman, Mya A., Ph.D. (University of Colorado-Boulder), M.S., B.S. (University of Arkansas), Instructor, 2006.
Sakon, Joshua, Ph.D. (University of Wisconsin-Madison), B.S. (Southern Oregon University), Professor, 1997, 2016.
Stenken, Julie A., Ph.D. (University of Kansas), B.S. (University of Akron), Professor, 21st Century Chair of Proteomics, 2007.
Stites, Wesley, Ph.D. (Massachusetts Institute of Technology), M.A., B.A. (Johns Hopkins University), Professor, 1991, 2008.
Striegler, Susanne, Ph.D., M.S., B.S. (Ulm University, Germany),
Professor, 2012, 2015.

Thallapuranam, Suresh, Ph.D. (Osmania University), Professor, 2003, 2015.

Tian, Ryan, Ph.D. (University of Connecticut), B.S. (Fudan University, Shanghai), Associate Professor, 2004, 2010.
Wang, Feng, Ph.D. (University of Pittsburgh), Ph.D. (Kutztown University of Pennsylvania), B.S. (Peking University), Associate Professor, Charles E. and Clydene Scharlau Endowed Professor, 2012.

Wilkins, Charles L., Ph.D. (University of Oregon), B.S. (Chapman College), Distinguished Professor, 1998.
Zheng, Nan, Ph.D. (University of Michigan-Ann Arbor), M.S. (University of Rochester), B.S. (University of Science and Technology of China), Professor, 2008, 2021.

## Courses

CHEM 1051L. Chemistry in the Modern World Laboratory (ACTS Equivalency = CHEM 1004 Lab). 1 Hour.
Basic laboratory exercises involving measurements of mass and volume, acids and bases, hardness of water, energy content in fuel, sugar content in drinks, and radioactivity. Meets 2 hours per week. Corequisite: CHEM 1053. (Typically offered: Fall and Spring)
CHEM 1053. Chemistry in the Modern World (ACTS Equivalency = CHEM 1004 Lecture). 3 Hours.
The impact of chemical developments upon contemporary society. Chemical problems of ecological, environmental, nutritional, economic, and sociological concern. Designed for non-science majors. Lecture 3 hours per week. Corequisite: CHEM 1051L. (Typically offered: Fall and Spring)

CHEM 1071L. Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab). 1 Hour.
Laboratory exercises in principles and practices of Fundamental Chemistry. Corequisite: CHEM 1073. (Typically offered: Fall)
CHEM 1073. Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture). 3 Hours.
One-semester introductory-level general chemistry course introducing select fundamental concepts and related problem-solving for atomic and molecular structures, nomenclature, dimensional analysis, chemical reactions, chemical bonding, intermolecular forces, states of matter, solutions, acid-base reactions, redox reactions, kinetics, thermochemistry, and chemical equilibrium. Corequisite: CHEM 1071L and related course component drill section for CHEM 1073. (Typically offered: Fall and Summer)
CHEM 1101L. University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab). 1 Hour.
Laboratory exercises involving density, types of chemical reactions separations and chromatography, solubility, waters of hydration, freezing point depression, gas laws, and data interpretation. Meets 3 hours per week for 1 hour credit. Pre- or Corequisite: CHEM 1103. (Typically offered: Fall, Spring and Summer)
CHEM 1103. University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture). 3 Hours.
An introductory course for science, engineering or agriculture majors. Atomic structure, electron configurations and periodic properties, nomenclature and bonding in compounds, Lewis structure and resonance forms, molecular geometries and polarity, stoichiometry, solution chemistry and aqueous reactions, thermochemistry, gas laws and kinetic molecular theory. Corequisite: Drill component. Prerequisite: MATH 1203 or higher, or AP Calculus AB 3C or higher, or AP Calculus BC 4C or higher, or MATH 1203 CLEP 54 or higher, or UA Math Placement 46 or higher, or ACT MATH 22 or higher, or new SAT MATH 540/old SAT MATH 540 or higher. (Typically offered: Fall, Spring and Summer)

CHEM 1121L. University Chemistry II Laboratory (ACTS Equivalency $=$ CHEM 1424 Lab). 1 Hour.
Quantitative laboratory with data interpretation and exercises covering the topics of stoichiometry, thermodynamics, kinetics, chemical equilibrium, pH , and descriptive inorganic chemistry. Laboratory 3 hours per week. Upon completion of CHEM 1121L on the UAF campus with a grade of " C " or better, credit for CHEM 1101L can be requested. Corequisite: CHEM 1123 and related course component drill section for CHEM 1123. (Typically offered: Fall, Spring and Summer)
CHEM 1121M. Honors University Chemistry II Laboratory. 1 Hour.
Qualitative and quantitative laboratory with data interpretation and exercises covering the topics of stoichiometry, thermodynamics, kinetics, chemical equilibrium, pH , and descriptive inorganic chemistry. Laboratory notebooks are required as part of every experiment. Designed for students in the honors programs. Laboratory 3 hours per week. Corequisite: CHEM 1123H and related course component drill for CHEM 1123H. (Typically offered: Fall and Spring)
This course is equivalent to CHEM 1121L.
CHEM 1123. University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture). 3 Hours.
Introductory course for science, engineering or agriculture majors. Liquids, solids, intermolecular forces, phase diagrams, solution chemistry, solubility, colligative properties, chemical kinetics, chemical equilibria, acid-base equilibria, aqueous ionic equilibria, titrations, buffers, solubility equilibria, thermodynamics, electrochemistry, and nuclear chemistry. Lecture 3 hours per week. Corequisite: CHEM 1121L and related course component drill section for CHEM 1123. Prerequisite: CHEM 1103 (or CHEM 1203, or satisfactory performance on the chemistry proficiency exam) and MATH 1203 or higher, or AP Calculus AB 3C or higher, or AP Calculus BC 4C or higher, or MATH 1203 CLEP with a score of 54 or higher, or UA Math Placement 46 or higher, or ACT MATH 22 or higher, or new SAT MATH 540/old SAT Math 540 or higher. (Typically offered: Fall, Spring and Summer)
CHEM 1123H. Honors University Chemistry II. 3 Hours.
Presents the topics of periodicity, bonding, stoichiometry, thermodynamics, kinetics, and chemical equilibrium in detail. Lecture 3 hours per week. Students with satisfactory performance on the proficiency exam and who complete CHEM 1123H on the UAF campus with a grade of "C" or better can request credit for CHEM 1103. Pre- or Corequisite: MATH 1284C or higher. Corequisite: CHEM 1121M and related course component drill section for CHEM 1123H. Prerequisite: Honors candidacy and CHEM 1103 (or CHEM 1203, or satisfactory performance on the chemistry proficiency exam). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CHEM 1123.
CHEM 1201L. Chemistry for Majors I Laboratory. 1 Hour.
Laboratory exercises involving density, types of chemical reactions separations and chromatography, solubility, waters of hydration, freezing point depression, gas laws, and data interpretation. Laboratory notebooks are required as part of every experiment.Laboratory 3 hours per week. Students may not receive credit for both CHEM 1201L and CHEM 1101L. Corequisite: CHEM 1203 and related course component drill for CHEM 1203. (Typically offered: Fall)

## CHEM 1203. Chemistry for Majors I. 3 Hours.

The first half of a two-semester course designed especially for students planning to major in chemistry or biochemistry. Students may not receive credit for both CHEM 1203 and CHEM 1103. Corequisite: CHEM 1201L and related course component drill section for CHEM 1203. Prerequisite: MATH 1203 or higher, or AP Calculus AB 3C or higher, or AP Calculus BC 4C or higher, or MATH 1203 CLEP with a score of 54 or higher, or UA Math Placement 46 or higher, or ACT MATH 22 or higher, or new SAT MATH 540/old SAT MATH 540 or higher. (Typically offered: Fall)

CHEM 1221L. Chemistry for Majors II Laboratory. 1 Hour.
Qualitative and quantitative laboratory with data interpretation and exercises covering the topics of stoichiometry, thermodynamics, kinetics, chemical equilibrium, pH , and descriptive inorganic chemistry. Laboratory notebooks are required as part of every experiment. Laboratory 3 hours per week. Students may not receive credit for both CHEM 1221L and CHEM 1121L. Corequisite: CHEM 1223 and related course component drill for CHEM 1223. (Typically offered: Spring)
This course is equivalent to CHEM 1121L.

## CHEM 1223. Chemistry for Majors II. 3 Hours.

The second half of a two-semester course designed specifically for students planning to major in chemistry or biochemistry. Students may not receive credit for both CHEM 1223 and CHEM 1123. Pre- or Corequisite: MATH 1284C or higher. Corequisite: CHEM 1221L and related course component drill section for CHEM 1223. Prerequisite: CHEM 1203 and CHEM 1201L (or CHEM 1103 and CHEM 1101L). (Typically offered: Spring)
This course is equivalent to CHEM 1123.

## CHEM 2261L. Analytical Chemistry Laboratory. 1 Hour.

Covers techniques of classical and instrumental methods of chemical separation and analysis. Laboratory 4 hours per week. Chemistry Majors/Minors must take analytical lecture and lab prior to any physical chemistry course. Chemistry Majors/Minors should take analytical lecture and lab together. Pre- or Corequisite: CHEM 2263. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L) or (CHEM 1073 and CHEM 1071L) and MATH 1203 or higher, or AP Calculus AB 3C or higher, or AP Calculus BC 4C or higher, or CLEP College Algebra 54 or higher. (Typically offered: Fall and Spring)
CHEM 2263. Analytical Chemistry Lecture. 3 Hours.
Principles of chemical separations, analysis by classical and instrumental methods, and chemical equilibrium in physical and biological systems. Lecture 3 hours per week. Chemistry Majors/Minors must take analytical lecture and lab prior to any physical chemistry course. Chemistry Majors/Minors should take analytical lecture and lab together. Prerequisite: ((CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L) or (CHEM 1073 and CHEM 1071L)) and ((MATH 1203 or higher) or (AP Calculus AB 3C or higher) or (AP Calculus BC 4C or higher) or (MATH 1203 CLEP score of College Algebra 54 or higher) or (UA Math Placement 46 or higher) or (ACT MATH 22 or higher) or (old/ new SAT MATH of 540 or higher)). (Typically offered: Fall and Spring)
CHEM 2611L. Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab). 1 Hour.
A focus on properties of organic compounds as well as reactions of organic compounds with an emphasis on functional groups along with some classifications of certain types of compounds.Laboratory 3 hours per week. Corequisite: CHEM 2613 and related course component drill for CHEM 2613. (Typically offered: Fall, Spring and Summer)
CHEM 2613. Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture). 3 Hours.
One semester survey of organic chemistry necessary for understanding of biological systems, with some related physiological chemistry. Lecture 3 hours per week. Corequisite: CHEM 2611L and related course component drill section for CHEM 2613. Prerequisite: (CHEM 1073 and CHEM 1071L) or (CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L). (Typically offered: Fall, Spring and Summer)

## CHEM 3203. Forensic Chemistry. 3 Hours.

Survey of chemistry used in criminal investigations. Topics may include detection and identification of drugs, alcohol, toxins, explosives and gun powder residue. Chemical analysis of paint, ink, paper, soil, glass and fibers. Chemical detection of blood and fingerprints. Extraction of DNA from evidence, DNA fingerprinting. Prerequisite: CHEM 2613, or CHEM 3613 (recommended), or CHEM 3613H, or CHEM 3713. (Typically offered: Irregular)

CHEM 3273. Inquiry and Modeling in Science Education. 3 Hours.
Study of science practices with an emphasis on modeling and inquiry for learning/ teaching. Includes practical, philosophical, cognitive, and disciplinary specific dimensions of doing science in academic and nonacademic settings. Includes planning and implementing multiple scientific inquiries, engaging in reflective practices, writing and presenting scientific information. Safety issues are included. Corequisite: Drill component. Prerequisite: 8 hours of CHEM courses. (Typically offered: Spring)
This course is cross-listed with PHYS 3273, BIOL 3273.
CHEM 3451L. Elements of Physical Chemistry Laboratory. 1 Hour.
Experimental measurements of the physical properties, chemical systems, error analysis and report writing. Experiments cover topics in thermochemistry, heat capacity, chemical kinetics, spectroscopy, and phase/chemical equilibrium using a variety of physical chemistry techniques. Laboratory 3 hours per week. Corequisite: Chemistry majors and chemistry minors must enroll in CHEM 3453 concurrently. Prerequisite: CHEM 2261L and PHYS 2031L (or PHYS 2074). (Typically offered: Fall)

## CHEM 3453. Elements of Physical Chemistry. 3 Hours.

One semester accelerated course in physical chemistry primarily for students majoring/minoring in chemistry with biochemistry option, or pre-professional and agriculture students. Topics include thermodynamics, phase \& chemical equilibrium, chemical kinetics, quantum chemistry and spectroscopy. Presented at the same level as the 2-semester course with some recourse to calculus, although covering fewer topics in quantum chemistry. Lecture 3 hours per week. Students cannot earn credit for both CHEM 3453 and CHEM 3514. Corequisite: Chemistry majors and chemistry minors must enroll in CHEM 3451L concurrently. Prerequisite: CHEM 2263 and PHYS 2033 (or PHYS 2074), and MATH 2554 (or MATH 2043). (Typically offered: Fall)

## CHEM 3504. Physical Chemistry I. 4 Hours.

First semester of a 2-semester course in physical chemistry designed for chemistry majors and chemistry minors with topics covering wave-particle duality, quantum chemistry, atomic and molecular structure, bonding, spectroscopy and elementary statistical mechanics. Lecture and recitation 4 hours per week. Pre- or Corequisite: MATH 2564. Prerequisite: CHEM 2263 and PHYS 2074. (Typically offered: Fall)

## CHEM 3512L. Physical Chemistry Laboratory. 2 Hours.

Experimental studies of molecular structure, thermochemistry, and chemical kinetics, and the determination of other physicochemical properties of matter. Laboratory 8 hours per week. Students cannot earn credit for both CHEM 3451L and CHEM 3512L. Corequisite: Chemistry majors and chemistry minors must take CHEM 3514 concurrently. Prerequisite: CHEM 2261L and PHYS 2031L (or PHYS 2074). (Typically offered: Spring)
CHEM 3514. Physical Chemistry II. 4 Hours.
Second semester of a 2-semester course in physical chemistry aimed for B.S. chemistry majors/minors with topics covering the laws of thermodynamics, phase \& chemical equilibria; structure and properties of solutions, chemical potential, and chemical kinetics. Lecture and recitation 4 hours per week. Students cannot earn credit for both CHEM 3453 and CHEM 3514. Corequisite: Chemistry majors and chemistry minors must enroll in CHEM 3512L concurrently. Prerequisite: CHEM 3504. (Typically offered: Spring)

## CHEM 3601L. Organic Chemistry I Laboratory. 1 Hour.

Introduction to basic techniques for separation, purification, and identification of organic compounds. Laboratory exercises in organic chemistry. Meets 3 hours per week. Corequisite: CHEM 3603 and related course component drill for CHEM 3603. (Typically offered: Fall and Summer)

## CHEM 3602M. Honors Organic Chemistry I Laboratory. 2 Hours.

Introduction to basic techniques for separation, purification, and identification of organic compounds. Drill lecture-discussion (1hr/wk) and laboratory (4hr/wk). Writing component. Required drill. Corequisite: CHEM 3603H and related course component drill sections for CHEM 3603H and CHEM 3602M. Prerequisite: Honors candidacy. (Typically offered: Fall and Summer)
This course is equivalent to CHEM 3601L.

## CHEM 3603. Organic Chemistry I. 3 Hours.

Introduction to organic compounds including alkanes, haloalkanes, alkenes and alkynes; properties including basic stereochemistry and reactions including nucleophilic substitution, elimination, and electrophilic addition reactions. Lecture 3 hours per week. Corequisite: CHEM 3601L and related course component drill section for CHEM 3603. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L). (Typically offered: Fall and Summer)

## CHEM 3603H. Honors Organic Chemistry I. 3 Hours.

In-depth introduction to organic compounds; properties and reactions. Including alkanes, haloalkanes, alkenes and alkynes; nucleophilic substitution, elimination, and electrophilic addition reactions. Lecture 3 hours per week. Corequisite: CHEM 3602M and related course component drill sections for CHEM 3603H and CHEM 3602M. Prerequisite: Honors candidacy and ((CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L)). (Typically offered: Fall and Summer)
This course is equivalent to CHEM 3603.
CHEM 3611L. Organic Chemistry II Laboratory. 1 Hour.
Continuation of CHEM 3601L and introduction to basic techniques of synthesis, isolation, and determination of structure and reactivity of organic compounds. Laboratory exercises in organic chemistry. Meets 3 hours per week. Corequisite: CHEM 3613 and related course component drill for CHEM 3613. Prerequisite: CHEM 3601L. (Typically offered: Spring and Summer)

## CHEM 3612M. Honors Organic Chemistry II Laboratory. 2 Hours.

Continuation of CHEM 3602M and introduction to basic techniques of synthesis, isolation, and determination of structure and reactivity of organic compounds. Drill lecture-discussion (1 hour/wk) and laboratory (4 hours/wk). Writing component. Drill required. Corequisite: CHEM 3613H and related course component drill sections for CHEM 3612M and CHEM 3613H. Prerequisite: Honors candidacy and CHEM 3602M. (Typically offered: Spring and Summer)
This course is equivalent to CHEM 3611L.
CHEM 3613. Organic Chemistry II. 3 Hours.
Basic chemistry of aromatic and carbonyl compounds: properties and reactions. Lecture 3 hours per week. Corequisite: CHEM 3611L and related course component drill section for CHEM 3613. Prerequisite: (CHEM 3603 and CHEM 3601L) or (CHEM 3603H and CHEM 3602M) or (CHEM 3703 and CHEM 3702L). (Typically offered: Spring and Summer)

## CHEM 3613H. Honors Organic Chemistry II. 3 Hours.

In-depth coverage of the basic chemistry of aromatic and carbonyl compounds; properties and reactions. Lecture 3 hours per week.Corequisite: CHEM 3612M and related course component drill sections for CHEM 3613H and CHEM 3612M. Prerequisite: Honors candidacy and CHEM 3603H and CHEM 3602M. (Typically offered: Spring and Summer)
This course is equivalent to CHEM 3613.

## CHEM 3702L. Organic Chemistry I Lab for Chemistry Majors. 2 Hours.

Introduction to basic techniques for separation, purification, and identification of organic compounds. Drill lecture-discussion ( $1 \mathrm{hr} / \mathrm{wk}$ ) and laboratory ( $4 \mathrm{hr} / \mathrm{wk}$ ). Writing component. Required drill. Corequisite: CHEM 3703 and related course component drill sections for CHEM 3703 and CHEM 3702L. Prerequisite: Chemistry major or minor. (Typically offered: Fall)

CHEM 3703. Organic Chemistry I Lecture for Chemistry Majors. 3 Hours. In-depth introduction to organic compounds including alkanes, haloalkanes, alkenes and alkynes; properties including basic stereochemistry and reactions including nucleophilic substitution, elimination, and electrophilic addition. Lecture 3 hours per week. Corequisite: CHEM 3702L and related course component drill sections for CHEM 3703 and CHEM 3702L. Prerequisite: Chemistry major or minor and (CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L). (Typically offered: Fall)
This course is equivalent to CHEM 3603.
CHEM 3712L. Organic Chemistry II Lab for Chemistry Majors. 2 Hours.
Continuation of CHEM 3702L and introduction to basic techniques of synthesis, isolation, and determination of structure and reactivity of organic compounds. Drill lecture-discussion (1 hour/wk) and laboratory (4 hours/wk). Writing component. Drill required. Corequisite: CHEM 3713 and related course component drill sections for CHEM 3713 and CHEM 3712L. Prerequisite: Chemistry major or minor and CHEM 3702L. (Typically offered: Spring)

CHEM 3713. Organic Chemistry II Lecture for Chemistry Majors. 3 Hours. Continuation of in-depth coverage of the basic chemistry of the compounds of carbon. Properties and reactions of aromatic and carbonyl functional groups. Lecture 3 hours per week. Corequisite: CHEM 3712L and related course component drill sections for CHEM 3713 and CHEM 3712L. Prerequisite: Chemistry major or minor and CHEM 3703 and CHEM 3702L. (Typically offered: Spring)
This course is equivalent to CHEM 3613.

## CHEM 3813. Elements of Biochemistry. 3 Hours.

One semester survey course of the fundamentals of biochemistry. Structures, properties, and reactions of major classes of biomolecules. Basics of enzyme catalysis. Overview of metabolism. Credit for both CHEM 3813 and CHEM 4813H may not be counted toward a chemistry degree. Lecture 3 hours per week. Prerequisite: (CHEM 3613 and CHEM 3611L) or (CHEM 3613H and CHEM 3612M) or (CHEM 3713 and CHEM 3712L) or (CHEM 2613 and CHEM 2611L). (Typically offered: Fall, Spring and Summer)

CHEM 3923H. Honors Colloquium. 3 Hours.
Covers a special topic or issue. Offered as a part of the honors program.
Prerequisite: Honors candidacy. (Typically offered: Fall, Spring and Summer)
CHEM 400V. Chemistry Research. 1-4 Hour.
Research problems. Students need to enroll in their supervising faculty mentor's section. CHBC students conducting research under a faculty mentor outside of CHBC must enroll in the CHBC chair's section. Additionally, honors students need the approval of the CHBC department honors advisor. Honors students must complete thesis in senior year. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

CHEM 400VH. Honors Chemistry Research. 1-4 Hour.
Research problems. Students need to enroll in their supervising faculty mentor's section. CHBC students conducting research under a faculty mentor outside of CHBC must enroll in the CHBC chair's section. Additionally, honors students need the approval of the CHBC department honors advisor. Honors students must complete thesis in senior year. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to CHEM 400 V .

## CHEM 4011H. Honors Seminar. 1 Hour.

Research seminar for chemistry majors enrolled in the honors program. Enrollment is required the spring semester of the junior and senior years for honors students. Senior honors students must make one research presentation to graduate with honors. Prerequisite: Honors candidacy, chemistry major and junior or senior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## CHEM 405V. Special Topics in Chemistry. 1-4 Hour.

Potential topics include: advanced spectroscopic methods, bioanalytical chemistry, bioinorganic chemistry, bioorganic chemistry, biophysical chemistry, chemical sensors, drug discovery and design, nanomaterials, pharmaceutical chemistry, process analytical chemistry, and protein folding and design. (Typically offered: Irregular)

CHEM 4123. Advanced Inorganic Chemistry I. 3 Hours.
Reactions and properties of inorganic compounds from the standpoint of electronic structure and the periodic table. Emphasis on recent developments. Prerequisite: CHEM 3453 or CHEM 3514. (Typically offered: Fall)
CHEM 4211L. Instrumental Analysis Laboratory. 1 Hour.
Provides laboratory experience in parallel with the lecture material in CHEM 4213. Laboratory 3 hours per week. Corequisite: CHEM 4213. (Typically offered: Fall and Spring)

## CHEM 4213. Instrumental Analysis. 3 Hours.

Provides students, especially those in the agricultural, biological, and physical sciences, with an understanding of modern instrumental techniques of analysis. Lecture 3 hours per week. Corequisite: CHEM 4211L. Prerequisite: (CHEM 2263 and CHEM 2261L) and ((CHEM 3613 and CHEM 3611L) or (CHEM 3613H and CHEM 3612M) or (CHEM 3713 and CHEM 3712L)). (Typically offered: Fall and Spring)

## CHEM 4283. Energy Conversion and Storage. 3 Hours.

Fundamental and applied concepts of energy storage and conversion, with sustainability implications. Chemical reactions (kinetics, thermodynamics, mass transfer), emphasizing oxidation-reduction, electrochemical, and interfacial processes, and impact on performance of fuel and biofuel cells, batteries, supercapacitors, and photochemical conversion. Prerequisite: CHEM 1123 and PHYS 2074. (Typically offered: Fall Even Years)

CHEM 4723. Experimental Methods in Organic Chemistry. 3 Hours. Introduction to the application of synthetic and spectroscopic methods in organic chemistry, including mass spectrometry, infrared spectroscopy, and nuclear magnetic resonance spectrometry. Other laboratory techniques applicable to chemical research will be included. Lecture 3 hours and laboratory 3 hours per week. Lecture only meets the first half of the term. Laboratory meets the entire term. Corequisite: Lab component. Prerequisite: CHEM 3613 and CHEM 3611L, (or CHEM 3613H or CHEM 3612M), (or CHEM 3713 and CHEM 3712L). (Typically offered: Fall)
CHEM 4813H. Honors Biochemistry I. 3 Hours.
The first of a two-course series covering biochemistry for undergraduate students in biology, agriculture, and chemistry. Topics covered include protein structure and function, enzyme kinetics, enzyme mechanisms, and nucleic acid and carbohydrate structures. Credit cannot be earned in both CHEM 3813 and CHEM 4813H. Additional honors-level work required in this section. Prerequisite: Honors candidacy and (CHEM 3613 and CHEM 3611L) or (CHEM 3613H and CHEM 3612M) or (CHEM 3713 and CHEM 3712L). (Typically offered: Fall)
CHEM 4843H. Honors Biochemistry II. 3 Hours.
A continuation of CHEM 4813 H covering topics including biological membranes and bioenergetics, photosynthesis, lipids and lipid metabolism, nucleic acid structure, structure and synthesis, and molecular biology. Credit cannot be earned in both CHEM 3813 and CHEM 4843H. Additional honors-level work required in this section. Prerequisite: Honors candidacy and CHEM 4813H. (Typically offered: Spring)
CHEM 4853. Biochemical Techniques. 3 Hours.
Techniques for handling, purifying and analyzing enzymes, structural proteins, and nucleic acids. Lecture 1 hour, laboratory 6 hours per week. Corequisite: Lab component. Pre or Corequisite: CHEM 3813 or CHEM 4843H. (Typically offered: Spring)

## Classical Studies (CLST)

Daniel B. Levine
Chair of Studies
502 Kimpel Hall
479-575-2951
The Classical Studies Program offers a major leading to a Bachelor of Arts degree. The program also offers a minor in classical studies.

Classical studies are the oldest discipline in the humanities and will teach you a lot about why our world is the way it is. Based on the Greek and Latin literature, the Classics remain essential to many fields in the liberal arts, including the study of ancient art, architecture, history, mythology, and philosophy. Based on Greek and Latin literature, the program draws faculty from five different departments. In addition to Greek and Latin, courses are offered on various aspects of classical civilization. Study abroad options in Greek and Italy are available.

## Requirements for B.A. in Classical Studies with Ancient Languages Concentration

The following credit hour requirements must be met (see Degree Completion Program Policy for additional information). In addition, the Fulbright College Writing Requirement is satisfied by successful completion of CLST 4003H.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

State Minimum Core
Six credit hours in classical studies (CLST) courses numbered at the ..... 6
1000- or 2000-level
World language in Greek (GREK) or Latin (LATN) up to the ..... 9
Intermediate I level (2003-level)
CLST 4003H Honors Classical Studies Colloquium ..... 3
Concentration Requirements ..... 21
Any Fulbright College credit hours numbered 3000-level or higher ..... 3
Any UA-Fayetteville credit hours numbered at the 3000-level or higher 6
Any credit hours numbered at the 3000-level or higher, or any 2000-7
level credit hours that have a course prerequisite30
Total Hours ..... 120

## Requirements for Ancient Languages Concentration:

Nine credit hours in Greek (GREK) or Latin (LATN) world language courses numbered at the Intermediate II level (2013-level) or higher 12 credit hours numbered at the 3000-level or higher in Latin (LATN), 12 Greek (GREK), classical studies (CLST), or related courses from other areas. No more than six credit hours can be outside GREK/ LATN/CLST courses. ${ }^{1}$

## Total Hours

${ }^{1}$ Courses in other areas include: ARCH 2233, HIST 3003, HIST 3013, HIST 4003, HIST 4013, HIST 4023, HIST 4033, HIST 4043, HIST 4103, HIST 4113, and PHIL 4003.

## Requirements for B.A. in Classical Studies with Cultures, Reception and Digital Humanities Concentration

The following credit hour requirements must be met (see Degree Completion Program Policy for additional information). In addition, the Fulbright College Writing Requirement is satisfied by successful completion of CLST 4003H.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| State Minimum Core | 35 |
| :---: | :---: |
| Six credit hours in classical studies (CLST) courses numbered at the 1000- or 2000-level | 6 |
| World language in Greek (GREK) or Latin (LATN) up to the Intermediate I level (2003-level) | 9 |
| CLST 4003H Honors Classical Studies Colloquium | 3 |
| Concentration Requirements | 1 |
| Any Fulbright College credit hours numbered 3000-level or higher | 3 |
| Any UA-Fayetteville credit hours numbered at the 3000-level or higher | 6 |
| Any credit hours numbered at the 3000-level or higher, or any 2000level credit hours that have a course prerequisite | 7 |
| General Electives | 30 |
| Total Hours | 120 |
| Requirements for Cultures, Reception and Digital Humanities Concentration: |  |
| 21 credit hours in classical studies (CLST) courses or related courses in other areas. At least 18 credit hours must be numbered at the 3000 -level or higher. No more than six credit hours can be outside GREK/LATN/CLST courses. ${ }^{1}$ | 21 |

## Total Hours

${ }^{1}$ Courses in other areas include: ARCH 2233, HIST 3003, HIST 3013, HIST 4003, HIST 4013, HIST 4023, HIST 4033, HIST 4043, HIST 4103, HIST 4113, and PHIL 4003.

## Requirements for a Minor in Classical Studies:

Six credit hours in classical studies courses (CLST, GREK, or LATN) numbered at the 1000- or 2000-level.
12 credit hours numbered at the 3000 -level or higher in classical studies courses (CLST, GREK, or LATN) or related courses from other areas. No more than six credit hours can be outside CLST, GREK, or LATN courses. ${ }^{1}$

## Total Hours

${ }^{1}$ Courses in other areas include: HIST 3003, HIST 3013, HIST 4003, HIST 4013, HIST 4023, HIST 4033, HIST 4043, HIST 4103, HIST 4113, and PHIL 4003.

Requirements for Honors in Classical Studies: The Honors Program in Classical Studies gives students of high ability the opportunity to strengthen their study of classics by intensifying their experience with ancient languages and cultures.

In addition to the requirements for graduation with a major in classical studies and the general college requirements for a B.A. degree, honors candidates in classical studies must

1. Be accepted as honors candidates by the Classical Studies Committee,
2. Complete at least three semesters in a second classical language,
3. Enroll in at least two 1 -hour units of CLST 399VH and pursue independent-study topics under the guidance of classical studies faculty,
4. Enroll for two hours of CLST 399VH and write an honors thesis, and
5. Defend and discuss their entire honors program in an oral examination.

Successful completion of the requirements will be recognized by the award of the distinction "Classical Studies Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Faculty

Coon, Lynda L., Ph.D., M.A. (University of Virginia), B.A. (James Madison University), Professor, Department of History, 1990, 2013. Fredrick, David Charles, Ph.D. (University of Southern California), M.A., B.A. (University of Kansas), Associate Professor, Department of World Languages, Literatures and Cultures, 1991, 1997.
Levine, Daniel, Ph.D. (University of Cincinnati), B.A. (University of Minnesota), University Professor, Department of World Languages, Literatures and Cultures, 1980, 2016.
Muntz, Charles E., Ph.D. (Duke University), B.A. (Swarthmore College), Associate Professor, Department of History, 2008, 2018.
Reeber, Joy Elisabeth, Ph.D., M.A. (University of Wisconsin-Madison), B.A. (University of North Carolina), Teaching Assistant Professor, Department of World Languages, Literatures and Cultures, 2012, 2022.
Vennarucci, Rhodora, Ph.D., M.A. (State University of New York at Buffalo), B.A. (University of Michigan), Assistant Professor, Department of World Languages, Literatures and Cultures, 2013, 2017.

## Courses

CLST 1003. Introduction to Classical Studies: Greece. 3 Hours.
An introduction to the world of Ancient Greece, from the Trojan War to Alexander the Great. Progresses chronologically, focusing on the literary, artistic, political, and philosophical ideas of the Greeks. Who were they and how are we like them? (Typically offered: Fall Odd Years)
CLST 1003H. Honors Introduction to Classical Studies: Greece. 3 Hours. Honors. Prerequisite: Honors candidacy. (Typically offered: Fall Odd Years) This course is equivalent to CLST 1003.

## CLST 1013. Introduction to Classical Studies: Rome. 3 Hours.

A multi-faceted introduction to Roman culture, focusing on the literature, philosophy, architecture, history, art and archeology. Source material to be read in English. Lectures liberally illustrated with slides. (Typically offered: Spring Even Years)

CLST 2013. Sport in Ancient Greece and Rome. 3 Hours.
Explores the meaning of ancient sport in its Greek and Roman contexts as well as the reception and transformation of these cultural meanings in sports today. Includes a look at sports outside Western traditions, focusing especially on indigenous forms of sport in the Americas. Prerequisite: ENGL 1023 or equivalent. (Typically offered: Fall)

## CLST 2323. Greek and Roman Mythology. 3 Hours.

A study of the stories, figures, and motifs in the mythology of Greece and Rome. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Irregular)

CLST 3003. Special Topics in Classical Studies. 3 Hours.
Close examination of subject matter not presented in regularly offered CLST courses. May be repeated for different topics. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## CLST 3003H. Honors Special Topics in Classical Studies. 3 Hours.

Close examination of subject matter not presented in regularly offered CLST courses. May be repeated for different topics. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is equivalent to CLST 3003.

CLST 3013. Sex(uality) \& Gender in Ancient Greece and Rome. 3 Hours. Introduces the constructions and representations of love, sex, gender, and sexuality in ancient Greece and Rome by looking at their poetry, prose, and material culture.
Explores the diversity of ancient thought on these issues and compares ideas of love and desire to contemporary cultural views. (Typically offered: Irregular)

CLST 3013H. Honors Sex(uality) \& Gender in Ancient Greece and Rome. 3 Hours.
Introduces the constructions and representations of love, sex, gender, and sexuality in ancient Greece and Rome by looking at their poetry, prose, and material culture. Explores the diversity of ancient thought on these issues and compares ideas of love and desire to contemporary cultural views. Prerequisite: Honors standing. (Typically offered: Irregular)
This course is equivalent to CLST 3013.

## CLST 3023. Ancient Greek and Roman Theatre. 3 Hours.

Explains what went on in performance spaces, how such performances reflected the ideas and social constructs of the times, and what such observations can teach us about human interactions, history, and attitudes. (Typically offered: Irregular)
CLST 3033. Non-Binary Rome. 3 Hours.
Suspends the assumption of a binary Rome and explores the consequences for how we interpret Roman lives, using a wide range of evidence and theory to pursue the possibility of a non-binary Rome. Prerequisite: ENGL 1013 and ENGL 1023, or equivalent. (Typically offered: Irregular)

## CLST 399VH. Honors Course Classical Studies. 1-6 Hour.

CLST honors thesis projects or CLST honors study abroad programs. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

## CLST 4003H. Honors Classical Studies Colloquium. 3 Hours.

Covers a special topic or issue in classical studies. Appropriate for honors program students and students pursuing classical studies. May be repeated when the content is changed. Prerequisite: Junior standing. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

## CLST 4413. Greek Art and Archaeology. 3 Hours.

Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.) from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. (Typically offered: Spring; Summer Odd Years)
This course is cross-listed with ARHS 4413.

## CLST 4413H. Honors Greek Art and Archaeology. 3 Hours.

Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.) from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. (Typically offered: Spring; Summer Odd Years)
This course is cross-listed with CLST 4413, ARHS 4413.

## CLST 4423. Roman Art and Archaeology. 3 Hours.

Roman Art and Archaeology focuses on how visual and material culture shaped and were shaped by Roman society (religion, politics, economy, gender, ethnicity, etc.) from the Iron Age through the Late Antique period. We encounter famous masterpieces, but also the material remains of everyday Romans in civic and domestic spaces. (Typically offered: Spring and Summer Even Years) This course is cross-listed with ARHS 4423.

## Communication (COMM)

Robert M. Brady

Chair of the Department
417 Kimpel Hall
479-575-3046
Communication Department Website (https://fulbright.uark.edu/ departments/communication/)

The Department of Communication offers a major leading to the Bachelor of Arts degree in communication as well as a minor in communication.

As a subject for academic study, communication bridges the humanities and the social sciences. It focuses on all forms and modes of communication and its consequences for individuals, groups, organizations, communities, and cultures. Our program of study applies communication theory and principles to a wide variety of settings, including interpersonal relationships, business and political systems, cultural interaction and communication technologies.

Communication students may concern themselves with the dynamics of persuasion, media technologies, gender roles, the family, organizational structures, cultural myths, and rhetoric. Because the program offers many diverse interests, there is a place for anyone with a genuine curiosity about human communication and its effect upon society.

The Department of Communication offers courses in five principal areas of study, though students can also choose to follow a broad range of courses across these areas:

- Film studies
- Interpersonal communication
- Mediated communication
- Organizations and communities
- Rhetoric and public communication

Communication majors from recent graduating classes now hold positions in government and public affairs, business, public relations, non-profit organizations, education, and media. Many others successfully pursue further education in graduate and professional schools.

Admission Requirements for a Major in Communication: For standing as a major, entering freshmen must have ACT composite scores of 20 or higher, and those transferring into the program after the first semester of college study must have a cumulative grade-point average of 2.00 or higher.

University and College Requirements for a Major in Communication: In addition to the university/state core requirements (http:// catalog.uark.edu/undergraduatecatalog/academicregulations/ universitycore/) and the Fulbright College of Arts and Sciences Graduation Requirements (see under College Academic Regulations and Degree Completion Policy (p. 273)), the following course requirements
must be met. Bolded courses from the list below may be applied to portions of the University/state minimum core requirements.
University/State Core Requirements
Select one of the following:

| MATH 2053 | Finite Mathematics |
| :--- | :--- |
| MATH 2183 | Mathematical Reasoning in a Quantitative World * |
| STAT 2303 | Principles of Statistics (ACTS Equivalency $=$ MATH <br>  | | 2103) |
| :--- |

Other 2000-level MATH courses can be accepted. (Check with your adviser for details.)
*These courses are highly recommended.
3-6 hours - Completion of a world language course at the 2003 Intermediate I level is preferred. (This is usually accomplished through completion of a sequence of two language courses: 1013 and 2003.) Alternatively, 6 hours of courses from a single culture or world region including African, Asian, European, Latin American and Latino, or Middle Eastern and Islamic may be used to fulfill this requirement. Courses must be approved by a departmental adviser.

## 36 hours - Communication courses:

*Two required courses (completed with a grade of C or higher)

| COMM 1313 | Public Speaking (ACTS Equivalency $=$ SPCH |
| :--- | :--- |
|  | 1003 ) |

COMM 2333 Introduction to Communication Research *
*At least two of the following introductory courses (completed with a 6 grade of C or higher):

| COMM 1003 Basic Course in the Arts: Film Lecture |  |  |
| :---: | :---: | :---: |
| COMM 2323 Interpersonal Communication |  |  |
| COMM 2343 Introduction to Small-Group Communication |  |  |
| COMM 2353 Argumentation and Advocacy |  |  |
| COMM 2813 Introduction to Mediated Communication |  |  |
| 3 hours of communication elective (numbered 2000 or higher) |  |  |
| 3000 or 4000-level COMM electives ${ }^{1,2}$ |  |  |
| 40 hours - Electives |  |  |
| Advanced Electives |  |  |
| General Electives |  | 21 |
| Total Hours |  | 12 |

Communication courses that may satisfy the college or University Core requirements will not count toward the communication electives. To graduate, students must have a cumulative grade-point average of 2.00 or above within the major.
${ }^{1}$ Meets 40-hour advanced credit hour requirement. See College Academic Requirements (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/).
2 Meets 24-hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/).

Writing Requirement: The college writing requirement may be satisfied by a research paper achieving a grade of " $C$ " or better submitted for an upper-division communication class and approved by the chair of the department.

## Communication B.A. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.


| World language course 2003 (or world culture course) | 3 |  |
| :---: | :---: | :---: |
| COMM 2333 Introduction to Communication Research (Sp, Fa) or choose one COMM introductory course: COMM 2323, 2343, 2353, 2813 |  | 3 |
| COMM Elective (2000 or above) ${ }^{1}$ |  | 3 |
| Social Science university/state core requirement |  | 3 |
| Science university/state core lecture with corequisite lab requirement |  | 4 |
| General Elective |  | 3 |
| Year Total: | 16 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| 3000 or 4000 -level COMM elective ${ }^{1,2}$ | 3 |  |
| 3000 or 4000 -level COMM elective ${ }^{1,2}$ | 3 |  |
| Advanced Level Elective ${ }^{1}$ | 3 |  |
| General Elective | 6 |  |
| 3000 or 4000 -level COMM elective ${ }^{1,2}$ |  | 3 |
| 3000 or 4000-level COMM elective ${ }^{1,2}$ |  | 3 |
| Advanced Level Elective ${ }^{1}$ |  | 3 |
| General Electives |  | 6 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| 3000 or 4000 -level COMM elective ${ }^{1,2}$ | 3 |  |
| 3000 or 4000-level COMM elective ${ }^{1,2}$ | 3 |  |
| 3000 or 4000 -level elective ${ }^{1}$ | 3 |  |
| Advanced Level Elective ${ }^{1}$ | 3 |  |
| Advanced Level Elective (as needed) ${ }^{1}$ | 3 |  |
| 3000 or 4000-level COMM elective ${ }^{1,2}$ |  | 3 |
| 3000 or 4000-level COMM elective or General Elective ${ }^{1,2}$ |  | 3 |
| 3000 or 4000-level Fulbright College elective ${ }^{1,2}$ |  | 3 |
| Advanced Level Elective (as needed) or General Elective ${ }^{1}$ |  | 3 |
| General Elective |  | 1 |
| Year Total: | 15 | 13 |

## Total Units in Sequence:

1 Meets 40-hour advanced credit hour requirement. See College Academic Regulations (p. 273).
2 Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations (p. 273).

Requirements for a Minor in Communication: 21 hours including at least 12 hours must be numbered 3000 or above. A student should consult with an adviser in the department for appropriate courses.

Requirements for Honors in the Department of Communication: The Honors Program in communication gives an opportunity for a student
to achieve an additional level of intellectual growth and a satisfaction of accomplishment. A student engages in independent research and writing, under the supervision of a member of the communication faculty, and participates in special honors classes, seminars, and colloquia.

Faculty recognize outstanding achievement by a student by recommending that the bachelor's degree in communication be awarded with the distinction "Communication Scholar Cum Laude." Higher distinctions may be awarded to truly outstanding students based upon the whole of their academic program and quality of honors research.

To enter the Honors Program, a student must possess a 3.5 minimum grade-point average on all academic work and receive the recommendation of a faculty member in communication to the Honors Council of Fulbright College. A student may pursue an independent research program of a historical, critical, descriptive, or experimental nature, within any of the areas of rhetorical or communication theory, history of public address, interpersonal, small-group, or organizational communication, persuasion, argumentation, political communication, freedom of speech, communication education, or in any closely related areas of inquiry. A student interested in mass communications, broadcasting, or film may choose to pursue either a research project or a creative study. In addition to satisfying the general college and departmental requirements for a bachelor's degree, a student must satisfy departmental honors requirements, which include the following:

1. Become an honors candidate no later than the junior year of study. Students are encouraged to establish honors candidacy as early as possible.
2. Enroll in COMM 3991 H no later than the junior year of study.
3. Enroll in COMM 499VH a minimum of one hour of credit each semester after the completion of COMM 3991 H and until completion of the honors thesis,
4. Achieve a 3.5 minimum grade-point average in communication,
5. Complete 12 hours (which may include 6 hours of thesis) in Honors Studies, and
6. Write and successfully defend before a faculty examining committee a thesis based on the investigative or creative project undertaken in COMM 499VH.

For a full description of the Honors Program and its requirements, consult with the Undergraduate Director in the Department of Communication.

## Communication (B.A.) Drama/Speech Teacher Licensure

Requirements: Please refer to the Secondary Education Requirements
(p. 276) for Fulbright College Students in the "Other Programs" section of the page.

## Faculty

Aloia, Lindsey S., Ph.D. (Pennsylvania State University), M.A. (University of Delaware), B.A. (College of New Jersey), Associate Professor, 2015.
Amason, Trish, Ph.D. (Purdue University), M.A. (University of Kentucky), B.S.E. (University of Arkansas), Associate Professor, 1994, 2000.

Bradley, Amy, M.A.T. (John Brown University), M.A. (University of Arkansas), B.B.A. (Northeastern State University), Instructor, 2020.
Brady, Laurie, M.A., B.A. (University of Arkansas), Instructor, 1995.
Brady, Robert M., Ph.D. (University of Michigan-Ann Arbor), M.A. (Western Kentucky University), B.S. (Murray State University), Associate Professor, 1979.
Branton, Scott, Ph.D. (University of Missouri), M.A. (Western Kentucky University), M.S.W., B.S.W. (Florida State University), Assistant Professor, 2023.

Butcher, Margaret, Ph.D. (University of Missouri), M.A., B.S. (Arkansas State University), Teaching Assistant Professor, 2016.
Catron-Ping, Peggy Lee, Ed.D. (University of Arkansas), M.T.S. (Phillips Theological Seminary), M.A. (Missouri State University), B.A. (Central Bible College), Instructor, 2004.
Corrigan, Lisa, Ph.D., M.A. (University of Maryland-College Park), B.A. (University of Pittsburgh), Professor, 2007, 2019.
Denison, Sarah, M.A. (University of Arkansas), B.S. (University of Texas at Tyler), Instructor, 2007.
Dionne, Terrell Jake, Ph.D. (University of Colorado), M.A. (Syracuse University), B.A. (University of North Texas), Assistant Professor, 2020.
Ekhalid, Amnee, Ph.D. (University of Missouri), M.S. (University of North Texas), B.A. (University of North Texas), Assistant Professor, 2023. Gliszinski, Ryan, M.A., B.A. (University of Arkansas), Instructor, 2018. Hatfield, Joe, Ph.D. (University of Colorado), M.A. (Syracuse University), B.A. University of North Texas), Assistant Professor, 2020.

Jennings, Freddie, Ph.D. (University of Missouri), M.A., B.A. University of Arkansas), Teaching Assistant Professor, 2018.
Jones, Ringo, M.F.A. (Miami University), B.A. (Northern Kentucky University), Assistant Professor, 2020.
Khan, Abraham, Ph.D. (University of Minnesota), M.A., B.A (Florida State University), Assistant Professor, 2022.
Knies, Cambry, M.A., B.A. (University of Arkansas), Instructor, 2020.
Lambert, Lauren, M.A., B.A. (Missouri State University), Instructor, 2020.
Leach, Rebecca, Ph.D. (Arizona State University), M.S. (Texas Christian University), B.A. (University of Montevallo), Assistant Professor, 2022. Lee, Joomi, Ph.D. (Michigan State University), M.A. (Indiana University), B.A. (The Catholic University of Korea), Assistant Professor, 2023.

Liles, Alex, M.A., B.A. (University of Arkansas), Instructor, 2014.
Mensah, Angela, Ph.D. (Bowling Green State University), M.A. (Western Michigan University), B.A. (Ferris State University), Teaching Assistant Professor, 2022.
Mobley, Veronica, M.A., B.A. (University of Arkansas), Instructor, 2021.
Morris, John, M.A. (University of Arkansas), B.A. (University of Central Arkansas), Instructor, 2021.
Neville-Shepard, Meredith D., Ph.D. (University of Kansas), M.A. (University of Kansas), B.A. (Furman University), Assistant Professor, 2016.

Neville-Shepard, Ryan M., Ph.D. (University of Kansas), M.A. (University of Kansas), B.A. (Bates College), Associate Professor, 2016.
Scheide, Frank Milo, Ph.D. (University of Wisconsin-Madison), M.A.
(New York University), B.S. (University of Wisconsin-River Falls), Professor, 1977, 2008.
Schulte, Stephanie Ricker, Ph.D., M.A. (George Washington University), B.A. (University of Arkansas), Professor, 2008.

Spialek, Matthew L., Ph.D. (University of Missouri), M.S., B.S. (Illinois State University), Associate Professor, 2016.
Suggs, Hannah Gant, M.A., B.A. (University of Arkansas), Instructor, 2018.

Walker, Kasey, Ph.D., M.A. (Purdue University), B.S. (Trinity University), Teaching Assistant Professor, 2006.
Warren, Ron, Ph.D. (Indiana University), M.A. (Colorado State University), B.A. (Michigan State University), Associate Professor, 1997, 2003.

Wicks, Robert Howard, Ph.D. (Michigan State University), M.A.
(University of Missouri-Columbia), B.A. (American University), Professor, 1994, 2006.

## Courses

COMM 1003. Basic Course in the Arts: Film Lecture. 3 Hours.
Introduction to film as entertainment and art. How to look at film through a study of composition, lighting, editing, sound and acting. Lectures and viewing time. (Typically offered: Fall, Spring and Summer)
COMM 1003H. Honors Basic Course in the Arts: Film Lecture. 3 Hours.
Introduction of film as entertainment and art. How to look at a film through a study of composition, lighting, editing, sound and acting. Lectures and viewing time.
Corequisite: Drill component. (Typically offered: Fall)
This course is equivalent to COMM 1003.
COMM 1023. Communication in a Diverse World. 3 Hours.
Introductory course that focuses on the skills and understandings associated with competent communication in a diverse society within interpersonal, group, organizational and intercultural communication contexts. (Typically offered: Fall and Spring)
COMM 1023H. Honors Communication in a Diverse World. 3 Hours.
Introductory course that focuses on the skills and understandings associated with competent communication in a diverse society within interpersonal, group, organizational and intercultural communication contexts. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to COMM 1023.
COMM 1233. Media, Community and Citizenship. 3 Hours.
Examines theory and research on how messages are processed, meanings constructed, communities formed and maintained through interaction with the media. Focus is on critical citizenship and media literacy in the context of the cognitive, social, cultural, political, and economic consequences of increasingly networked media systems. (Typically offered: Fall and Spring)

COMM 1233H. Honors Media, Community and Citizenship. 3 Hours.
Examines theory and research on how messages are processed, meanings constructed, communities formed and maintained through interaction with the media. Focus is on critical citizenship and media literacy in the context of the cognitive, social, cultural, political, and economic consequences of increasingly networked media systems. Prerequisite: Honors standing. (Typically offered: Spring) This course is equivalent to COMM 1233.
COMM 1313. Public Speaking (ACTS Equivalency = SPCH 1003). 3 Hours.
Application of the communication techniques needed to organize and deliver oral messages in a public setting. Emphasis given to theory and practice of message strategies and preparation, audience analysis, presentational skills including multimedia support, speech criticism, and the listening process. (Typically offered: Fall, Spring and Summer)

## COMM 1313H. Honors Public Speaking. 3 Hours.

Application of the communication techniques needed to organize and deliver oral messages in a public setting. Emphasis given to theory and practice of message strategies and preparation, audience analysis, presentational skills including multimedia support, speech criticism, and the listening process. (Typically offered: Fall, Spring and Summer)
This course is equivalent to COMM 1313.

## COMM 2103. Interviewing. 3 Hours.

A study in the theory and practice of methods in selected interview settings, with an emphasis on interviewing through research, journalism, employment, and historical perspectives. (Typically offered: Fall)

COMM 2303. Advanced Public Speaking. 3 Hours.
Continuing study of the invention and adaptation or oral discourse to the needs of listeners. Consideration of the problems of communication in platform presentation. Prerequisite: COMM 1313. (Typically offered: Fall, Spring and Summer)

## COMM 2323. Interpersonal Communication. 3 Hours.

Personal and interpersonal factors affecting communication in everyday life. Emphasis upon ways in which interpersonal perception, physical environment, semantic choices, and nonverbal cues affect communication primarily in the context of work, family, and other personal experiences. (Typically offered: Fall, Spring and Summer)

COMM 2333. Introduction to Communication Research. 3 Hours.
Introduction to the basic assumptions underlying communication inquiry; resources for and methods of data collection in communication research; and techniques for organization, interpretation, reporting, and evaluation of communication research. (Typically offered: Fall and Spring)
COMM 2343. Introduction to Small-Group Communication. 3 Hours.
An introduction to procedures used in exchanging information, solving problems, determining policies, and resolving differences in committees and other small groups. Prerequisite: COMM 1313. (Typically offered: Fall, Spring and Summer)

## COMM 2353. Argumentation and Advocacy. 3 Hours.

An introduction to argumentation theory and practice, with concern for analyzing and producing logical, effective, and ethical public discourse. Examines contemporary models for analyzing argument, covers the common types of arguments and ways to evaluate their strengths and weaknesses, and introduces ways to test arguments for validity and fallacies. (Typically offered: Fall and Spring)
COMM 2613. Nonverbal Communication. 3 Hours.
Creates an understanding of the functions of nonverbal cues operating in human communication processes and develops familiarity with recent research in the field of nonverbal communication. (Typically offered: Irregular)

COMM 2813. Introduction to Mediated Communication. 3 Hours.
Introduction to media and media industries, particularly the social and cultural impact of their economic and regulatory structures. Emphasis on the historical development of media, business practices of media organizations, critical analysis of media messages, and cultural functions of the media. (Typically offered: Fall and Spring)
COMM 298V. Topics in Communication. 1-3 Hour.
Topics in communication not represented in other lower division courses.
Prerequisite: Completion of at least 3 hours of COMM coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## COMM 3153. Visual Communication. 3 Hours.

An examination of visual communication with emphasis on the understanding, manipulation, and effects of these messages on individuals and society. Explores visual messages in contexts such as film, television, advertising, social media, and the Internet by incorporating humanistic and social science theory and research. Prerequisite: COMM 2813. (Typically offered: Spring)
COMM 3173. Introduction to Linguistics. 3 Hours.
Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, and the history of linguistic scholarship. Prerequisite: Junior standing, COMM 1313 and COMM 2333. (Typically offered: Irregular)
This course is cross-listed with ENGL 3173, WLLC 3173.

## COMM 3253. The Latinx Image in Media. 3 Hours.

Exploration of the image and experience(s) of Latinx populations in the United States as represented in visual and print media, including film, television, news journalism, and art. Topics related to US Latinx history, culture, politics, and socioeconomics will be examined in the analyses of these mediated depictions. Prerequisite:
COMM 1003. (Typically offered: Irregular)
This course is equivalent to ENGL 3253.

COMM 3263. African Americans in Film. 3 Hours.
A survey of the history of images of African Americans in film, especially as these images are examined in the context of stereotypical renditions and/or realistic representations of African American experiences. Issues of African American history, culture, and socio-political context will be addressed in the analyses of these films. Prerequisite: COMM 1003. (Typically offered: Irregular)
This course is cross-listed with AAST 3263, ENGL 3263, JOUR 3263.
COMM 3273. African Americans in Documentary Film. 3 Hours.
Exploration of the African-American image and experience in the context of time, historical record and varying production viewpoints from diverse documentarians. African-American history, culture and socio-political context are addressed in the analyses of these documentary films from the perspectives of mainstream media, independent filmmakers and minority documentarians Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is cross-listed with JOUR 3273, AAST 3273.
COMM 3283. U.S. Latinos and Latinas through Film. 3 Hours.
This course will examine the portrayal of U.S. Latinos and Latinas in Hollywood films and how those images have changed over time. While coverage will extend to the early years of the twentieth century, the chosen films will place particular emphasis on the century's second half, from the Cold War to the modern day. (Typically offered: Spring)
This course is cross-listed with HIST 3283, LALS 3283.
COMM 3343. Contemporary Communication Theory. 3 Hours.
Study of the nature of the communication process as it is reflected in the individual, in interpersonal settings, in one-to-many situations, and in the mass media.
Prerequisite: COMM 2323. (Typically offered: Spring)
COMM 3373. Leadership Communication. 3 Hours.
An analysis of leadership as a discursive process, focusing on how leadership emerges and is enacted on a daily basis through communication-related behaviors. Prerequisite: COMM 2343 or permission of instructor. (Typically offered: Irregular)

## COMM 3383. Persuasion. 3 Hours.

Introduction to theories of persuasion with emphasis on application and effect. Prerequisite: COMM 1313 and COMM 2333, or instructor permission. (Typically offered: Fall, Spring and Summer)
COMM 3423. Science Fiction Film. 3 Hours.
This class concentrates on how science fiction in various communication media influences and is, in turn, influenced by broad features of cultural life. The class considers the impact of science fiction on science fact, the military, space travel, religion, race, gender, social class, education, politics, technology, and fashion styles. Prerequisite: COMM 1003. (Typically offered: Fall)

## COMM 3433. Family Communication. 3 Hours.

Study of the nature, functions, and management of communication patterns in the family. Focus is on understanding routine interpersonal interactions, conflict patterns, authority structures, and decision-making processes within the context of the contemporary family. Prerequisite: COMM 2323. (Typically offered: Fall)

COMM 3443. Introduction to Rhetorical Theory. 3 Hours.
Interpretive-critical study of rhetoric in public contexts. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Fall)

## COMM 3503. Popular Communication and Culture. 3 Hours.

This course is an introduction to basic theories and topics of Popular Communication and Culture studies. The course will emphasize understanding popular media communication forms. Prerequisite: COMM 2813. (Typically offered: Summer)

## COMM 3673. Mediated Communication. 3 Hours.

Focuses on media messages and their social/cultural effects. Includes a critical examination of media institutions and the ways they vie for audiences. Other topics include the ways people construct meaning from messages, media's influence on attitudes, media's role in cultural life, and audiences as critical consumers of media. Prerequisite: COMM 2813. (Typically offered: Fall)

## COMM 3703. Organizational Communication. 3 Hours.

An introduction to the theory, processes, and management of communication in organizations, with opportunities for simulated application. Prerequisite: COMM 2343. (Typically offered: Fall)

## COMM 3763. Health Communication. 3 Hours.

Examines communication within health care organizations and teams. Issues may include patient-provider communication, communication among health care professionals, negative consequences of poor communication in health care delivery, and the use of technology in health-related information dissemination and campaigns. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Fall)

COMM 3803. Survey of Social Media. 3 Hours.
Surveys research on social media, focusing on the potential cognitive, social, cultural, political, and/or economic consequences of social media and on strategies for engaging with and through social media to promote personal, social and civic goals. Pre- or Corequisite: COMM 2813. (Typically offered: Spring)

## COMM 3883. Rhetoric of Social Movements. 3 Hours.

Study of the functions of rhetoric as it appears in the context of social movements such as American independence, women's equality, civil rights, populism, and new conservatism. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Irregular)

## COMM 3923H. Honors Colloquium. 3 Hours.

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in communication). (Typically offered: Irregular) May be repeated for degree credit.

## COMM 3933. Special Topics in Film Studies. 3 Hours.

Topics in film studies which are not usually presented in depth in regular courses. Prerequisite: COMM 1003. (Typically offered: Irregular) May be repeated for degree credit.

COMM 3943. Special Topics in Interpersonal Communication. 3 Hours.
Topics in interpersonal communication which are not usually presented in depth in regular courses. Prerequisite: COMM 2323. (Typically offered: Irregular) May be repeated for degree credit.
COMM 3953. Special Topics in Mediated Communication. 3 Hours.
Topics in mediated communication which are not usually presented in depth in regular courses. Prerequisite: COMM 2813. (Typically offered: Irregular) May be repeated for degree credit.

## COMM 3963. Special Topics in Organizational Communication. 3 Hours.

Topics in organizational communication which are not usually presented in depth in regular courses. Prerequisite: COMM 2343. (Typically offered: Irregular) May be repeated for degree credit.

COMM 3973. Special Topics in Rhetoric and Public Communication. 3 Hours.
Topics in rhetoric and public communication which are not usually presented in depth in regular courses. Prerequisite: COMM 2353. (Typically offered: Irregular) May be repeated for degree credit.
COMM 3983. Special Topics. 3 Hours.
Communication topics which are not usually presented in depth in regular courses. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
COMM 3983H. Honors Special Topics. 3 Hours.
Communication topics which are not usually presented in depth in regular courses. Prerequisite: COMM 1313, COMM 2333 and honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to COMM 3983.

COMM 3991H. Honors Course in Communication Research. 1 Hour.
The Honors Course in Communication is the student's first step toward developing an honors thesis project. The course is designed to facilitate the exploration of potential thesis topics, selection of a viable study for the thesis, and the conceptualization of that study. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)

## COMM 4103. Communicating Body Image. 3 Hours.

This course examines the hidden assumptions about body image as it relates to the intersections of race, class, gender, and other major identity markers. This course is designed a) to facilitate the acquisition of systematic knowledge by applying theories to critically analyze media images and messages, b) to stimulate student interest in feminist media studies as an academic discipline, and c) to promote body neutrality of self and diverse others in a media-saturated society. Prerequisite: COMM 2813.
(Typically offered: Fall)
This course is cross-listed with AAST 4103.
COMM 4113. Legal Communication. 3 Hours.
Examines communication processes in the legal environment and focuses on communication skills and behaviors among judges, attorneys, litigants, and jurors. Particular attention will be given to verbal strategies and nonverbal messages related to interviews, negotiation, mediation, and litigation and to the rhetorical functions of legal pleadings and judicial opinions. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Irregular)

## COMM 4143. American Film Survey. 3 Hours.

A survey of major American film genres, major directors and films that have influenced the development of motion pictures. Prerequisite: COMM 1003 or permission of instructor. (Typically offered: Fall)
This course is cross-listed with ENGL 4143.
COMM 4283. Communication in Contemporary Society. 3 Hours.
An examination of research and theory on the process and effects of communication in modern society. Prerequisite: COMM 1313 and COMM 2333 or permission of instructor. (Typically offered: Irregular)

## COMM 4323. Communication and Conflict. 3 Hours.

Study of the processes, effects, and managements of communicative conflict, including a consideration of conflict styles, power, goals, tactics, assessment, selfintervention and third-party intervention. Prerequisite: COMM 2323 or permission of instructor. (Typically offered: Fall)

## COMM 4333. Communication and Gender. 3 Hours.

Study of the nature, construction, functions, and effects of gender and genderrole stereotypes related to verbal and nonverbal communication, small-group and organizational interaction, and mass mediated images in contemporary culture. Prerequisite: COMM 2323 or permission of instructor. (Typically offered: Fall)
COMM 4343. Intercultural Communication. 3 Hours.
Study of intercultural communication skills, intercultural issues and their impact at home and abroad, and cross-cultural comparisons of communication phenomena from a variety of theoretical perspectives. Prerequisite: COMM 2323. (Typically offered: Spring)

COMM 4353. American Public Address. 3 Hours.
Historical and critical study of the leading American speakers, their speeches, the issues with which they were identified. Lectures, discussion, reports, and critical papers. Prerequisite: COMM 1313 or COMM 2353 or instructor permission. (Typically offered: Irregular)

## COMM 4363. Gender, Race and Power. 3 Hours.

Examines how communication shapes gender, race, sexuality, and power. Rather than focusing exclusively on interpersonal communication, this course looks at theories of power that shape institutional macro communication. Prerequisite: COMM 2353. (Typically offered: Irregular)
This course is cross-listed with AAST 4863.

## COMM 4373. Political Communication. 3 Hours.

Study of the nature and function of the communication process as it operates in the political environment. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Spring Even Years)
This course is cross-listed with PLSC 4373.
COMM 4383. Rhetoric of the Modern American Presidency. 3 Hours.
A study of the increasing reliance of contemporary presidents on public persuasion through rhetorical discourse. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Irregular)

COMM 4393. Freedom of Speech: Cases \& Issues. 3 Hours.
Study of philosophy, cases, and issues relevant to the first amendment right to the free expression, with focus on issues relevant to internal security, obscenity, pornography, slander, and the regulation of communication. Prerequisite:
COMM 1313 and COMM 2333. (Typically offered: Irregular)
COMM 4423. Disaster and Risk Communication. 3 Hours.
Examines the role of public communication efforts across all phases of a disaster with an emphasis on the use of risk communication theory to inform disaster preparedness campaign message design and response to media inquiries immediately following disasters. Prerequisite: COMM 2343 or instructor consent. (Typically offered: Fall and Spring)

## COMM 4433. Community Resilience. 3 Hours.

Explores communication systems, community relationships, and strategic communication processes that constitute community resilience. Introduces various methodological approaches to assessing community resilience in order to develop communication-based interventions that promote belonging, transformative potential, and social capital. Prerequisite: COMM 2343 or instructor permission. (Typically offered: Fall)

## COMM 4613. Rhetoric of American Women. 3 Hours.

Examines the social and cultural assumptions that have limited the role of women in public communication. Focus is on the rhetorical biographies of selected women and their arguments on important social and political issues. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Irregular)
COMM 4633. History and Development of International Film I. 3 Hours.
A critical survey of international film as a distinctive art form and as a medium of expression and communication with attention given to films and cinema from its origins to 1975. Prerequisite: COMM 1003. (Typically offered: Irregular)
COMM 4643. Environmental Communication. 3 Hours.
Explores how communication is used by individuals, corporations, and governments to shape public debates about environmental issues. Topics include rhetorical strategies, the publics' right to information and input, dispute resolution techniques, advocacy campaigns, and green marketing. Prerequisite: COMM 1313 and COMM 2333 or permission of instructor. (Typically offered: Spring)
COMM 4653. International Film II. 3 Hours.
A critical survey of international film as a distinctive art form as a medium of expression and communication with attention given to films and cinema from 1976 to the present. Prerequisite: COMM 1003. (Typically offered: Irregular)

## COMM 4683. Documentary Film. 3 Hours.

A study and analysis of the documentary film as a discrete film form and as an important contribution to the international cinematic scene. Prerequisite: Advanced standing. Prerequisite: COMM 1003. (Typically offered: Fall)

## COMM 4733. Reel Women. 3 Hours.

An examination of films made for, about, and/or by women with the aim of better understanding and centralizing issues pertinent to women's daily lives. Prerequisite: COMM 1003. (Typically offered: Fall)

COMM 4743. Representational Issues in Film. 3 Hours.
An examination of the varying ways that race and ethnicity, gender, sexual orientation, gender identity, class, (dis)ability, and age are represented in and by film - both historically and culturally. Prerequisite: COMM 1003. (Typically offered: Spring)

## COMM 4763. Health Communication Campaigns. 3 Hours.

Canvasses the theoretical frameworks used in the conceptualization of communication campaigns focused on health information dissemination and the purposes these campaigns serve. Students participate in a service learning project by defining campaign goals; identifying, segmenting, and assessing target audiences; and designing messages for multi-mediated health campaigns. (Typically offered: Spring Odd Years)
COMM 4773. Treatment of Native Americans in Film. 3 Hours.
This course compares the treatment of Native Americans in film with how representatives of this group identify themselves. Particular attention is paid to how motion pictures focusing on Native Americans produced by indigenous filmmakers compare to treatments of this people produced by Hollywood and others. Prerequisite: COMM 1003 or instructor consent. (Typically offered: Irregular)
COMM 4803. Seminar in Social Media. 3 Hours.
This class encourages in depth examination of contemporary theory and research on the potential effects of social media on cognitive, social, cultural, political, affective, and economic structures. Focus is on critical thinking and contextualization of social media. Pre- or Corequisite: COMM 2813. (Typically offered: Spring Even Years)

## COMM 4823. Children and Media. 3 Hours.

An in-depth examination of children's use of media and the effects of media content on child and adolescent development. Topics may include violence and sex in media, commercialism, and new media. Prerequisite: COMM 2813. (Typically offered: Spring Odd Years)

COMM 4843. Computer-Mediated Communication. 3 Hours.
Provides an in depth consideration of the nature of computer-mediated communication by examining its use and effects in interpersonal, work, educational, and societal contexts. Prerequisite: COMM 2813 or instructor permission. (Typically offered: Spring)
COMM 4863. Seminar in Media. 3 Hours.
Research/discussion of contemporary issues in media. Emphasis on the economic and social impact of advertising, news, censorship, programs directed toward children, portrayals of women and minorities, future trends in media technologies, and analysis of the changing media landscape. Prerequisite: COMM 2813 or instructor permission. (Typically offered: Spring)

COMM 4873. International Communication and Globalization. 3 Hours.
Examines aspects of international communication and the impact of globalization on the production, dissemination, and consumption of media technology and messages. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Irregular) This course is cross-listed with INST 4873.
COMM 4883. Television and American Culture. 3 Hours.
Historical and critical study of how television shapes American culture and is shaped by it. Attention will be given to the study of television history, programs and audiences; particularly how race and gender shape content and reception of programming. Prerequisite: COMM 2813. (Typically offered: Fall)
COMM 490V. Special Problems. 1-6 Hour.
Credit arranged. Prerequisite: COMM 2333 and at least 9 hours of COMM coursework. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
COMM 4913. Internship in Communication. 3 Hours.
Internship in applied communication within public and private organizations. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## COMM 499VH. Honors Thesis. 1-3 Hour.

Honors thesis under the direction of a faculty member in the Department of Communication. Pre- or Corequisite: COMM 3991H. Prerequisite: Honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## Criminology (CRIM)

Shauna Morimoto
Department Chair
211 Old Main
479-575-3205
Department of Sociology and Criminology Website (https:// fulbright.uark.edu/departments/sociology/)

The Department of Sociology and Criminology offers a major leading to a Bachelor of Arts degree in criminology. The Criminology BA provides marketable skills and knowledge that relate to crime prevention, law enforcement, and the court system. The program in criminology is comprehensive, adding the skills in research, theory, and data analytics that prepare students beyond an understanding of criminal procedures or evidence. This major will educate students in the complexities of criminal behavior and familiarize them with the justice system processes and the causes, correlations and consequences of criminal behavior. The department offers robust undergraduate internship opportunities (https://fulbright.uark.edu/departments/sociology/internships/) that help criminology students develop a better understanding of a prospective career and determine whether their interests match a chosen career path, while simultaneously gaining experience with professionals in the field.

The department also offers a major in sociology (https://fulbright.uark.edu/ departments/sociology/), double major in criminology and sociology, a minor in sociology (https://fulbright.uark.edu/departments/sociology/ undergraduate-programs/minor-in-sociology.php) and a fully online minor in criminal justice (https://online.uark.edu/programs/minor-criminaljustice.php).

For requirements for an M.A. degree in sociology, with criminology concentration, see the Graduate School Catalog (http://catalog.uark.edu/ graduatecatalog/programsofstudy/sociologyandcriminologysoci/).

University and College Requirements for a Bachelor of Arts in Criminology: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/)), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the state minimum core requirements (p. 81).
State Minimum Core 35

Select one of the following: 3-4

| MATH 2043 | Survey of Calculus (ACTS Equivalency = MATH <br> 2203) |
| :--- | :--- |
| MATH 2053 | Finite Mathematics |
| MATH 2183 | Mathematical Reasoning in a Quantitative <br> World |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) |
| STAT 2303 | Principles of Statistics (ACTS Equivalency = <br> MATH 2103) |

World language up to the Elementary II level (1013) or higher

| CRIM 2003 | Introduction to Criminology and Criminal Justice (ACTS Equivalency = CRJU 1023) |  |
| :---: | :---: | :---: |
| SOCI 2013 | General Sociology (ACTS Equivalency = SOCI 1013) |  |
| CRIM 2043 | Sociology of Criminal Law |  |
| CRIM 3023 or SOCI 302 | Criminological Theory 2Triminological Theory |  |
| CRIM 3203 or SOCI 320 | Corrections and Social Control Corrections and Social Control |  |
| SOCI 3193 | Race, Class, Gender, and Sexuality |  |
| SOCI 3301L | Social Data and Analysis Laboratory |  |
| SOCI 3303 | Social Data and Analysis |  |
| SOCI 3313 | Social Research |  |
| 12 credit hours level or higher sociology (SOC | of criminology (CRIM) courses numbered 3000not taken above, six credit hours of which must be CI) or cross-listed with both CRIM/SOCI. |  |
| Any UA-Fayettev | ille credit hours numbered 3000-level or higher | 2 |
| Any credit hours n credit hours that | numbered 3000-level or higher or any 2000-level have a course prerequisite | 7 |
| General Electives |  | 30 |

Total Hours 120

For transfer students, a minimum of 18 hours of coursework in the major at the University of Arkansas is required.

Writing Requirement: To fulfill the Fulbright College writing requirement, each criminology major will submit, prior to graduation, a substantial research or analytical paper, with a grade of "A" or "B" from an upperdivision criminology course (3000-, 4000-, or 5000-level) to their departmental adviser. Satisfactory completion of an honors project or a senior thesis may fulfill this requirement.

## B.A. in Criminology Eight-Semester Degree Plan

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency <br> = ENGL 1013) (Satisfies General Education |  |
| Outcome 1.1) |  |
| Satisfies General Education Outcome 2.1: |  |
| MATH 1313 Quantitative Reasoning (ACTS |  |
| Equivalency = MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency = MATH 1103) <br> or any MATH or STAT course numbered higher <br> than MATH 1203 | 3 |

SOCI 2013 General Sociology (ACTS Equivalency
$=$ SOCI 1013) (Satisfies General Education
Outcomes 3.3, 4.1, and 4.2) ${ }^{1}$
World language at the Elementary I (1003) level or higher
State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2) ${ }^{1}$
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1) ${ }^{1}$
Select one course from the following:
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203)
MATH 2053 Finite Mathematics
MATH 2183 Mathematical Reasoning in a Quantitative World
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)
STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
World language at the Elementary II (1013) level or higher
State Minimum Core-Fine Arts (Satisfies General Education Outcome 3.1) ${ }^{1}$
General Elective
Year Total:

| Second Year | Fall |
| :--- | ---: |
| State Minimum Core—Science with corequisite lab | 4 |
| (Satisfies General Education Outcome 3.4) |  |
| State Minimum Core—Social Sciences (Satisfies |  |
| General Education Outcome 3.3) |  |

Third Year $\quad$ Fall

SOCI 3303 Social Data and Analysis 4
\& SOCI 3301L Social Data and Analysis
Laboratory
CRIM 3023 Criminological Theory
3
or SOCI 3023 Criminological Theory
SOCI 3193 Race, Class, Gender, and Sexuality
(Satisfies General Education Outcome 4.2) ${ }^{1}$

3 CRIM, SOCI, or cross-listed CRIM/SOCI electives numbered 3000-level or higher
State Minimum Core—Humanities (Satisfies 3
3-4 General Education Outcome 3.2) ${ }^{1}$
Any credit hours numbered 3000-level or higher
or any 2000-level credit hours that have a course
prerequisite
General Elective 3
Year Total: 16 15
Fourth Year

Fall | Units |
| ---: |
| Spring |

General Elective
6

| CRIM, SOCI, or cross-listed CRIM/SOCl electives <br> numbered 3000-level or higher | 6 |  |
| :--- | :---: | :---: |
| Fulbright College Writing Requirement (Satisfies <br> General Education Outcomes 1.2 and 6.1) |  |  |
| Any UA-Fayetteville credit hours numbered 3000- <br> level or higher | 2 |  |
| Any credit hours numbered 3000-level or higher <br> or any 2000-level credit hours that have a course <br> prerequisite <br> General Elective | 1 |  |
| CRIM, SOCI, or cross-listed CRIM/SOCI electives <br> numbered 3000-level or higher <br> General Elective <br> Year Total: | 6 | 3 |
| Total Units in Sequence: | 15 | 13 |

Any credit hours numbered 3000-level or higher or any 2000-level credit hours that have a course prerequisite
General Elective (Must complete a course that satisfies General Education Outcome 5.1) ${ }^{1}$
CRIM 3203 Corrections and Social Control

1 Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWv \%7C1000\&sdata=ZHBCul1Vytd
\%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWv \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks
$\% 3 D \& r e s e r v e d=0)$. Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.
${ }^{2}$ For additional details regarding the Fulbright College Writing Requirement, visit the department's webpage (https://fulbright.uark.edu/
departments/sociology/undergraduate-programs/ba-in-criminaljustice.php).

Requirements for a Minor in Criminal Justice: 18 semester hours in criminal justice and sociology to include CRIM 2003, CRIM 3023, SOCI 3313, and at least nine hours of 3000-level classes or above (no more than 3 hours may be SOCI ). A student must notify the department of her or his intent to minor.

Requirements for Departmental Honors in Criminology: The
Departmental Honors Program in Criminology is an upper-division course of study based on a topic in the area of criminology. To be eligible for criminology honors candidacy, students normally will have completed 28 semester hours and not more than 85 semester hours with a minimum cumulative grade-point average of 3.5 . They must take 12 hours (which may include 6 hours of thesis) in Honors Studies. The honors project may be an intensive study of a topic in criminology or an empirical research investigation. The candidate is expected to pass an oral examination given by an Honors Council Committee. Projects of extraordinarily high quality may be designated High Honors by the Committee. Successful completion of the requirements will be recognized by the award of the distinction Criminology Scholar cum laude at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Faculty

Adams, Douglas James, Ph.D., M.A. (University of Arizona), Associate Professor, 1995, 2002.
Allison, Kayla, Ph.D., (Indiana University-Bloomington), M.A. (University of Arkansas), B.A. (Indiana University-Bloomington), Assistant Professor, 2020.

Angton, Alexia, Ph.D., M.S., B.A. (lowa State University Ames), Assistant Professor, 2022.
Bustamante, Juan Jose, Ph.D. (Michigan State University), M.S., B.A. (University of Texas Pan American), Associate Professor, 2012, 2018.
Drawve, Grant R., Ph.D. (University of Arkansas at Little Rock), M.A., B.A. (Southern Illinois University), Associate Professor, 2016, 2021. Engen, Mindy Sue, Ph.D., M.A. (Pennsylvania State University), B.S. (Georgia State University), Professor, 2005, 2017.
Engen, Rodney L., Ph.D. (University of Washington), M.S., B.S. (University of Wisconsin-Milwaukee), Associate Professor, 2009.
Fitzpatrick, Kevin M., Ph.D. (State University of New York at Albany), M.A. (University of South Carolina at Columbia), B.A. (Susquehanna University), University Professor, Bernice Jones Chair in Community, 2005, 2014.
Gruenewald, Jeffrey A., Ph.D. (Michigan State University), Professor, 2019, 2022.
Harris, Casey Taggart, Ph.D., M.A. (Pennsylvania State University), B.S. (Texas A\&M University), Professor, 2011, 2023.
Holyfield, Lori C., Ph.D. (University of Georgia), M.A., B.S.E. (University of Arkansas), Professor, 1995, 2012.
Morimoto, Shauna, Ph.D., M.S. (University of Wisconsin-Madison), B.A. (University of Pittsburgh), Professor, 2008, 2023.
Niño, Michael D., Ph.D. (University of North Texas), M.A., B.S. (West Texas A\&M University), Assistant Professor, 2020.
Paez, Rocio Alejandra, Ph.D., M.A., B.A. (University of Arkansas at Little Rock), Teachinig Associate Professor, 2018, 2023.
Sabon, Lauren, Ph.D. (University of Tennessee-Knoxville), M.S/M.A. (Marshall University), B.S., B.A. (West Virginia University), Teaching Associate Professor, 2014, 2017.
Shields, Christopher A., Ph.D., J.D., M.A., B.A. (University of Arkansas), Teaching Associate Professor, 2003, 2017.

Thomas, Shaun A., Ph.D., M.A. (Louisiana State University), B.A. (University of Akron), Professor, 2015, 2023.
Worden, Steven K., Ph.D. (University of Texas at Austin), M.A., B.A. (Portland State University), Associate Professor, 1986.
Yang, Song, Ph.D., M.S. (University of Minnesota-Twin Cities), M.A. (Nankai University, China), B.A. (Branch College of Nankai, China), Professor, 2002, 2016.
Zajicek, Anna, Ph.D. (Virginia Polytechnic Institute and State University), M.S., B.S. (University of Silesia, Poland), Professor, 1994, 2006.

Zhang, Meredith, Ph.D., M.A. (The Ohio State University), B.A.
(Susquehanna University), Assistant Professor, 2022.

## Courses

CRIM 2003. Introduction to Criminology and Criminal Justice (ACTS Equivalency = CRJU 1023). 3 Hours.
Introduction to the field of criminology and the criminal justice system, including theories and patterns of criminal behavior, how criminal justice data are collected, social research methods, historical foundations of the field, institutions, and types of crimes and offenders. Provides a foundation for further criminological and theoretical studies. (Typically offered: Fall, Spring and Summer)
CRIM 2003H. Honors Introduction to Criminology and Criminal Justice. 3 Hours.
An introduction to the field history, development, and theoretical underpinnings of criminology and the criminal justice system, including theories aspects such as law enforcement, the courts, and patterns of criminal behavior, how criminal justice data are collected, social research methods, historical foundations of the field, institutions, and types of crimes and offenders. Provides a foundation for further criminological and theoretical studies. Prerequisite: Honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CRIM 2003.

## CRIM 2043. Sociology of Criminal Law. 3 Hours.

Explores the history of criminal law in the United States, the construction of crime and punishment, and issues facing the contemporary legal system. (Typically offered: Fall and Spring)
CRIM 2513. Criminal Investigation. 3 Hours.
Survey of the theories, concepts, and legal conditions concerning the techniques used in the location, preservation and presentation of evidence. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring)
CRIM 3011. Special Topics. 1 Hour.
Designed to develop the tools to write effectively in the social sciences, including skills related to organizing manuscripts, writing problem statements, identifying and synthesizing research, and revising and editing. Prerequisite: SOCI 2013 or CRIM 2003. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.
This course is cross-listed with SOCI 3011.
CRIM 3023. Criminological Theory. 3 Hours.
Advanced survey of theories of crime causation. Examines broad sociological paradigms, as well as both individual and aggregate-level explanations of crime causation. Applies criminological theories to contemporary issues associated with crime and criminal justice. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
CRIM 3023H. Honors Criminological Theory. 3 Hours.
Advanced survey of theories of crime causation. Examines broad sociological paradigms, as well as both individual and aggregate-level explanations of crime causation. Applies criminological theories to contemporary issues associated with crime and criminal justice. Prerequisite: SOCI 2013 and junior standing. (Typically offered: Fall and Spring)
This course is equivalent to CRIM 3023.

## CRIM 3043. The Police and Society. 3 Hours.

Overview of origins, theories, development, practice, and current issues in policing in contemporary society. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring)

CRIM 3053. Serial Crime. 3 Hours.
Historical development of criminal profiling in serial homicide, including sex crimes, stalking, and arson. Focuses on behavioral and criminological theory and a critical examination of different profiling methodologies. Prerequisite: SOCI 2013. (Typically offered: Irregular)
This course is cross-listed with SOCI 3053.
CRIM 3063. Victimology. 3 Hours.
Introduction to the scientific study of victimization. Examines conceptual boundaries of victimology research, covers theories, statistics and trends relevant to victimology, reviews the victim blaming and defending perspectives, explores practical applications of victimology, and the social, legal, and evaluates criminological issues that stem from concern over victims. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is cross-listed with SOCI 3063.
CRIM 3203. Corrections and Social Control. 3 Hours.
Overview of correctional systems and punishment. Focuses on theories of correctional philosophies, practices, and procedures, along with the historical development and modern practices of corrections, sentencing, facilities, and issues facing correctional populations. Examines principles and practices of treatment and rehabilitation. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring) This course is cross-listed with SOCI 3203.

CRIM 3413. Special Topics. 3 Hours.
Designed to cover specialized topics not usually presented in regular courses.
Prerequisite: SOCI 2013. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## CRIM 3413H. Honors Special Topics. 3 Hours.

Designed to cover specialized topics not usually presented in regular courses.
Prerequisite: Honors standing and SOCI 2013. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to CRIM 3413.

## CRIM 3443. Stratification and Crime. 3 Hours.

Examines how race, age, gender, social class, and geographic location impact criminal offending, victimization, and arrest. Subsequently, it explores how the criminal justice system stages of policing, sentencing, and incarceration further entrench or mitigate disparities across social strata group. Prerequisite: SOCI 2013. (Typically offered: Spring)

## CRIM 3453. Immigration and Crime. 3 Hours.

Provides a comprehensive foundation of the relationship between immigration, one of the most powerful forces that influences a nation's social fabric, and crime. Focuses not only on U.S. immigration but also crime in the global context. Prerequisite: SOCI 2013. (Typically offered: Fall)
This course is cross-listed with SOCI 3453.

## CRIM 3503. Criminal Procedures. 3 Hours.

Critical examination of how individual rights and police procedures are balanced with focus on arrests, use of force, identification, and search and seizure. Prerequisite: CRIM 2003. (Typically offered: Irregular)

CRIM 3513. Criminal Evidence. 3 Hours.
Examination of how evidence is collected, processed, and presented in court, with an emphasis on the competing interests of crime control and individual liberties.
Prerequisite: CRIM 2003. (Typically offered: Irregular)

## CRIM 3723. Deviant Behavior. 3 Hours.

Sociological overview of disconcerting conduct, its definition, theoretical understandings and research. Specific topics may include: interpersonal violence, self-destructive disorders, controversial lifestyles, substance abuse, as well as the relationship between inequality and disturbing acts. Prerequisite: SOCI 2013. (Typically offered: Irregular)
This course is cross-listed with SOCI 3723.

## CRIM 399VH. Honors Course. 1-6 Hour.

Undergraduate honors thesis hours designed to engage in advanced undergraduate research under the direction of a faculty advisor. Prerequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

CRIM 4003. Internship in Criminal Justice and Criminology. 3 Hours.
Supervised experience in municipal, county or state criminal justice agency, or any other agency which is approved by instructor. Prerequisite: CRIM 2003. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## CRIM 4013. SPECIAL TOPICS. 3 Hours.

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## CRIM 403V. Individual Study. 1-3 Hour.

In-depth individual or group study with a faculty member on advanced sociological readings and/or to participate in supervised research as an experience-based course. Faculty permission required in advance of enrollment. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## CRIM 4063. Organizations in Society. 3 Hours.

Review of literature on work and organizations, with focus on race, class, gender inequalities, and interactions between society and organizations; discussion of topics related to white collar crime and deviant behavior inside modern corporations. Prerequisite: SOCI 2013. (Typically offered: Spring)
This course is cross-listed with SOCI 4063.

## CRIM 4143. Juvenile Justice. 3 Hours.

Examination of juvenile justice system and juvenile crime, including historical development of the system and treatment of juvenile delinquents along with legal, correctional, and treatment processes and philosophies. Emphasis on current issues facing delinquents, the system, and delinquency prevention in addition to trends in juvenile crime. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring) This course is cross-listed with SOCI 4143.

## CRIM 4223. Criminal Violence. 3 Hours.

Explores definitions, patterns, explanations, and potential interventions of aggression and criminal violence. Discusses the temporal, spatial, and demographic patterns of violence in the United States. Assesses various explanations of violence and considers possible interventions. Examines the literature on the structural- and individual-level correlates of violent criminal offending. Prerequisite: CRIM 2003 and junior standing. (Typically offered: Spring)

## CRIM 4233. Death Penalty. 3 Hours.

Examines problems and social issues related to the death penalty in the U.S., including the history of capital punishment, Supreme Court decisions, how various jurisdictions seek the death penalty, the comparative costs of incarceration and execution, miscarriages of justice, and how the criminal justice system responds to these issues. Prerequisite: CRIM 2003 or SOCI 2013. (Typically offered: Irregular) This course is cross-listed with SOCI 4233.

## CRIM 4303. Spatial Analyses for Social Data. 3 Hours.

Focuses on learning about spatial data and how to use spatial analyses to detect patterns and answer research questions related to crime occurrence. Emphasizes how results translate to practitioner efforts and policy. (Typically offered: Spring)

CRIM 4443. Terrorism and Homeland Security. 3 Hours.
Examines the evolution of modern terrorism and homeland security, focusing primarily on the dynamics of American terrorist movements (ideologies, motives, and tactics). Social, political, and criminal justice responses to terrorism are also considered. Prerequisite: Junior standing. (Typically offered: Spring)

## Data Science (DTSC)

Manuel Rossetti
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Karl D. Schubert
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Data scientists make sense of huge sets of data to help businesses, governments, nonprofits and other organizations make smarter decisions. The university's interdisciplinary Bachelor of Science in Data Science will prepare students for a successful career in data science with a strategic skill set, including the ability to:

- Use and apply state-of-the-art technologies for data representation, retrieval, manipulation, storage, governance, understanding, analysis, privacy, and security.
- Develop descriptive, predictive and prescriptive models to abstract complex systems and organizational problems, and to use computational methods to draw data-supported conclusions.
- Use foundational knowledge and apply critical thinking skills to identify and solve problems, make decisions, and visualize data, all with an awareness of societal and ethical impacts.
- Adapt analytics concepts to interpret and communicate findings and implications to senior decision-makers.
- Work effectively in an interdisciplinary team and transfer findings between knowledge domains and to others with no domain experience.
- Communicate using technical and non-technical language in writing and verbally.

Three colleges at the university - the College of Engineering, the Fulbright College of Arts and Sciences, and the Sam M. Walton College of Business - contribute expertise to the overall major while providing deeper insight into the concentrations they offer, including:

## - Accounting Analytics

- Bioinformatics
- Biomedical and Healthcare Informatics
- Business Data Analytics
- Computational Analytics
- Cybersecurity Analytics
- Data Science Statistics
- Geospatial Data Analytics
- Music Industry Data Analytics
- Operations Analytics
- Social Data Analytics
- Supply Chain Analytics


## Requirements for B.S. in Data Science with Accounting Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Accounting Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency $=$ MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) <br> or HIST 201‘History of the American People, 1877 to Present <br> (ACTS Equivalency $=$ HIST 2123) <br> or PLSC 200American National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Science state minimum core electives |  | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | 3 |

Data Science Required Core (47 hours)

| DASC 1003 | Introduction to Data Science | 3 |
| :--- | :--- | :--- |
| DASC 1104 | Programming Languages for Data Science (R, <br> Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for <br> Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |


| DASC 1223 | Role of Data Science in Today's World | 3 |
| :--- | :--- | :--- |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |


| Data Science Required Additional Courses |  |  |
| :--- | :--- | ---: |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences | $6-7$ |  |


| STAT 3013 | Introduction to Probability |
| :--- | :--- |
| \& STAT 3003 | and Statistical Methods (Statistical Methods) |
| Or |  |
| INEG 2323 | Probability and Stochastic Processes for Industrial <br> \& INEG 2314 |
|  | Engineers <br> and Statistics for Industrial Engineers I |

Data Science Concentration Courses ..... 20-21
General Electives ..... 2-4 ..... 120
Required Accounting Analytics Concentration Courses

| ACCT 2013 | Accounting Principles | 3 |
| :--- | :--- | :--- |
| ACCT 2023 | Accounting Principles II | 3 |
| ACCT 3533 | Accounting Technology | 3 |
| ACCT 3543 | Accounting Analytics | 3 |
| ISYS 4193 | Business Analytics and Visualization | 3 |
| ISYS 4293 | Business Intelligence | 3 |
| Elective Accounting Analytics Concentration Courses (Select 3 hours) | 3 |  |
| FINN 3013 | Financial Analysis |  |
| ECON 3033 | Microeconomic Theory |  |
| ECON 4743 | Introduction to Econometrics |  |
| ECON 4753 | Forecasting |  |
| ISYS 4213 | ERP Fundamentals | $\mathbf{2 1}$ |
| MKTG 3433 | Introduction to Marketing |  |
| Total Hours |  |  |

Data Science B.S. with Accounting Analytics ConcentrationFirst YearUnitsFall Spring4MATH 2554 Calculus I (ACTS Equivalency= MATH 2405) (Satisfies General EducationOutcome 2.1) ${ }^{1}$ENGL 1013 Composition I (ACTS Equivalency3
= ENGL 1013) (Satisfies General Education
DASC 1003 Introduction to Data Science ..... 3
DASC 1104 Programming Languages for Data ..... 4
ScienceMATH 2564 Calculus II (ACTS Equivalency =MATH 2505)ECON 2143 Basic Economics: Theory andPractice (Satisfies General Education Outcome3.3)ENGL 1033 Technical Composition II (ACTSEquivalency = ENGL 1023) (Satisfies GeneralEducation Outcome 1.2)
DASC 1204 Introduction to Object OrientedProgramming for Data ScienceDASC 1223 Role of Data Science in Today's WorldYear Total:
Second Year Fall
DASC 2594 Multivariable Math for Data Scientists ..... 4
DASC 2113 Principles and Techniques of Data ..... 3
Science
DASC 2213 Data Visualization and Communication ..... 3
STAT 3013 Introduction to Probability ${ }^{4}$or INEG 2323 Probability and StochasticProcesses for Industrial Engineers
State Minimum Core U.S. History or Government
Elective (Satisfies General Education Outcome4.2) ${ }^{2}$
SEVI 2053 Business Foundations (Data ScienceMajors-only section)
STAT 3003 Statistical Methods ${ }^{4}$or INEG 2314 Statistics for Industrial Engineers IState Minimum Core Natural Science with LabElective (Satisfies General Education Outcome$3.4)^{2}$DASC 2203 Data Management and Data Base ${ }^{2}$ACCT 2013 Accounting Principles (This is aConcentration pre-req and uses the GeneralElective credit hours)
Year Total: ..... 16
Third Year ..... Fall
General Education Outcome 5.1)DASC 3103 Cloud Computing and Big Data
State Minimum Core Social Sciences Elective ..... 3
(Satisfies General Education Outcomes 3.2 and$3.3)^{2}$State Minimum Core Natural Science with LabElective (Satisfies General Education Outcome$3.4)^{2}$ACCT 2023 Accounting Principles II
DASC 3203 Optimization Methods in Data Science ..... 3
DASC 3213 Statistical Learning ..... 3
ACCT 3533 Accounting Technology143333

State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{2}$
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and $4.1)^{2}$
Year Total: 16

| Fourth Year | Fall |
| :--- | ---: |
| DASC 4892 Data Science Practicum I | 2 |
| DASC 4113 Machine Learning | 3 |
| DASC 4123 Social Problems in Data Science and | 3 |
| Analytics |  |
| ACCT 3543 Accounting Analytics | 3 |
| ISYS 4193 Business Analytics and Visualization | 3 |
| DASC 4993 Data Science Practicum II (Satisfies |  |
| General Education Outcome 6.1) |  |
| ISYS 4293 Business Intelligence |  |
| Accounting Analytics Concentration Elective |  |
| General Education Elective ${ }^{3}$ | 14 |
| Year Total: |  |

## Total Units in Sequence:

120
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cl \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3c \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Bioinformatics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Bioinformatics Concentration. Below those is a recommended eightsemester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

State Minimum Core and General Education ( 36 hours)

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :--- | :--- | :--- |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = | 3 |
|  | ENGL 1023) |  |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) | 8 |  |
| Fine Arts state minimum core | 3 |  |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions |  |

U.S. History and Government state minimum core 3

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201‘'History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
or PLSC 200American National Government (ACTS Equivalency = PLSC 2003)
Social Science state minimum core electives 6
ECON 2143 Basic Economics: Theory and Practice (represents 3 3 of the 9 required credit hours for Social Science elective)
Data Science Required Core (47 hours)
DASC 1003 Introduction to Data Science 3
DASC 1104 Programming Languages for Data Science (R, 4 Python)
clDASC 1204 Introduction to Object Oriented Programming for 4?
DASC 2594 Multivariable Math for Data Scientists 4

DASC 1223 Role of Data Science in Today's World 3
DASC 2113 Principles and Techniques of Data Science 3
DASC 2203 Data Management and Data Base 3
DASC 2213 Data Visualization and Communication (Tableau) 3
DASC 3103 Cloud Computing and Big Data 3
DASC 3203 Optimization Methods in Data Science 3
DASC 3213 Statistical Learning 3
DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and Analytics 3
DASC 4993 Data Science Practicum II 3
Data Science Required Additional Courses
MATH $2564 \quad$ Calculus II (ACTS Equivalency $=$ MATH 2505)
SEVI 2053 Business Foundations 3


| Fourth Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and Analytics | 3 |  |
| BIOL 3023 Evolutionary Biology or BIOL 3863 General Ecology | 3 |  |
| Bioinformatics Elective | 3 |  |
| DASC 4993 Data Science Practicum II (Satisfies General Education Outcome 6.1) | 3 |  |
| Bioinformatics Elective |  | 3 |
| Bioinformatics Elective |  | 3 |
| Bioinformatics Elective |  | 3 |
| General Education Elective ${ }^{3}$ |  | -3 |
| Year Total: | 14 | 5 |
| Total Units in Sequence: |  | 120 |
| ${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554. |  |  |
| ${ }^{2}$ Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections. |  |  |
| ${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections. |  |  |
| ${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration. |  |  |

## Requirements for B.S. in Data Science with Biomedical and Healthcare Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Biomedical and Healthcare Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

State Minimum Core and General Education (36 hours)

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |  |
| or HIST 201!History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123) |  |  |
| or PLSC 200American National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Science state minimum core electives |  | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | 3 |

Data Science Required Core (47 hours)
DASC 1003 Introduction to Data Science 3
DASC 1104 Programming Languages for Data Science (R, 4 Python)
DASC 1204 Introduction to Object Oriented Programming for 4 Data Science (JAVA)
DASC 2594 Multivariable Math for Data Scientists 4
DASC 1223 Role of Data Science in Today's World 3
DASC 2113 Principles and Techniques of Data Science 3
DASC 2203 Data Management and Data Base 3
DASC 2213 Data Visualization and Communication (Tableau) 3
DASC 3103 Cloud Computing and Big Data 3
DASC 3203 Optimization Methods in Data Science 3
DASC 3213 Statistical Learning 3
DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and Analytics 3
DASC 4993 Data Science Practicum II 3
Data Science Required Additional Courses
MATH $2564 \quad$ Calculus II (ACTS Equivalency $=$ MATH 2505) $\quad 4$
SEVI 2053 Business Foundations 3
Choose from one of these two-course sequences 6-7
STAT 3013 Introduction to Probability
\& STAT 3003 and Statistical Methods (Statistical Methods)
Or
INEG 2323 Probability and Stochastic Processes for Industrial
\& INEG 2314 Engineers
and Statistics for Industrial Engineers I
Data Science Concentration Courses 20-21
General Electives
Total Hours

## Required Biomedical and Healthcare Informatics Concentration Courses

Students completing the Biomedical and Healthcare Informatics Concentration must select CHEM 1103 and PHYS 2054 for the State Minimum Core Science Electives.

| BMEG 2614 | Introduction to Biomedical Engineering | 4 |
| :---: | :---: | :---: |
| CHEM 1123 | University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) | 3 |
| BIOL 2213 | Human Physiology (ACTS Equivalency $=$ BIOL 2414 Lecture) | 3 |
| BMEG 3801 | Clinical Observations and Needs Finding | 1 |
| Elective Biomedical and Healthcare Informatics Concentration (Select 10 10 credit hours) |  | 0 |
| BMEG 4713 | Cardiovascular Physiology and Devices |  |
| BMEG 4973 | Regenerative Medicine |  |
| BMEG 4413 | Tissue Engineering |  |
| BMEG 4403 | Biomedical Microscopy |  |
| BMEG 4513 | Biomedical Optics and Imaging |  |
| BMEG 4523 | Biomedical Data and Image Analysis |  |
| BMEG 4983 | Genome Engineering and Synthetic Biology |  |
| BIOL 2211L | Human Physiology Laboratory (ACTS Equivalency $\text { = BIOL } 2414 \text { Lab) }$ |  |
| CHEM 1121L | University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |  |
| Total Hours |  | 21 |

## Data Science B.S. with Biomedical and Healthcare Informatics Concentration EightSemester Program

First Year

| Fall | Units |
| ---: | ---: |
| 4 |  |

= MATH 2405) (Satisfies General Education
Outcome 2.1$)^{1}$
Satisfies General Education Outcome 3.4:
CHEM 1103 University Chemistry I (ACTS
4
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I Laboratory
(ACTS Equivalency = CHEM 1414 Lab)
ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
DASC 1003 Introduction to Data Science
3
DASC 1104 Programming Languages for Data Science
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
Satisfies General Education Outcome 3.4:
PHYS 2054 University Physics I (ACTS
Equivalency = PHYS 2034) (Satisfies General
Education Outcome 3.4)
ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)

DASC 1204 Introduction to Object Oriented 4
Programming for Data Science
DASC 1223 Role of Data Science in Today's World
Year Total:

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

DASC 2594 Multivariable Math for Data Scientists

STAT 3013 Introduction to Probability ${ }^{4}$
or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication 3
DASC 2113 Principles and Techniques of Data 3
Science
BMEG 2614 Introduction to Biomedical
4
Engineering
SEVI 2053 Business Foundations (Data Science
Majors-only section)
STAT 3003 Statistical Methods ${ }^{4}$
or INEG 2314 Statistics for Industrial Engineers I
DASC 2203 Data Management and Data Base
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
Year Total:

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

4 Fourth Year Units

DASC 2133 Data Privacy \& Ethics (Satisfies 3
General Education Outcome 5.1)
DASC 3103 Cloud Computing and Big Data 3
BIOL 2213 Human Physiology (ACTS Equivalency 3
= BIOL 2414 Lecture)
ECON 2143 Basic Economics: Theory and
Practice (Satisfies General Education Outcome 3.3)

State Minimum Core Social Sciences Elective 3
(Satisfies General Education Outcomes 3.2 and 3.3) ${ }^{2}$

DASC 3203 Optimization Methods in Data Science
DASC 3213 Statistical Learning
BMEG 3801 Clinical Observations and Needs Finding
State Minimum Core Fine Arts Elective (Satisfies
General Outcome 3.1) ${ }^{2}$
State Minimum Core Social Sciences Elective
(Satisfies General Education Outcomes 3.3 and
4.1) ${ }^{2}$

Year Total:

DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and 3
Concentration Elective Course
Concentration Elective Course
DASC 4993 Data Science Practicum II (Satisfies
General Education Outcome 6.1)
Concentration Elective Course
Concentration Elective Course
State Minimum Core U.S. History or Government
Elective (Satisfies General Education Outcome
4.2)
General Elective Course ${ }^{3}$
Year Total:
Total Units in Sequence:
1 Students have demonstrated successful completion of the learning
indicators identified for learning outcome 2.1, by meeting the
prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements
(p. 81) as outlined in the Catalog of Studies. The courses that meet
the state minimum core also fulfill many of the university's General
Education requirements (p. 72), although there are additional
considerations to satisfy the general education learning outcomes.
Students are encouraged to consult with their academic adviser when
making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses
(3000-4000 level). It is recommended that students consult with their
adviser when making course selections.
Data Science Statistics and Computational Analytics Concentration
students are advised to select STAT 3013/STAT 3003 to meet the
prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Business Data Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Business Data Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| State Minimum | Core and General Education (36 hours) |  |
| :--- | :--- | :--- |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = | 3 |
|  | ENGL 1023) |  |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) | 8 |  |


| Fine Arts state | nimum core | 3 |
| :---: | :---: | :---: |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTSEquivalency = HIST 2113) |  |  |
| or HIST 201〔History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  |  |
| or PLSC 200American National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Science state minimum core electives 6 |  |  |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | 3 |

Data Science Required Core (47 hours)
DASC 1003 Introduction to Data Science 3
DASC 1104 Programming Languages for Data Science (R, 4 Python)
DASC 1204 Introduction to Object Oriented Programming for 4 Data Science (JAVA)
DASC 2594 Multivariable Math for Data Scientists 4
DASC 1223 Role of Data Science in Today's World 3
DASC 2113 Principles and Techniques of Data Science 3
DASC 2203 Data Management and Data Base 3
DASC 2213 Data Visualization and Communication (Tableau) 3
DASC 3103 Cloud Computing and Big Data 3
DASC 3203 Optimization Methods in Data Science 3
DASC 3213 Statistical Learning 3
DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and Analytics 3
DASC 4993 Data Science Practicum II 3
Data Science Required Additional Courses
MATH $2564 \quad$ Calculus II (ACTS Equivalency $=$ MATH 2505) 4
SEVI 2053 Business Foundations 3
Choose from one of these two-course sequences 6-7
STAT 3013 Introduction to Probability
\& STAT 3003 and Statistical Methods (Statistical Methods)
Or
INEG 2323 Probability and Stochastic Processes for Industrial
\& INEG 2314 Engineers
and Statistics for Industrial Engineers I
Data Science Concentration Courses 20-21
General Electives 2-4
Total Hours

## Required Business Data Analytics Concentration Courses

ACCT 2013 Accounting Principles 3
ACCT 2023 Accounting Principles II 3
ISYS 4193 Business Analytics and Visualization 3
ISYS 4293 Business Intelligence 3
Elective Business Data Analytics Concentration Courses (Select $9 \quad 9$
hours)

| ECON 4743 | Introduction to Econometrics |
| :--- | :--- |
| ECON 4753 | Forecasting |
| FINN 3013 | Financial Analysis |
| FINN 2043 | Principles of Finance |
| ISYS 4213 | ERP Fundamentals |
| MKTG 3433 | Introduction to Marketing |
| MKTG 3633 | Marketing Research |
| Total Hours | $\mathbf{2 1}$ |

## Data Science B.S. with Business Data Analytics Concentration Eight-Semester Program

First Year
MATH 2554 Calculus I (ACTS Equivalency
= MATH 2405) (Satisfies General Education
Outcome 2.1) ${ }^{1}$
ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
DASC 1003 Introduction to Data Science
DASC 1104 Programming Languages for Data Science
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)

ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented
Programming for Data Science
DASC 1223 Role of Data Science in Today's World Year Total:

Second Year
DASC 2594 Multivariable Math for Data Scientists
STAT 3013 Introduction to Probability ${ }^{4}$
or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2113 Principles and Techniques of Data
Science
DASC 2213 Data Visualization and Communication
State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome $4.2)^{2}$
SEVI 2053 Business Foundations (Data Science Majors-only section)
STAT 3003 Statistical Methods ${ }^{4}$
or INEG 2314 Statistics for Industrial Engineers I
DASC 2203 Data Management and Data Base
State Minimum Core Natural Science Elective with

Units

ACCT 2013 Accounting Principles
Year Total: 16

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

DASC 2133 Data Privacy \& Ethics (Satisfies ..... 3
General Education Outcome 5.1)
DASC 3103 Cloud Computing and Big Data ..... 3
ISYS 4193 Business Analytics and Visualization ..... 3
State Minimum Core Social Sciences Elective ..... 3
(Satisfies General Education Outcomes 3.2 and $3.3)^{2}$State Minimum Core Natural Science Elective with4Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$DASC 3203 Optimization Methods in Data Science3
DASC 3213 Statistical Learning ..... 3
ACCT 2023 Accounting Principles II ..... 3
State Minimum Core Fine Arts Elective (Satisfies ..... 3
General Education Outcome 3.1) ${ }^{2}$
State Minimum Core Social Sciences Elective(Satisfies General Education Outcomes 3.3 and

$$
4.1)^{2}
$$

Year Total:

$$
16
$$15

Fourth Year Units ..... Fall Spring3
DASC 4993 Data Science Practicum II (Satisfies
3
General Education Outcome 6.1)
ISYS 4293 Business Intelligence
3
Business Data Analytics Elective ..... 2-3
Year Total: ..... 14 ..... 12
Total Units in Sequence: ..... 120
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Computational Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Computational Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |  |
| or HIST 201؛History of the American People, 1877 to Present <br> (ACTS Equivalency = HIST 2123) |  |  |
| or PLSC 20CAmerican National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Science state minimum core electives |  | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | 3 |
| Data Science Required Core (47 hours) |  |  |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |


| DASC 3103 | Cloud Computing and Big Data | 3 |
| :---: | :---: | :---: |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |
| Data Science Required Additional Courses |  |  |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences |  | 6-7 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |
| Or |  |  |
| INEG 2323 \& INEG 2314 | Probability and Stochastic Processes for Industria Engineers and Statistics for Industrial Engineers I |  |
| Data Science Concentration Courses |  | 20-21 |
| General Electives |  | 2-4 |
| Total Hours |  | 120 |

## Required Computational Analytics Concentration Courses

DASC 2103 Data Structures \& Algorithms ..... 3
CSCE 4143 Data Mining ..... 3
CSCE 4613 Artificial Intelligence ..... 3
Elective Computational Analytics Concentration Courses (Select 12 ..... 12

hours) ${ }^{1}$

CSCE 4013
Special Topics
MATH 2603 Discrete Mathematics (Pre-req for CSCE 4133)
or MATH 28(Transition to Advanced Mathematics
CSCE 4133 Algorithms ${ }^{1}$
CSCE 4253 Concurrent Computing
CSCE 4853 Information Security
DASC 4533 Information Retrieval
CSCE 3513 Software Engineering
Note: Other courses from CSCE and/or other concentrations of DASC can also be added to the concentration electives.

## Total Hours

## Data Science B.S. with Computational Analytics Concentration Eight-Semester Program

First Year | Units |
| ---: |
| Spring |

MATH 2554 Calculus I (ACTS Equivalency ..... 4
Outcome 2.1) ${ }^{2}$
ENGL 1013 Composition I (ACTS Equivalency ..... 3= ENGL 1013) (Satisfies General EducationOutcome 1.1)
DASC 1003 Introduction to Data Science ..... 3
DASC 1104 Programming Languages for Data ..... 4
MATH 2564 Calculus II (ACTS Equivalency $=$
MATH 2505)
ECON 2143 Basic Economics: Theory and
Practice (Satisfies General Education Outcome
3.3)
ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented
Programming for Data Science
DASC 1223 Role of Data Science in Today's World
Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ | 3 |  |

Units
Computational Analytics Elective 3
General Education Elective ${ }^{4} \quad$ 2-3
Year Total: 14 12

STAT 3013 Introduction to Probability ${ }^{4}$
or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication
DASC 2113 Principles and Techniques of Data

## Science

State Minimum Core U.S. History or Government
Elective (Satisfies General Education Outcome
4.2) ${ }^{2}$

SEVI 2053 Business Foundations (Data Science
Majors-only section)
STAT 3003 Statistical Methods ${ }^{5}$
or INEG 2314 Statistics for Industrial Engineers I
DASC 2203 Data Management and Data Base
DASC 2103 Data Structures \& Algorithms
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4)
Year Total:
16

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |  |
| DASC 3103 Cloud Computing and Big Data | 3 |  |
| CSCE 4143 Data Mining | 3 |  |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) | 4 |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and $3.3)^{3}$ | 3 |  |
| DASC 3203 Optimization Methods in Data Science |  | 3 |
| DASC 3213 Statistical Learning |  | 3 |
| CSCE 4613 Artificial Intelligence |  | 3 |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{3}$ |  | 3 |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and $4.1)^{3}$ |  | 3 |
| Year Total: | 16 | 15 |


| Fourth Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and Analytics | 3 |  |
| Computational Analytics Elective | 3 |  |
| Computational Analytics Elective | 3 |  |
| DASC 4993 Data Science Practicum II (Satisfies General Education Outcome 6.1) | 3 |  |
| Computational Analytics Elective |  | 3 |
| Computational Analytics Elective |  | 3 |
| General Education Elective ${ }^{4}$ |  | 2-3 |
| Year Total: | 14 | 12 |
| Total Units in Sequence: |  | 120 |
| MATH 2603 or MATH 2803 is a pre-req for CSCE 4133. <br> ${ }^{2}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554. |  |  |
| ${ }^{3}$ Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections. |  |  |
| ${ }^{4}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections. |  |  |

## Requirements for B.S. with Cybersecurity Data Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Cybersecurity Data Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

Requirements for B.S. in Data Science
Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.


## Required Cybersecurity Data Analytics Concentration Courses

Required Courses:
ACCT 2013 Accounting Principles
or ACCT 20ء́Accounting Principles II
DASC 3223 Cyber Crime and Cyber Terrorism (Cyber Crime and Cyber Terrorism)
ISYS 4013 Principles of Data and Cybersecurity
ISYS 4023 Network and Data Security in a Changing World
ISYS 4043 Cybersecurity, Crime and Data Privacy Law Fundamentals
Elective Cybersecurity and Data Concentration Courses (Choose 2 of 6 the following):

| ISYS 4033 | Advanced Information Security Management |
| :--- | :--- |
| ISYS 4053 | Advanced Cybersecurity, Crime and Privacy Law |
| ISYS 4173 | Blockchain Fundamentals |

Total Hours 21

\section*{Data Science B.S. with Cybersecurity Data Analytics Concentration Eight-Semester Plan <br> First Year $\quad$ Fall | Units |
| ---: |
| Spring |}

MATH 2554 Calculus I (ACTS Equivalency 4
= MATH 2405) (Satisfies General Education
Outcome 2.1) ${ }^{1}$
ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisfies General Education Outcome 1.1)
DASC 1003 Introduction to Data Science
3
DASC 1104 Programming Languages for Data 4
Science
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
ECON 2143 Basic Economics: Theory and
Practice (Satisfies General Education Outcome
3.3)

ENGL 1033 Technical Composition II (ACTS
Equivalency $=$ ENGL 1023) (Satisfies General Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented 4
3 Programming for Data Science
DASC 1223 Role of Data Science in Today's World 3
Year Total: 14

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ | 3 |  |

STAT 3013 Introduction to Probability 2323 Probability and Stochastic
or Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication 3
DASC 2113 Principles and Techniques of Data 3
Science
State Minimum Core U.S. History or Government 3
Elective (Satisfies General Education Outcome
$4.2)^{2}$

| SEVI 2053 Business Foundations (Data Science Majors-only section) |  | 3 |
| :---: | :---: | :---: |
| STAT 3003 Statistical Methods ${ }^{4}$ or INEG 2314 Statistics for Industrial Engineers I |  | 3-4 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ |  | 4 |
| DASC 2203 Data Management and Data Base |  | 3 |
| ACCT 2013 Accounting Principles or ACCT 2023 Accounting Principles II |  | 3 |
| Year Total: | 16 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |  |
| DASC 3103 Cloud Computing and Big Data | 3 |  |
| DASC 3223 Cyber Crime and Cyber Terrorism (Cyber Crime and Cyber Terrorism) | 3 |  |
| State Minimum Core Social Sciences Elective (General Education Outcomes 3.2 and 3.3) ${ }^{2}$ | 3 |  |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ | 4 |  |
| DASC 3203 Optimization Methods in Data Science |  | 3 |
| DASC 3213 Statistical Learning |  | 3 |
| ISYS 4013 Principles of Data and Cybersecurity |  | 3 |
| State Minimum Core Social Sciences Elective (Satisfied General Education Outcomes 3.3 and $4.1)^{2}$ |  | 3 |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{2}$ |  | 3 |
| Year Total: | 16 | 15 |

Units
Fall
2
DASC 4892 Data Science Practicum I
3
DASC 4123 Social Problems in Data Science and 3 Analytics
ISYS 4023 Network and Data Security in a
3
Changing World
ISYS 4043 Cybersecurity, Crime and Data Privacy
3
DASC 4993 Data Science Practicum II (Satisfies
General Education Outcome 6.1)
Concentration Elective
Concentration Elective 3
General Education Elective ${ }^{3} \quad$ 2-3

Year Total: 14 12

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1 by meeting the prerequisites for MATH 2554 (https://catalog.uark.edu/search/? P=MATH\%202554).

## Requirements for B.S. in Data Science with Data Science Statistics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Data Science Statistics Concentration. Below those is a recommended eightsemester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
4 Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## State Minimum Core and General Education (36 hours)

ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) 3

ENGL 1033 Technical Composition II (ACTS Equivalency = 3 ENGL 1023)
MATH $2554 \quad$ Calculus I (ACTS Equivalency $=$ MATH 2405) 4
Science state minimum electives (two courses with labs) 8
Fine Arts state minimum core 3
Humanities state minimum core
PHIL 3103 Ethics and the Professions 3
U.S. History and Government state minimum core 3

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201! History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)
or PLSC 200American National Government (ACTS Equivalency = PLSC 2003)
Social Science state minimum core electives
ECON 2143 Basic Economics: Theory and Practice (represents 3 3 of the 9 required credit hours for Social Science elective)
Data Science Required Core (47 hours)
DASC 1003 Introduction to Data Science

| DASC 1104 | Programming Languages for Data Science (R, <br> Python) | 4 |
| :--- | :--- | :--- |
| DASC 1204 | Introduction to Object Oriented Programming for <br> Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |


| Data Science | Required Additional Courses |  |
| :--- | ---: | ---: |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences | $6-7$ |  |

Choose from one of these two-course sequences 6-7

| STAT 3013 | Introduction to Probability |
| :--- | :--- |
| \& STAT 3003 | and Statistical Methods (Statistical Methods) |
| Or |  |
| INEG 2323 | Probability and Stochastic Processes for Industrial |
| \& INEG 2314 | Engineers <br> and Statistics for Industrial Engineers I |

Data Science Concentration Courses 20-21
General Electives $\quad$ 2-4
Total Hours 120

## Required Data Science Statistics Concentration Courses

| STAT 3113 | Introduction to Mathematical Statistics | 3 |
| :--- | :--- | :--- |
| STAT 4373 | Experimental Design | 3 |
| STAT 4013 | Statistical Forecasting and Prediction (Statistical | 3 |
|  | Forecasting and Prediction) |  |
| STAT 4333 | Analysis of Categorical Responses | 3 |
| Elective Data Science Statistics Concentration (Select 9 hours) | 9 |  |


| STAT 4023 | Bayesian Methods (Bayesian Methods) |
| :--- | :--- |
| STAT 5043 | Sampling Techniques |
| STAT 4033 | Nonparametric Statistical Methods |
| CSCE 4613 | Artificial Intelligence |
| GEOS 3013 | Foundations of Geospatial Data Analysis |
| GEOS 3543 | Geospatial Applications and Information Science |
| GEOS 3563 | Geospatial Data Mining |

## Total Hours

## Data Science B.S. with Data Science Statistics Concentration Eight-Semester Program

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| MATH 2554 Calculus I (ACTS Equivalency | 4 |  |
| $=$ MATH 2405) (Satisfies General Education |  |  |
| Outcome 2.1) |  |  |
| ENGL 1013 Composition I (ACTS Equivalency 3 |  |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) <br> DASC 1003 Introduction to Data Science | 3 |  |

## Science

MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
ECON 2143 Basic Economics: Theory and
Practice (Satisfies General Education Outcome 3.3)

ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented 4
Programming for Data Science
DASC 1223 Role of Data Science in Today's World 3

| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ or INEG 2323 Probability and Stochastic Processes for Industrial Engineers | 3 |  |
| DASC 2213 Data Visualization and Communication | 3 |  |
| DASC 2113 Principles and Techniques of Data Science | 3 |  |
| State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2) ${ }^{2}$ | 3 |  |
| SEVI 2053 Business Foundations (Data Science Majors-only section) |  | 3 |
| STAT 3003 Statistical Methods ${ }^{4}$ or INEG 2314 Statistics for Industrial Engineers I |  | 3-4 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ |  | 4 |
| DASC 2203 Data Management and Data Base |  | 3 |
| STAT 3113 Introduction to Mathematical Statistics |  | 3 |
| Year Total: | 16 | 16 |

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

DASC 2133 Data Privacy \& Ethics (Satisfies 3
General Education Outcome 5.1)
DASC 3103 Cloud Computing and Big Data 3

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State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and $3.3)^{2}$
State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ STAT 4373 Experimental Design
DASC 3203 Optimization Methods in Data Science
DASC 3213 Statistical Learning
STAT 4333 Analysis of Categorical Responses
State Minimum Core Social Sciences Elective
(Satisfies General Education Outcomes 3.3 and $4.1)^{2}$
State Minimum Core Fine Arts Elective (Satisfies
General Education Outcome 3.1) ${ }^{2}$
Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and | 3 |  |
| Analytics |  |  |
| STAT 4013 Statistical Forecasting and Prediction | 3 |  |
| (Statistical Forecasting and Prediction) |  |  |
| Data Science Statistics Concentration Elective | 3 |  |
| DASC 4993 Data Science Practicum II (Satisfies |  | 3 |
| General Education Outcome 6.1) |  | 3 |
| Data Science Statistics Concentration Elective |  | 3 |
| Data Science Statistics Concentration Elective |  | $2-3$ |
| General Elective ${ }^{3}$ | 14 | 12 |
| Year Total: |  |  |

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
${ }^{2}$ Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements ( p .72 ), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Geospatial Data Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the

Geospatial Data Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |  |
| or HIST 201‘History of the American People, 1877 to Present <br> (ACTS Equivalency = HIST 2123) |  |  |
| or PLSC 200American National Government (ACTS Equivalency $=$ PLSC 2003) |  |  |
| Social Science state minimum core electives |  | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | 3 |

Data Science Required Core (47 hours)
DASC 1003 Introduction to Data Science 3
DASC 1104 Programming Languages for Data Science (R, 4 Python)
$\begin{array}{lll}\text { DASC } 1204 & \text { Introduction to Object Oriented Programming for } & 4\end{array}$ Data Science (JAVA)
DASC 2594 Multivariable Math for Data Scientists 4
DASC 1223 Role of Data Science in Today's World 3
DASC 2113 Principles and Techniques of Data Science 3
DASC 2203 Data Management and Data Base 3
DASC 2213 Data Visualization and Communication (Tableau) 3
DASC 3103 Cloud Computing and Big Data 3
DASC 3203 Optimization Methods in Data Science 3
DASC 3213 Statistical Learning 3
DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and Analytics 3
DASC 4993 Data Science Practicum II 3
Data Science Required Additional Courses

| MATH 2564 | Calculus II (ACTS Equivalency = MATH |
| :--- | :--- |
| SEVI 2053 | Business Foundations |
| Choose from one of these two-course sequences |  |


| GEOS 3543 | Geospatial Applications and Information Science | 3 |
| :--- | :--- | :--- |
| GEOS 3553 | Spatial Analysis Using ArcGIS | 3 |
| GEOS 3563 | Geospatial Data Mining | 3 |
| GEOS 3593 | Introduction to Geodatabases | 3 |
| GEOS 4263 | Geospatial Data Science - Sources and <br>  <br> GEOS 4653 | Characteristics |$\quad 3$

## Total Hours

## Data Science B.S. with Geospatial Data Analytics Concentration Eight-Semester Program

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 4 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| DASC 1003 Introduction to Data Science | 3 |  |
| DASC 1104 Programming Languages for Data Science | 4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |
| ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) |  | 3 |
| ENGL 1033 Technical Composition II (ACTS |  | 3 |

DASC 1204 Introduction to Object Oriented ..... 4
Programming for Data Science DASC 1223 Role of Data Science in Today's World ..... 3
Year Total: ..... 14 ..... 17
Second Year ..... Fall

## Units

Spring
DASC 2594 Multivariable Math for Data Scientists ..... 4
STAT 3013 Introduction to Probability ${ }^{4}$ ..... 3
or INEG 2323 Probability and Stochastic
Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication ..... 3
DASC 2113 Principles and Techniques of Data ..... 3
Science
State Minimum Core U.S. History or Government ..... 3
Elective (Satisfies General Education Outcome4.2) ${ }^{2}$
SEVI 2053 Business Foundations (Data ScienceMajors-only section)
STAT 3003 Statistical Methods ${ }^{4}$or INEG 2314 Statistics for Industrial Engineers IState Minimum Core Natural Science Elective withLab (Satisfies General Education Outcome 3.4) ${ }^{2}$DASC 2203 Data Management and Data Base
GEOS 3543 Geospatial Applications andInformation Science
Year Total: ..... 16
Third Year Fall
DASC 2133 Data Privacy \& Ethics (Satisfies ..... 3
General Education Outcome 5.1)DASC 3103 Cloud Computing and Big Data3
GEOS 3553 Spatial Analysis Using ArcGIS ..... 3
State Minimum Core Social Sciences Elective ..... 3
(Satisfies General Education Outcomes 3.2 and ..... 3.3) $2^{2}$
State Minimum Core Natural Science Elective wit ..... 4
DASC 3203 Optimization Methods in Data Science ..... 3DASC 3213 Statistical Learning
GEOS 3593 Introduction to Geodatabases ..... 3
State Minimum Core Social Sciences Elective(Satisfies General Education Outcomes 3.3 and
$4.1)^{2}$
State Minimum Core Fine Arts Elective (SatisfiesGeneral Education Outcome 3.1) ${ }^{2}$
Year Total:16
Fourth Year
Fall

## Units

Spring
DASC 4892 Data Science Practicum I ..... 2
DASC 4113 Machine Learning ..... 3
DASC 4123 Social Problems in Data Science and ..... 33
GEOS 3563 Geospatial Data Mining
GEOS 4263 Geospatial Data Science - Sources
and Characteristics
DASC 4993 Data Science Practicum II (Satisfies
General Education Outcome 6.1)
GEOS 4653 GIS Analysis and Modeling
Geospatial Data Analytics Concentration Elective
General Elective ${ }^{3}$
Year Total:
Total Units in Sequence:
1 Students have demonstrated successful completion of the learning
indicators identified for learning outcome 2.1, by meeting the
prerequisites for MATH 2554.
2
Students must complete the State Minimum Core requirements
(p. 81) as outlined in the Catalog of Studies. The courses that meet
the state minimum core also fulfill many of the university's General
Education requirements (p. 72), although there are additional
considerations to satisfy the general education learning outcomes.
Students are encouraged to consult with their academic adviser when
making course selections.
3 Students are required to complete 40 hours of upper-division courses
(3000-4000 level). It is recommended that students consult with their
adviser when making course selections.
Data Science Statistics and Computational Analytics Concentration
students are advised to select STAT 3013/STAT 3003 to meet the
prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Music Industry Data Analytics Concentration

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

State Minimum Core and General Education ( 36 hours)

| State Minimum Core and General Education ( 36 hours) |  |  |
| :---: | :---: | :---: |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |

Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
students must complete the State Minimum Core requirements (p.81) as outined in the Catalog of Studies. The courses that meet Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. sudents are encouraged to consult with their academic adviser when making course selections.
Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections. students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

| or HIST 201‘'History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  |  |
| :---: | :---: | :---: |
| or PLSC 200American National Government (ACTS Equivalency = PLSC 2003) |  |  |
| Social Science st | ate minimum core electives | 6 |
| ECON 2143 | Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective) | 3 |
| Data Science Required Core (47 hours) |  |  |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |
| Data Science Required Additional Courses |  |  |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences |  | 6 -7 |
| STAT 3013 \& STAT 3003 | Introduction to Probability and Statistical Methods (Statistical Methods) |  |
| Or |  |  |
| INEG 2323 <br> \& INEG 2314 | Probability and Stochastic Processes for Industrial Engineers and Statistics for Industrial Engineers I |  |
| Data Science Concentration Courses 20 |  | 21 |
| General Electives |  | 2-4 |
| Total Hours |  | 20 |
| Music Industry Data Analytics Concentration Courses |  |  |
| Required Courses (15 hours) |  |  |
| MLIT 1333 | Popular Music | 3 |
| MUIN 3213 | 21st Century Music Industry | 3 |
| MUIN 4103 | Legal Aspects of the Music Industry | 3 |
| MUIN 4553 | Live Music Business | 3 |
| MUIN 4563 | Artist Development | 3 |
| Elective Music Industry Data Analytics Courses (Choose one of the following two-course sequences): |  |  |
| Sequence 1: Business Sequence |  |  |
| ISYS 4293 | Business Intelligence |  |
| MKTG 3433 | Introduction to Marketing |  |
| Sequence 2: | Technology Sequence |  | (ACTS Equivalency $=$ HIST 2123)


| CSCE 4143 | Data Mining |
| :--- | :--- |
| CSCE 4613 | Artificial Intelligence |
| Total Hours |  |
| Data Science B.S. with Music Industry Data |  |
| Analytics Concentration |  |
| Eight-Semester Plan |  |

First Year

MATH 2554 Calculus I (ACTS Equivalency
= MATH 2405) (Satisfies General Education
Outcome 2.1) ${ }^{1}$
ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
DASC 1003 Introduction to Data Science
3
DASC 1104 Programming Languages for Data
Science
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)

ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)
DASC 1204 Introduction to Object Oriented Programming for Data Science
DASC 1223 Role of Data Science in Today's World Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability |  |  |
| or INEG 2323 Probability and Stochastic | 3 |  |
| Processes for Industrial Engineers <br> DASC 2113 Principles and Techniques of Data | 3 |  |
| Science |  |  |
| DASC 2213 Data Visualization and Communication <br> State Minimum Core U.S. History or Government <br> Elective (Satisfies General Education Outcome | 3 |  |
| 4.2) | 3 |  |
| SEVI 2053 Business Foundations (Data Science |  | 3 |

Majors-only section)
STAT 3003 Statistical Methods ${ }^{4}$
or INEG 2314 Statistics for Industrial Engineers I
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 2203 Data Management and Data Base
MLIT 1333 Popular Music
Year Total:
16

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| DASC 2133 Data Privacy \& Ethics (Satisfies | 3 |  |
| General Education Outcome 5.1) |  |  |
| DASC 3103 Cloud Computing and Big Data | 3 |  |
| State Minimum Core Social Sciences Elective (General Education Outcomes 3.2 and 3.3 ) ${ }^{2}$ | 3 |  |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ | 4 |  |
| MUIN 3213 21st Century Music Industry | 3 |  |
| DASC 3203 Optimization Methods in Data Science |  | 3 |
| DASC 3213 Statistical Learning |  | 3 |
| MUIN 4103 Legal Aspects of the Music Industry |  | 3 |
| State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) ${ }^{2}$ |  | 3 |
| State Minimum Core Social Sciences Elective (Satisfied General Education Outcomes 3.3 and 4.1) ${ }^{2}$ |  | 3 |
| Year Total: | 16 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and Analytics | 3 |  |
| MUIN 4553 Live Music Business | 3 |  |
| MUIN 4563 Artist Development | 3 |  |
| DASC 4993 Data Science Practicum II (Satisfies |  | 3 |
| General Education Outcome 6.1) |  |  |
| Concentration Elective |  | 3 |
| Concentration Elective |  | 3 |
| General Education Elective ${ }^{3}$ |  | 2-3 |
| Year Total: | 14 | 12 |

## Total Units in Sequence:

 120${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2F1XG8924jwOx8pTlw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
4 Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Operations Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Operations Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |
| U.S. History and Government state minimum core |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) <br> or HIST 201‘History of the American People, 1877 to Present <br> (ACTS Equivalency $=$ HIST 2123) <br> or PLSC 20CAmerican National Government (ACTS Equivalency = PLSC 2003) |  |  |
|  |  |  |
|  |  |  |

ECON 2143 Basic Economics: Theory and Practice (represents 3 of the 9 required credit hours for Social Science elective)

| Data Science Required Core (47 hours) |  |  |
| :--- | :--- | :--- |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, <br> Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for <br> Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |


| DASC 2203 | Data Management and Data Base | 3 |
| :--- | :--- | :--- |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |


| Data Science | Required Additional Courses |  |
| :--- | :--- | ---: |
| MATH 2564 | Calculus II (ACTS Equivalency $=$ MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences | $6-7$ |  |

STAT 3013 Introduction to Probability

Or
INEG 2323 Probability and Stochastic Processes for Industrial \& INEG 2314 Engineers and Statistics for Industrial Engineers I
Data Science Concentration Courses ..... 20-21
General Electives ..... 2-4
Total Hours ..... 120
Required Operations Analytics Concentration Courses
INEG 2413 Engineering Economic Analysis ..... 3
INEG 2613 Introduction to Operations Research ..... 3
INEG $3553 \quad$ Production Planning and Control ..... 3
Elective Operations Analytics Concentration Courses ..... 9
Select 9 hours from the following:
INEG 4453 Productivity Improvement
INEG 3533 Transportation Logistics
INEG 3624 Simulation
INEG 4683 Decision Support in Industrial Engineering
SCMT 2103 Integrated Supply Chain Management
Select 3 hours from the following: ..... 3
INEG 4123 Global Engineering and Innovation
INEG 4433 Systems Engineering and ManagementTotal Hours21
Data Science B.S. with Operations Analytics Concentration
Eight-Semester Program

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| MATH 2554 Calculus I (ACTS Equivalency | 4 |  |
| $=$ MATH 2405) (Satisfies General Education |  |  |
| Outcome 2.1) |  |  |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |


| DASC 1003 Introduction to Data Science | 3 |  |
| :---: | :---: | :---: |
| DASC 1104 Programming Languages for Data Science | 4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |
| ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) |  | 3 |
| ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) |  | 3 |
| DASC 1204 Introduction to Object Oriented Programming for Data Science |  | 4 |
| DASC 1223 Role of Data Science in Today's World |  | 3 |
| Year Total: | 14 | 17 |
| Second Year |  | Units |
|  | Fall | Spring |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |
| STAT 3013 Introduction to Probability ${ }^{4}$ or INEG 2323 Probability and Stochastic Processes for Industrial Engineers | 3 |  |
| DASC 2213 Data Visualization and Communication | 3 |  |
| DASC 2113 Principles and Techniques of Data Science | 3 |  |
| State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome $4.2)^{2}$ | 3 |  |
| SEVI 2053 Business Foundations (Data Science Majors-only section) |  | 3 |
| INEG 2314 Statistics for Industrial Engineers I or STAT 3003 Statistical Methods |  | 3-4 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ |  | 4 |
| DASC 2203 Data Management and Data Base |  | 3 |
| INEG 2413 Engineering Economic Analysis |  | 3 |
| Year Total: | 16 | 17 |
| Third Year |  | Units |
|  | Fall | Spring |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |  |
| DASC 3103 Cloud Computing and Big Data | 3 |  |
| INEG 2613 Introduction to Operations Research | 3 |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3) ${ }^{2}$ | 3 |  |
| State Minimum Core Natural Science Elective with <br> Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ | 4 |  |
| DASC 3203 Optimization Methods in Data Science |  | 3 |
| DASC 3213 Statistical Learning |  | 3 |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1) ${ }^{2}$ |  | 3 |
| Operations Data Analytics Concentration Electiver |  | 3 |

12
Year Total: 16

| Fourth Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and <br> Analytics | 3 |  |
| INEG 3553 Production Planning and Control | 3 |  |
| Operations Data Analytics Concentration Elective <br> DASC 4993 Data Science Practicum II (Satisfies | 3 |  |
| General Education Outcome 6.1) <br> Operations Data Analytics Concentration Elective |  | 3 |
| Operations Data Analytics Concentration Elective <br> State Minimum Core Fine Arts Elective (Satisfies <br> General Education Outcome 3.1) |  | 3 |
| General Education Elective ${ }^{3}$ |  | 3 |
| Year Total: |  | 14 |

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
${ }^{2}$ Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p.72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Requirements for B.S. in Data Science with Social Data Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Social Data Analytics Concentration. Below those is a recommended eight-semester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core (p. 81). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. 3 Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| :---: | :---: | :---: |
| ENGL 1033 | Technical Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| Science state minimum electives (two courses with labs) |  | 8 |
| Fine Arts state minimum core |  | 3 |
| Humanities state minimum core |  |  |
| PHIL 3103 | Ethics and the Professions | 3 |

U.S. History and Government state minimum core 3

| HIST 2003 | History of the American People to 1877 (ACTS <br> Equivalency = HIST 2113) |
| :--- | :--- |

or HIST 201!History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
or PLSC 20CAmerican National Government (ACTS Equivalency = PLSC 2003)
Social Science state minimum core electives 6
ECON 2143 Basic Economics: Theory and Practice (represents 3 3 of the 9 required credit hours for Social Science elective)

| Data Science | Required Core (47 hours) |  |
| :--- | :--- | :--- |
| DASC 1003 | Introduction to Data Science | 3 |
| DASC 1104 | Programming Languages for Data Science (R, <br> Python) | 4 |
| DASC 1204 | Introduction to Object Oriented Programming for <br> Data Science (JAVA) | 4 |
| DASC 2594 | Multivariable Math for Data Scientists | 4 |
| DASC 1223 | Role of Data Science in Today's World | 3 |
| DASC 2113 | Principles and Techniques of Data Science | 3 |
| DASC 2203 | Data Management and Data Base | 3 |
| DASC 2213 | Data Visualization and Communication (Tableau) | 3 |
| DASC 3103 | Cloud Computing and Big Data | 3 |
| DASC 3203 | Optimization Methods in Data Science | 3 |
| DASC 3213 | Statistical Learning | 3 |
| DASC 4892 | Data Science Practicum I | 2 |
| DASC 4113 | Machine Learning | 3 |
| DASC 4123 | Social Problems in Data Science and Analytics | 3 |
| DASC 4993 | Data Science Practicum II | 3 |


| Data $\operatorname{Science}$ Required Additional Courses |  |  |
| :--- | :--- | ---: |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| SEVI 2053 | Business Foundations | 3 |
| Choose from one of these two-course sequences | $6-7$ |  |


| Choose from one of these two-course sequences |  |
| :--- | :--- |
| STAT 3013 | Introduction to Probability |
| \& STAT 3003 | and Statistical Methods (Statistical Methods) |
| Or |  |
| INEG 2323 | Probability and Stochastic Processes for Industrial |
| \& INEG 2314 | Engineers <br> and Statistics for Industrial Engineers I |

Data Science Concentration Courses ..... 20-21
General Electives ..... 2-4
Total Hours ..... 120
Required Social Data Analytics Concentration Courses

| SOCI 2013 | General Sociology (ACTS Equivalency = SOCI <br> 1013) | 3 |
| :--- | :--- | ---: |
| SOCI 3303 | Social Data and Analysis | 3 |
| SOCI 3301L | Social Data and Analysis Laboratory | 1 |
| SOCI 3313 | Social Research | 3 |
| Elective Social Data Analytics Concentration Courses (Select 10 | 10 |  |
| hours) |  |  |
| GEOS 3013 | Foundations of Geospatial Data Analysis |  |
| GEOS 3543 | Geospatial Applications and Information Science |  |
| GEOS 3563 | Geospatial Data Mining |  |
| GEOS 4553 | Introduction to Raster GIS |  |
| PLSC 3603 | Scope and Methods of Political Science |  |
| PLSC 4213 | Campaigns and Elections |  |
| SCWK 4073 | Social Work Research and Technology I |  |
| SOCI 4013 | Special Topics in Sociology |  |
| SOCI 4183 | Social Network Analysis |  |

## Total Hours

## Data Science B.S. with Social Data Analytics Concentration Eight-Semester Program

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) | 4 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| DASC 1003 Introduction to Data Science | 3 |  |
| DASC 1104 Programming Languages for Data Science | 4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |
| ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) |  | 3 |
| ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) |  | 3 |
| DASC 1204 Introduction to Object Oriented Programming for Data Science |  | 4 |
| DASC 1223 Role of Data Science in Today's World |  | 3 |
| Year Total: | 14 | 17 |


| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 2594 Multivariable Math for Data Scientists | 4 |  |

STAT 3013 Introduction to Probability ${ }^{4}$

Processes for Industrial Engineers
DASC 2213 Data Visualization and Communication
DASC 2113 Principles and Techniques of Data Science
State Minimum Core U.S. History or Government
Elective (Satisfies General Education Outcome $4.2)^{2}$
SEVI 2053 Business Foundations (Data Science
Majors-only section)
STAT 3003 Statistical Methods ${ }^{4}$
or INEG 2314 Statistics for Industrial Engineers I
State Minimum Core Natural Science Elective with
Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$
DASC 2203 Data Management and Data Base
SOCI 2013 General Sociology (ACTS Equivalency
= SOCI 1013) (Satisfies General Education
Outcomes 3.3, 4.1, and 4.2) ${ }^{5}$
Year Total:

| Third Year |  |
| :---: | :---: |
|  | Fall |
| DASC 2133 Data Privacy \& Ethics (Satisfies General Education Outcome 5.1) | 3 |
| DASC 3103 Cloud Computing and Big Data | 3 |
| State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) ${ }^{2}$ | 4 |
| SOCI 3303 Social Data and Analysis | 3 |
| SOCI 3301L Social Data and Analysis Laboratory | 1 |
| SOCI 3313 Social Research | 3 |
| DASC 3203 Optimization Methods in Data Science |  |
| DASC 3213 Statistical Learning |  |
| SOCI 4253 Social Impact of Data Analytics |  |
| State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3) ${ }^{2}$ |  |
| Year Total: | 17 |

Fourth Year Fall

DASC 4892 Data Science Practicum I 2
DASC 4113 Machine Learning 3
DASC 4123 Social Problems in Data Science and 3
Analytics
Social Data Analytics Elective
3
Social Data Analytics Elective 3
DASC 4993 Data Science Practicum II (Satisfies
General Education Outcome 6.1)
General Education Electives ${ }^{3}$
State Minimum Core Fine Arts Elective (Satisfies
General Education Outcome 3.1) ${ }^{2}$
Social Data Analytics Elective
Year Total:

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 81), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{3}$ Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
${ }^{4}$ Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.
5 SOCI 2013 General Sociology is a required course for the Social Data Analytics Concentration. The course may also be used to meet three hours toward the State Minimum Core Social Science requirements. As such, students may complete three hours of general education electives in lieu of an additional State Minimum Core Social Science requirement for a total of 7 hours of general education electives.

## Requirements for B.S. in Data Science with Supply Chain Analytics Concentration

Below are the general requirements for a Bachelor of Science degree with a major in Data Science, followed by specific requirements for the Supply Chain Analytics Concentration. Below those is a recommended eightsemester plan to achieve those requirements in a timely fashion.

## Requirements for B.S. in Data Science

Each student in Data Science is required to complete 120 hours of coursework including the state minimum core ( p .81 ). To be eligible for graduation, all students must complete at least 60 hours of Data Science (DTSC) Core required classes at the University of Arkansas. Each student in Data Science is also required to complete an additional 20-21 hours (depending on the student's chosen concentration) of required and elective concentration courses to meet the requirements for a concentration.

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

State Minimum Core and General Education ( 36 hours)

| ENGL 1013 | Composition I (ACTS Equivalency $=$ ENGL 1013) | 3 |
| :--- | :--- | :--- |
| ENGL 1033 | Technical Composition II (ACTS Equivalency $=$ | 3 |

ENGL 1033 Technical Composition II (ACTS Equivalency = 3 ENGL 1023)
MATH $2554 \quad$ Calculus I (ACTS Equivalency $=$ MATH 2405) 4
Science state minimum electives (two courses with labs) 8
Fine Arts state minimum core 3
Humanities state minimum core
PHIL 3103 Ethics and the Professions 3
U.S. History and Government state minimum core 3

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)


DASC 2203 Data Management and Data Base
ACCT 2013 Accounting Principles (This pre-req to SYDA Concentration courses uses the "General Elective" to allow a full 21 hours for Concentration courses)
Year Total:


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| DASC 4892 Data Science Practicum I | 2 |  |
| DASC 4113 Machine Learning | 3 |  |
| DASC 4123 Social Problems in Data Science and <br> Analytics <br> SCMT 3613 SOURCE: Procurement and Supply <br> Management <br> SCMT 3623 PLAN: Inventory and Forecasting | 3 |  |
| Analytics <br> DASC 4993 Data Science Practicum II (Satisifies <br> General Education Outcome 6.1) <br> SCMT 3663 MAKE: Supply Chain Process <br> Improvement <br> SCMT 4653 Supply Chain Strategy and Change <br> Management <br> Supply Chain Analytics Concentration Elective | 3 | 3 |
| Year Total: |  | 3 |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
${ }^{2}$ Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General

Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
3 Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
4 Data Science Statistics and Computational Analytics Concentration students are advised to select STAT 3013/STAT 3003 to meet the prerequisites required in the concentration.

## Faculty

Alverson, Andrew James, Ph.D. (University of Texas at Austin), M.S. (lowa State University), B.S. (Grand Valley State University), Associate Professor, Department of Biological Sciences, 2012, 2018.
Barrett, David A., Ph.D., M.A. (University of Arkansas), B.A. (Hendrix College), Instructor, Department of Philosophy, 2014.
Cothren, Jackson David, Ph.D., M.S. (The Ohio State University),
B.S. (United States Air Force Academy), Professor, Department of Geosciences, Leica Geosystems Chair in Geospatial Imaging, 2004, 2020.

Cronan, Timothy P., Ph.D. (Louisiana Tech University), M.S. (South Dakota State University), B.S. (University of Southwestern Louisiana), Professor, Department of Information Systems, M.D. Matthews Endowed Chair in Information Systems, 1979.
Cummings, Michael, Ph.D. (University of Minnesota), J.D. and M.P.A.
(Brigham Young University), B.S. (Utah Valley), Assistant Professor, Department of Strategic, Entrepreneurship and Venture Innovation, 2017.
Fugate, Brian, Ph.D., M.B.A., B.S. (University of Tennessee), Professor, J.B. Hunt Transport Department of Supply Chain Management, Oren Harris Chair in Transportation, 2015, 2018.
Gauch, John Michael, Ph.D. (University of North Carolina at Chapel Hill), M.Sc., B.Sc. (Queen's University, Canada), Professor, Department of Computer Science and Computer Engineering, 2008.
Gruenewald, Jeffrey A., Ph.D. (Michigan State University), Professor, Department of Sociology and Criminology, 2019, 2022.
Harris, Casey Taggart, Ph.D., M.A. (Pennsylvania State University), B.S. (Texas A\&M University), Professor, Department of Sociology and Criminology, 2011, 2023.
Keiffer, Elizabeth, Ph.D., M.A. (University of Arkansas), B.S. (East Central University), Teaching Assistant Professor, Department of Information Systems, 2016, 2019.
Nakarmi, Ukash, Ph.D. (University at Buffalo), M.S. (Oklahoma State 3 University), Assistant Professor, Department of Computer Science and Computer Engineering, 2020.
3 Pohl, Edward A., Ph.D., M.S.R.E. (University of Arizona), M.S.S.E. (Air Force Institute of Technology), M.S.E.M. (University of Dayton), B.S.E.E. (Boston University), Professor, Department of Industrial Engineering, Twenty-First Century Professorship in Engineering, 2004, 2013.
Rao, Raj R., Ph.D. (University of Georgia), M.S. (University of Texas), M.Sc., B.E. (Birla Institute of Technology and Sciences, India), Professor, Department of Biomedical Engineering, 2016.
Richardson, Vernon J., Ph.D. (University of Illinois-Urbana-Champaign), M.B.A., B.S. (Brigham Young University), Distinguished Professor, William Dillard Department of Accounting, G. William Glezen Jr. Endowed Chair in Accounting, 2005, 2016.
Ridge, Jason, Ph.D., M.A., B.A. (Oklahoma State University), Associate Professor, Department of Strategic, Entrepreneurship and Venture Innovation, 2015, 2017.

Robinson, Samantha, Ph.D., M.S., B.S. (University of Arkansas), Teaching Associate Professor, Department of Mathematical Sciences, Julia A. Hicks Chair, 2015, 2022.
Rosales, Claudia, Ph.D., M.S. (University of Cincinnati), B.S. (Universidad Rafael Landivar), Assistant Professor, J.B. Hunt Transport Department of Supply Chain Management, 2021.
Rossetti, Manuel D., Ph.D., P.E., M.S.I.E. (The Ohio State University), B.S.I.E. (University of Cincinnati), University Professor, Department of Industrial Engineering, 1999, 2022.
Schubert, Karl, Ph.D. (University of Arkansas), M.S.Ch.E. (University of Kentucky), B.S.Ch.E (University of Arkansas), Professor of Practice, Department of Industrial Engineering, 2016.
Sullivan, Kelly M., Ph.D. (University of Florida), M.S.I.E., B.S.I.E. (University of Arkansas), Associate Professor, Department of Industrial Engineering, 2012, 2019.
Wu, Xintao, Ph.D. (George Mason University), M.E. (Chinese Academy of Space Technology), B.S. (University of Science and Technology of China), Professor, Department of Computer Science and Computer Engineering, Charles D. Morgan/Acxiom Graduate Research Chair, 2014, 2019.

## Courses

DASC 1003. Introduction to Data Science. 3 Hours.
Introduction to Data Science is a course providing an overview of Data Science and preparation of Data Science First Year students for the Data Science program and for choosing one of the Data Science program concentrations. Corequisite: MATH 2554 or MATH 2554 C or MATH 2445. Prerequisite: Students must be a DTSCBS or DTSCFR major. (Typically offered: Fall)

DASC 1003H. Honors Introduction to Data Science. 3 Hours.
Introduction to Data Science is a course providing an overview of Data Science and preparation of Data Science First Year students for the Data Science program and for choosing one of the Data Science program concentrations. Corequisite: MATH 2554 or MATH 2554C or MATH 2445. Prerequisite: Students must have honors standing and be a DTSCBS or DTSCFR major. (Typically offered: Fall) This course is equivalent to DASC 1003.

DASC 1011. Success in Data Science Studies. 1 Hour.
This course provides preparation for Data Science First Year students for the Data Science program and for learning about University campus resources for students. This course is focused on students who are not MATH 2554 Calculus I or MATH 2445 Calculus I with Review ready. Prerequisite: Students must be a Data Science Major. (Typically offered: Fall)

## DASC 1104. Programming Languages for Data Science. 4 Hours.

Programming Languages for Data Science provides a semester-long introduction to basic concepts, tools, and languages for computer programming using Python and R, two powerful programming languages used by data scientists. This class will introduce students to computer programming and provide them with the basic skills and tools necessary to efficiently collect, process, analyze, and visualize datasets. Students will gain hands-on experience with de novo programming in $R$ and Python, finding and utilizing packages, and working in both interactive (Jupyter and RStudio) and non-interactive (Unix) environments. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major. (Typically offered: Fall)

DASC 1204. Introduction to Object Oriented Programming for Data Science. 4 Hours.
Introduction to Object Oriented Programming for Data Science, introduces objectoriented programming in JAVA. It covers object-oriented programming elements and techniques in JAVA, such as primitive types and expressions, basic I/O, basic programming structures, abstract data type, object class and instance, Methods, Java File I/O, object inheritance, collections and composite objects, advanced input / output: streams and files, and exception handling. Students will gain hands-on programming experience using JAVA. Corequisite: Lab component. Prerequisite: DASC 1104 and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)

DASC 1223. Role of Data Science in Today's World. 3 Hours.
Role of Data Science in Today's World is a survey course providing an overview of the Data Science Curriculum and an introduction to the essential elements of data science: data collection and management; summarizing and visualizing data; basic ideas of statistical inference; predictive analytics and machine learning. Students will continue their hands-on experience using the Python and R programming languages and Jupyter notebooks. Prerequisite: DASC 1003 and DASC 1104 and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)
DASC 1223H. Honors Role of Data Science in Today's World. 3 Hours.
Role of Data Science in Today's World is a survey course providing an overview of the Data Science Curriculum and an introduction to the essential elements of data science: data collection and management; summarizing and visualizing data; basic ideas of statistical inference; predictive analytics and machine learning. Students will continue their hands-on experience using the Python and R programming languages and Jupyter notebooks. Prerequisite: DASC 1003, DASC 1104, honors standing and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)
This course is equivalent to DASC 1223.
DASC 188V. Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
DASC 188VH. Honors Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major, have honors standing and by instructor permission only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 188 V .
DASC 2103. Data Structures \& Algorithms. 3 Hours.
Data Structures \& Algorithms focuses on fundamental data structures and associated algorithms for computing and data analytics. Topics include the study of data structures such as linked lists, stacks, queues, hash tables, trees, and graphs, recursion, their applications to algorithms such as searching, sorting, tree and graph traversals, divide-and-conquer, greedy algorithms, and dynamic programming, and the theory of NP-completeness. Students will gain hands-on experience using Python or Java. Prerequisite: DASC 1204 and must be a DTSCBS major. (Typically offered: Spring)

## DASC 2113. Principles and Techniques of Data Science. 3 Hours.

Principles and Techniques in Data Science is an intermediate semester-long data science course that follows an overview of data science in today's world. This class bridges between introduction to data science and upper division data science courses as well as methods courses in other concentrations. This class equips students with essential basic elements of data science, ranging from database systems, data acquisition, storage and query, data cleansing, data wrangling, basic data summarization and visualization, and data estimation and modeling. Students will gain hands-on experience using Python and various packages in Python. Corequisite: Lab component. Prerequisite: MATH 2564 and student must be a DTSCBS major. (Typically offered: Fall)

DASC 2133. Data Privacy \& Ethics. 3 Hours.
Data Privacy and Ethics (DASC 2133) explores the intersection of ethics and contemporary (big) data analytics. In particular, we will discuss how data analytics impacts ethical issues like privacy, autonomy, transparency, discrimination, data ownership, and justice, while also investigating its impact on the cohesiveness of society and democracy. Pre- or Corequisite: DASC 1001 and must be a DTSCBS or DTSCFR major. (Typically offered: Fall)
DASC 2203. Data Management and Data Base. 3 Hours.
Data Management and Data Base focuses on the investigation and application of data science database concepts including DBMS fundamentals, database technology and administration, data modeling, SQL, data warehousing, and current topics in modern database management. Prerequisite: MATH 2564, DASC 1204 and students must be a DTSCBS major. (Typically offered: Spring)

DASC 2213. Data Visualization and Communication. 3 Hours.
Data Visualization and Communication is a seminar providing an essential element of data science: the ability to effectively communicate data analytics findings using visual, written, and oral forms. Students will gain hands-on experience using data visualization software and preparing multiple formats of written reports (technical, social media, policy) that build a data literacy and communication toolkit for interdisciplinary work. In essence, this is a course emphasizing finding and telling stories from data, including the fundamental principles of data analysis and visual presentation conjoined with traditional written formats. Prerequisite: DASC 1104 and DASC 1222 and students must be a DTSCBS major. (Typically offered: Fall)

## DASC 2594. Multivariable Math for Data Scientists. 4 Hours.

Multivariable Mathematics for Data Scientists provides an in depth look at the multivariate calculus and linear algebra necessary for a successful understanding of modeling for data science. Students will gain an understanding of the mathematical and geometric concepts used in optimization and scientific computation using mathematical and computational techniques. At the end of the course, students will be equipped with the calculus and linear algebra skills and knowledge to be successful in courses in optimization and advanced data science methods. Corequisite: Lab component. Prerequisite: MATH 2564 and DASC 1104 and student must be a DTSCBS major. (Typically offered: Fall)
DASC 290V. Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

DASC 290VH. Honors Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Honors standing and students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 290 V .

## DASC 3103. Cloud Computing and Big Data. 3 Hours.

Cloud Computing and Big Data covers: introduction to distributed data computing and management, MapReduce, Hadoop, cloud computing, NoSQL and NewSQL systems, Big data analytics and scalable machine learning, real-time streaming data analysis. Students will gain hands-on experience using Amazon AWS, MongoDB,
Hive, and Spark. Prerequisite: DASC 2594 and DASC 2203 and student must be a DTSCBS major. (Typically offered: Fall)

## DASC 3103H. Honors Cloud Computing and Big Data. 3 Hours.

Cloud Computing and Big Data covers: introduction to distributed data computing and management, MapReduce, Hadoop, cloud computing, NoSQL and NewSQL systems, Big data analytics and scalable machine learning, real-time streaming data analysis. Students will gain hands-on experience using Amazon AWS, MongoDB, Hive, and Spark. Prerequisite: DASC 2594, DASC 2203, honors standing and student must be a DTSCBS major. (Typically offered: Fall)
This course is equivalent to DASC 3103.

DASC 3203. Optimization Methods in Data Science. 3 Hours.
Optimization Methods in Data Science is an advanced mathematical course providing the foundations and concepts of optimization that are essential elements of machine learning algorithms in data science, ranging from mathematical optimization to convex optimization to unconstrained and constrained optimization to nonlinear optimization to stochastic optimization. Students will gain hands-on experience using Python and various optimization packages in Python. Prerequisite: DASC 2113 and DASC 2594 and student must be a DTSCBS major. (Typically offered: Spring)

## DASC 3213. Statistical Learning. 3 Hours.

Statistical Learning is a course providing an in depth look at the theory and practice of applied linear modeling for data science: including model building, selection, regularization, classification and prediction. Students will gain hands-on experience using statistical software to learn from data using applied linear models. Prerequisite: DASC 1104 and ((MATH 3013 and STAT 3003) or (INEG 2314 and INEG 2323)) and student must be a DTSCBS major. (Typically offered: Spring)

## DASC 3223. Cyber Crime and Cyber Terrorism. 3 Hours.

Cyber Crime and Cyber Terrorism (CCCT) is an overview of the study of cybercrime and cyber terrorism for students of data science, criminology, and law discussing crimes committed via Internet, ranging from various white-collar financial crimes to the spread of viruses, malicious code, stalking, bullying, and web-based exploitation. Criminological, social-psychological explanations will be examined and the investigative and legal strategies employed to combat cyber-crime and cyber terrorism will be discussed. Prerequisite: DASC 2113 and must be a DTSCBS major. (Typically offered: Fall)

## DASC 390V. Special Topics in Data Science. 1-6 Hour.

Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Student must be a DTSCBS or DTSCFR major and by Permission Only. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## DASC 390VH. Honors Special Topics in Data Science. 1-6 Hour.

Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Student must have honors standing, be a DTSCBS or DTSCFR major and by permission only. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 390V.
DASC 400VH. Honors Thesis in Data Science. 1-3 Hour.
Honors Thesis in Data Science (DASC 400VH) is a course to develop an Honors Thesis in Data Science. The Honors Thesis can be an independent thesis or can be related to the Data Science Practicum I and II Courses Project. Prerequisite: Student must be a DTSCBS major, have honors standing, and by Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## DASC 4113. Machine Learning. 3 Hours.

Machine learning covers: logistic regression, ensemble methods, support vector machines, kernel methods, neural networks, Bayesian inference, reinforcement learning, learning theory, and their applications in text, image, and web data processing. Students will gain hands-on experience of developing machine learning algorithms using Python and scikit-learn. Prerequisite: DASC 2103 and DASC 3203 and student must be a DTSCBS major. (Typically offered: Fall)

## DASC 4113H. Honors Machine Learning. 3 Hours.

Machine learning covers: logistic regression, ensemble methods, support vector machines, kernel methods, neural networks, Bayesian inference, reinforcement learning, learning theory, and their applications in text, image, and web data processing. Students will gain hands-on experience of developing machine learning algorithms using Python and scikit-learn. Prerequisite: DASC 2103, DASC 3203, honors standing and student must be a DTSCBS major. (Typically offered: Fall) This course is equivalent to DASC 4113.

DASC 4123. Social Problems in Data Science and Analytics. 3 Hours.
This course explores the ways data analytics and data science are impacted by or intersect with issues of social justice, poverty and economic inequality, racial and ethnic relations, gender, crime, education, health and healthcare, and other contemporary social problems. Prerequisite: DASC 1222 and student must be a DTSCBS major. (Typically offered: Fall)

DASC 4533. Information Retrieval. 3 Hours.
Information Retrieval is a course providing expertise in processing unstructured data as a key component of data science. It covers text processing, file structures, ranking algorithms, query processing, and web search. Students will gain handson experience developing their own search engine from scratch, using Python, C, C++, or Java on a Linux server and making their search engine web accessible. Note: Prior user-level knowledge of Linux for file and directory management and remote login is required for this course. Corequisite: Lab component. Prerequisite: DASC 2103 and student must be a DTSCBS major. (Typically offered: Irregular)

## DASC 4892. Data Science Practicum I. 2 Hours.

Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the first semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve realworld problems. Prerequisite: DASC 2113, DASC 2213, DASC 3203, ((STAT 3013 and STAT 3003) or (INEG 2314 and INEG 2323)), and student must be a DTSCBS major. Pre- or Corequisite: DASC 3213, DASC 4113, and DASC 4123. (Typically offered: Fall)
DASC 4892H. Honors Data Science Practicum I. 2 Hours.
Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the first semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve realworld problems. Prerequisite: DASC 2113, DASC 2213, DASC 3203, ((STAT 3013 and STAT 3003) or (INEG 2314 and INEG 2323)), honors standing and the student must be a DTSCBS major. Pre- or Corequisite: DASC 3213, DASC 4113, and DASC 4123. (Typically offered: Fall)
This course is equivalent to DASC 4892.
DASC 490V. Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Students must be a DTSCBS major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

DASC 490VH. Honors Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Honors standing and students must be a DTSCBS major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 490 V .

## DASC 4993. Data Science Practicum II. 3 Hours.

Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the second semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve real-world problems. Corequisite: Lab component. Prerequisite: DASC 4892 with a grade of $C$ or better and student must be a DTSCBS major. (Typically offered: Spring)

DASC 4993H. Honors Data Science Practicum II. 3 Hours.
Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the second semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve real-world problems. Corequisite: Lab component. Prerequisite: DASC 4892 with a grade of $C$ or better, and student must be a DTSCBS major, and have honors standing. (Typically offered: Spring)
This course is equivalent to DASC 4993.

## Earth Science (ERSC)

Jill A. Marshall

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Earth Science Webpage (https://fulbright.uark.edu/departments/ geosciences/undergraduate/erscbs.php)

Fulbright College offers a major in earth science leading to the Bachelor of Science degree. Prospective secondary teachers may plan a program, in cooperation with the College of Education, which will satisfy the teacher licensure requirements. Students interested in environmental problems, teaching earth science in public schools, or wishing to pursue graduate work in either geography or geology will obtain much of the necessary foundation through this degree. Because the program outlined below lists only minimum science requirements, it is expected that most students will use some of their elective credit hours to strengthen their mathematics and science backgrounds in areas other than geography and geology. These areas of additional study will be determined through consultation between the student and the adviser.

## Requirements for the B.S. Degree with a Major in Earth

Science: In addition to the University Core (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/) requirements and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the University/ state minimum core requirements.

## Basic Courses

Biology 8
Chemistry or Physics 8

GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 4
\& GEOS 1111L 1114 Lecture)
and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency = GEOL 1124
\& GEOS 1131L Lecture)
and Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)
Select one of the following:
MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203)

MATH 2053 Finite Mathematics
MATH 2183 Mathematical Reasoning in a Quantitative World
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)

Total Hours 65-66

1 World language courses taken are dependent on placement level in sequence.

Writing Requirement:The college writing requirement is to be met by completion of a term paper deemed satisfactory by the student's adviser and instructor of an upper-level geoscience course. The college writing requirement may also be met by the completion of an honors thesis.

## Earth Science B.S. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) | 3 |  |
| Select one of the following: | 3-4 |  |
| MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103) |  |  |
| MATH 2043 Survey of Calculus (ACTS Equivalency $=$ MATH 2203) ${ }^{1}$ |  |  |
| MATH 2053 Finite Mathematics ${ }^{1}$ |  |  |
| MATH 2183 Mathematical Reasoning in a Quantitative World ${ }^{1}$ |  |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) ${ }^{1}$ |  |  |
| GEOS 1113 Physical Geology (ACTS Equivalency <br> = GEOL 1114 Lecture) | 4 |  |
| \& GEOS 1111L Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab) |  |  |
| 1013 Elementary II World Language Course (or higher level) | 3 |  |

University/State Core US History requirement 3

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
Select one of the following MATH if still needed, else General Elective:

MATH 2043 Survey of Calculus (ACTS
Equivalency $=$ MATH 2203) ${ }^{1}$
MATH 2053 Finite Mathematics ${ }^{1}$
MATH 2183 Mathematical Reasoning in a Quantitative World ${ }^{1}$
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) ${ }^{1}$
General Elective
GEOS 1133 Earth Science (ACTS Equivalency =
GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory (ACTS
Equivalency $=$ GEOL 1124 Lab)
2003 Intermediate I World Language Course (or higher level)
University/State Core Fine Arts or Humanities
Course requirement
Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| GEOS 2313 Mineralogy | 3 |  |
| CHEM or PHYS Course (as needed) | 4 |  |
| University/State Core Humanities or Fine Arts <br> Course requirement (as needed) | 3 |  |
| University/State Core Social Science requirement <br> General Elective | 3 |  |
| ASTR 2003 Survey of the Universe (ACTS | 3 | 4 |
| Equivalency = PHSC 1204 Lecture) <br> \& ASTR 2001L Survey of the Universe Laboratory <br> (ACTS Equivalency = PHSC 1204 Lab) <br> GEOS 3413 Sedimentary Geology <br> CHEM or PHYS Course (as needed) <br> University/State Core Social Science requirement <br> Year Total: |  | 3 |
| Third Year | 16 | 4 |

$\begin{array}{ll}\text { GEOS } 3043 \text { Sustaining Earth } & 3 \\ \text { BIOL Course (as needed) } & 4\end{array}$
Advanced Level Elective ${ }^{1} 3$
GEOS 4033 Hydrogeology (Sp) 3
General Elective 1
Year Total: 16
BIOL Course (as needed) 4
GEOS 3023 Introduction to Cartography ${ }^{1,2} 3$
University/State Core Social Science requirement 3
Advanced Level Elective ${ }^{1}$
Advanced Level Elective ${ }^{1}$

Units

Units

| Fourth Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Select one of the following: <br> GEOS 4353 Meteorology (as needed) ${ }^{1,2}$ or Advanced Level Elective ${ }^{1}$ | 3 |  |
| Upper Level GEOS Course ${ }^{1,2}$ | 3 |  |
| 3000-plus Level Elective ${ }^{1}$ | 3 |  |
| General Electives | 6 |  |
| GEOS 4924 Earth System History (ACTS Equivalency = PHSC 1104) |  | 4 |
| Select one of the following GEOS 4363 Climatology or Advanced Level Elective ${ }^{1}$ |  | 3 |
| Upper Level GEOS Course ${ }^{1,2}$ |  | 3 |
| 3000-plus Level Elective ${ }^{1}$ |  | 3 |
| Year Total: | 15 | 13 |

## Total Units in Sequence:

${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273).
2 Meets 24-hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations (p. 273).

## Teacher Licensure Requirements:

Students interested in pursuing a minor in STEM Education or Secondary Teacher Licensure in mathematics, biology, chemistry, physics, or computer science at the undergraduate level should consult with a STEM Education faculty adviser, teach@uark.edu. Another option to obtain secondary teacher licensure is to complete the one-year Master of Arts in Teaching (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/ mathematicalsciencesmasc/graduatecatalog/programsofstudy/ teachereducation/).

## Courses

GEOS 1111L. Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab). 1 Hour.
Laboratory exercises concerning the identification of rocks and minerals, use of aerial photographs and topographic maps, and several field trips. Pre- or Corequisite: GEOS 1113. (Typically offered: Fall, Spring and Summer)
GEOS 1111M. Honors Physical Geology Laboratory. 1 Hour.
Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOS 1113H. (Typically offered: Fall) This course is equivalent to GEOS 1111L.
GEOS 1113. Physical Geology (ACTS Equivalency = GEOL 1114 Lecture). 3 Hours.
Survey of geological processes and products, and their relationships to landforms, natural resources, living environments and human beings. Corequisite: GEOS 1111L. (Typically offered: Fall, Spring and Summer)

GEOS 1113H. Honors Physical Geology. 3 Hours.
Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOS 1111M. (Typically offered: Irregular)
This course is equivalent to GEOS 1113.
GEOS 1123. Human Geography (ACTS Equivalency = GEOG 1113). 3 Hours. Basic course in human geography stressing the interrelationships between the natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities. (Typically offered: Fall and Spring)

## GEOS 1123H. Honors Human Geography. 3 Hours.

Basic course in human geography stressing the interrelationships between the natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring) This course is equivalent to GEOS 1123.
GEOS 1131L. Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab). 1 Hour.
Laboratory exercises concerning human interactions with the physical environment including the study of earthquakes, volcanoes, flooding, erosion, mass wasting, water supply and contamination, and waste disposal. (Typically offered: Fall and Spring)
GEOS 1133. Earth Science (ACTS Equivalency = GEOL 1124 Lecture). 3 Hours.
The application of earth science principles and knowledge of problems created by human occupancy and exploitation of the physical environment. (Typically offered: Fall and Spring)

## GEOS 1154. Introduction to Geology for Science Majors. 4 Hours.

Survey of geological processes and materials and their relationships to landforms, natural resources, environments, and human beings. Students will understand the principles of physical geology, Earth's internal structure, plate tectonics, and geologic time. Students may not receive degree credit for both GEOS 1113/GEOS 1111L and GEOS 1154. Corequisite: Lab component. Prerequisite: Freshman or sophomore standing, or by instructor consent. (Typically offered: Fall)
GEOS 2003. World Regional Geography (ACTS Equivalency = GEOG 2103). 3 Hours.
Survey of problems, development potential, and physical and human resources of the developing and developed world. (Typically offered: Fall and Spring)
GEOS 2003H. Honors World Regional Geography. 3 Hours.
Survey of problems, development potential, and physical and human resources of the developing and developed world. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to GEOS 2003.

## GEOS 2313. Mineralogy. 3 Hours.

General principles of mineralogy, study and identification of common minerals, igneous \& metamorphic rocks using hand samples. Prerequisite: (GEOS 1113 or GEOS 1154) and CHEM 1103. Corequisite: Lab component. (Typically offered: Fall)

## GEOS 2813. Digital Earth. 3 Hours.

This course introduces the fundamental concepts and practical geospatial techniques of the digital earth initiative. Students will learn how digital geographical information is produced (also referred to as geospatial data) and utilized in a variety of economic, environmental, and scientific applications. The class will concentrate on how digital geospatial data are produced, integrated and applied in daily life and will review a variety of environmental and socioeconomic applications. (Typically offered: Fall)

## GEOS 2813H. Honors Digital Earth. 3 Hours.

This course introduces the fundamental concepts and practical geospatial techniques of the digital earth initiative. Students will learn how digital geographical information is produced (also referred to as geospatial data) and utilized in a variety of economic, environmental, and scientific applications. The class will concentrate on how digital geospatial data are produced, integrated and applied in daily life and will review a variety of environmental and socioeconomic applications. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to GEOS 2813.

## GEOS 3013. Foundations of Geospatial Data Analysis. 3 Hours.

Basic mathematical tools applied in geospatial technology, including trigonometry in mapping, linear algebra in remote sensing, optimization in spatial decision support, and graph theory in routing. Course develops the framework for spatial data analysis and decision support. Students may receive credit for the course through testing. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

GEOS 3023. Introduction to Cartography. 3 Hours.
Students learn basic principles of map design, cartographic theory and field surveying to produce a variety of computer-generated maps. An introductory course designed for students in a variety of different disciplines using AutoCad software and various new technologies. Field trips may be required. (Typically offered: Fall)

GEOS 3043. Sustaining Earth. 3 Hours.
Theory and growth of conservation and sustainability, the wise use of the major natural resources of the United States. This course meets the requirement in conservation and sustainability for teachers. Prerequisite: Junior standing. (Typically offered: Fall)

## GEOS 3043H. Honors Sustaining Earth. 3 Hours.

Theory and growth of conservation and the wise use of the major natural resources of the United States. This course meets the requirement in conservation for teachers. Prerequisite: Junior standing. (Typically offered: Fall)
This course is equivalent to GEOS 3043.
GEOS 3063. Geology of Arkansas. 3 Hours.
A survey of the distribution, genesis, and age of the rocks, fossils, structures, landforms and geological processes of Arkansas. Equivalent to two hours of lecture per week. Field trips required. Prerequisite: (GEOS 1113 or GEOS 1113H or GEOS 1154). (Typically offered: Spring)

GEOS 3103. Geospatial Technologies Computational Toolkit. 3 Hours. Basic computational tools and processes applied in geospatial software, related computer hardware components, systems and applications software, and spatial database fundamentals. Python, including SciPy and NumPy, geospatial implementations will be emphasized. No programming experience is required. Students may receive credit for the course through testing. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

## GEOS 3213. Principles of Remote Sensing. 3 Hours.

Fundamental concepts of remote sensing of the environment. Optical, infrared, microwave, LIDAR, and in situ sensor systems are introduced. Remote sensing of vegetation, water, urban landscapes, soils, minerals, and geomorphology is discussed. The course includes laboratory exercises in GIS software and field spectroscopy. (Typically offered: Fall)

## GEOS 3333. Oceanography. 3 Hours.

The sea, its landforms; its winds and currents as related to the atmosphere, world climates, and world trade; its basin as avenues for continental drift; its waters as habitat for plant and animal life; its marine and submarine resources as presently and potentially useful to man. Offered as physical science. Prerequisite: Junior standing. (Typically offered: Fall)

GEOS 3413. Sedimentary Geology. 3 Hours.
An introductory study of sedimentary rocks from the standpoint of classification, field and laboratory description, genesis, and preservation. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOS 2313. (Typically offered: Spring)

## GEOS 3514. Structural Geology. 4 Hours.

Survey of deformational features and their geological significance in the crust of the earth. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: GEOS 1113 or GEOS 1154. (Typically offered: Spring)
GEOS 3543. Geospatial Applications and Information Science. 3 Hours.
An introduction to the methods and theory underlying the full range of geographic information science and collateral areas - including GNSS, remote sensing, cadastral, spatial demographics and others. (Typically offered: Fall and Spring) This course is cross-listed with ANTH 3543.

## GEOS 3553. Spatial Analysis Using ArcGIS. 3 Hours.

Applications of analysis of spatial data using ArcGIS tools in map design, on-line mapping, creating geodatabases, accessing geospatial data, geo-processing, digitizing, geocoding, spatial analysis including basic spatial statistics, analysis of spatial distributions and patterning and 3D application using ArcGIS 3D Analyst. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

## GEOS 3563. Geospatial Data Mining. 3 Hours.

Basic tools for analyzing, summarizing and visualizing geospatial data. Exploratory data and spatial data analysis, probability distributions and application, single and multivariate analysis and hypothesis testing, and spatial smoothing and interpolation. Emphasis will be on problem solving in geospatial settings using the R statistical language. Prerequisite: GEOS 3543 and (GEOS 3013 or MATH 2554 or MATH 2043 or DASC 2594) and (GEOS 3103 or DASC 1104 or DASC 2113). (Typically offered: Fall and Spring)

## GEOS 3593. Introduction to Geodatabases. 3 Hours.

Fundamental concepts and applications of geospatial databases. Schema development and spatial data models for geodata. Spatial and attribute query and optimization, properties and structures of relational and object-oriented geodatabases. Spatial extensions of SQL, spatial indexing, measurement, and geometry. Prerequisite: GEOS 3543 and (GEOS 3013 or MATH 2554 or MATH 2043 or DASC 2594) and (GEOS 3103 or DASC 1104 or DASC 2113). (Typically offered: Fall and Spring)

GEOS 360V. Undergraduate Special Problems. 1-6 Hour.
Library, laboratory, or field research in different phases of geology. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## GEOS 3733. Geospatial Data Science in Public Health. 3 Hours.

Introduction to geospatial data science, including geographic information systems (GIS) and related technologies, with an emphasis on their practical applications in the fields of public health, global health, healthcare analytics, healthcare administration, and other health-related fields. (Typically offered: Fall)

## GEOS 3873. Geological Data Analysis. 3 Hours.

Quantitative methods and techniques for analysis and interpretation of geological data. Corequisite: Lab component. Pre- or corequisite: MATH 2564. (Typically offered: Spring)

GEOS 3901. Junior Honors Course. 1 Hour.
Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)
GEOS 3911. Junior Honors Course. 1 Hour.
Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)

## GEOS 399VH. Honors Course. 1-6 Hour.

Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## GEOS 4033. Hydrogeology. 3 Hours.

Occurrence, movement, and interaction of water with geologic and cultural features. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 2043 or MATH 2554, and GEOS 3514. (Typically offered: Spring)

## GEOS 4043. Geography of the Middle East. 3 Hours.

Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class. Prerequisite: Junior standing. (Typically offered: Fall)

## GEOS 4043H. Honors Geography of the Middle East. 3 Hours.

Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class.
Prerequisite: Junior standing. (Typically offered: Irregular)
This course is equivalent to GEOS 4043.

## GEOS 4053. Geomorphology. 3 Hours.

A quantitative, mechanistic overview of surface processes and landscape evolution. Lecture 2 hours, laboratory 3 hours per week. One to two field trips on weekends (2 day total) are required during the semester. Corequisite: Lab component. Prerequisite: GEOS 3873 or instructor consent. (Typically offered: Spring)

GEOS 4063. Principles of Geochemistry. 3 Hours.
Introduction to fundamental principles of geochemistry from historic development to modern concepts. Prerequisite: CHEM 1121L, CHEM 1123 and GEOS 2313. (Typically offered: Fall)

GEOS 4073. Urban Geography. 3 Hours.
Areal patterns of modern urban regions and the focus shaping these patterns. Emphasis is placed on American urban areas and their evolution and functional areas. Field work. Prerequisite: Junior standing. (Typically offered: Spring)

## GEOS 4083. Economic Geology. 3 Hours.

Introduction to mineral deposits used as economic resources. Covers basic geology and geochemistry of mineral deposit formations and the formation of major classes of deposits. Examines the relationship between the distribution of ores, oil, gas, coal, and Plate Tectonics. Explores environmental issues associated with the extraction of earth resources. Prerequisite: GEOS 2313. (Typically offered: Irregular)

## GEOS 4093. History and Philosophy of Geography. 3 Hours.

This course familiarizes students with the history of geography, the contributions of geographers to scientific thought and theory, and research techniques that are used in geography. Emphasis is given to the integration of statistical and spatial analysis, and their applications in field research. The course includes short fieldbased projects in and around Northwest Arkansas. (Typically offered: Spring Even Years)

## GEOS 410V. Special Problems in Geosciences. 1-6 Hour.

Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

## GEOS 410VH. Honors Special Problems in Geosciences. 1-6 Hour.

Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
This course is equivalent to GEOS 410 V .

## GEOS 4113. Global Change. 3 Hours.

Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. (Typically offered: Spring)

GEOS 4113H. Honors Global Change. 3 Hours.
Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. Prerequisite: Honors candidacy. (Typically offered: Spring) This course is equivalent to GEOS 4113.

## GEOS 4153. Karst Hydrogeology. 3 Hours.

Assessment of ground water resources in carbonate rock terrains; relation of ground water and surface water hydrology to karst; quantification of extreme variability in karst environments; data collection rationale. Field trips required. Prerequisite: GEOS 4033. (Typically offered: Irregular)

GEOS 4223. Stratigraphy and Sedimentation. 3 Hours.
Introductory investigation of stratigraphic and sedimentologic factors important to the study of sedimentary rocks. Lecture 2 hours, laboratory 3 hours per week. A required weekend, two-day field trip will be conducted during the semester. Corequisite: Lab component. Prerequisite: GEOS 3413. (Typically offered: Fall)

## GEOS 4233. Geography of Religion \& Sacrality. 3 Hours.

Explores the spatial nature of the World's major faiths and religious institutions, focusing on the distribution and origins of these religions. Examines the religious beliefs, rituals, architecture, demographics, and art in different societies, cultures, and countries. Considers the tenets and practices of what is sacred and/or spiritual, held in common by a group or community. Prerequisite: Junior or senior standing. (Typically offered: Irregular)

## GEOS 4243. Political Geography. 3 Hours.

Contemporary world political problems in their geographic context. Development of the principles of political geography with emphasis upon the problems of Eastern Europe, Africa, and Southeast Asia. Prerequisite: Junior standing. (Typically offered: Fall Odd Years)

GEOS 4253. Petroleum Geology. 3 Hours.
Distribution and origin of petroleum. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Geology major and senior standing. (Typically offered: Fall)

GEOS 4263. Geospatial Data Science - Sources and Characteristics. 3 Hours.
Covers the wide range of geospatial data sources and characteristics with emphasis on data science applications through hands-on experience recognizing the unique requirements of major sources. Techniques for the integration of disparate, heterogeneous data sets will be covered. Corequisite: GEOS 3563. Prerequisite: GEOS 3543. (Typically offered: Fall)

GEOS 430V. Internship in Physical Geography. 3-6 Hour.
Supervised experience in municipal, county, state or private natural resource management agency, or any other such organization approved by instructor. (Typically offered: Fall, Spring and Summer)

## GEOS 4333. Igneous and Metamorphic Petrology. 3 Hours.

Elementary to advanced study of the origin and evolution of igneous and metamorphic rocks in a variety of plate tectonics settings. Lecture 2 hours, Laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOS 2313. (Typically offered: Spring)

GEOS 4353. Meteorology. 3 Hours.
Examination of the atmospheric processes that result in multifarious weather systems. Offered as physical science. Prerequisite: Junior standing. (Typically offered: Fall)

## GEOS 4363. Climatology. 3 Hours.

Fundamentals of topical climatology followed by a study of regional climatology. Offered as physical science. Prerequisite: GEOS 1133 or GEOS 4353. (Typically offered: Spring)

## GEOS 437V. Geology Field Trip. 1-2 Hour.

Camping field trip to areas of geologic interest, usually conducted during Spring Break. (Typically offered: Spring) May be repeated for up to 4 hours of degree credit.

GEOS 4383. Hazard \& Disaster Assessment, Mitigation, Risk \& Policy. 3 Hours. Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior or senior standing. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

GEOS 4383H. Honors Hazard \& Disaster Assessment, Mitigation, Risk \& Policy. 3 Hours.
Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is equivalent to GEOS 4383.
GEOS 4393. American Public Lands \& Policy. 3 Hours.
The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Junior or senior standing. (Typically offered: Irregular)

## GEOS 4393H. Honors American Public Lands \& Policy. 3 Hours.

The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Honors standing and Junior or senior standing. (Typically offered: Irregular)
This course is equivalent to GEOS 4393.

## GEOS 4433. Geophysics. 3 Hours.

Derivation from physical principles, of the geophysical methods for mapping the Earth. Computational methods of converting gravity, magnetic, radiometric, electrical, and seismic data into geologic information. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MATH 2564 and PHYS 2033 and PHYS 2031L and GEOS 3514. (Typically offered: Irregular)

GEOS 4473. Applied Climatology. 3 Hours.
Applied climatology involves the use of climatic data to solve a variety of social, economic and environmental problems, such as for clients in agriculture, water and energy management. The basic purpose of applied climatology is to help society, at all scales and levels, to achieve a better adjustment to the climatic environment. (Typically offered: Fall)

GEOS 4493. Geography of Political Violence. 3 Hours.
This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextuallyinformed understanding of the international system and how it is shaped by civil war. Prerequisite: Junior or senior standing. (Typically offered: Fall Even Years) This course is cross-listed with INST 4103 H .

## GEOS 4493H. Honors Geography of Political Violence. 3 Hours.

This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextuallyinformed understanding of the international system and how it is shaped by civil war. Prerequisite: Junior or senior standing and honors standing. (Typically offered: Fall Even Years)
This course is cross-listed with GEOS 4493, INST 4103H.

## GEOS 4523. Cartographic Design and Production. 3 Hours.

This course addresses advanced cartographic concepts (i.e. visual hierarchy, aesthetics, image cognition) and production techniques as they relate to computerassisted mapping. Students produce a variety of maps using Adobe Illustrator (CS $4-6)$ software to build a map portfolio. Field trips may be required. Prerequisite: GEOS 3023. (Typically offered: Spring)

## GEOS 4533. Introduction to Petroleum Geophysics. 3 Hours.

Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Prerequisite: MATH 2564, (PHYS 2033 or PHYS 2074), and GEOS 3514 or instructor consent. (Typically offered: Fall)

## GEOS 4533H. Honors Introduction to Petroleum Geophysics. 3 Hours.

Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Prerequisite: MATH 2564, (PHYS 2033 or PHYS 2074), and GEOS 3514 or instructor consent. (Typically offered: Fall)
This course is equivalent to GEOS 4533.

## GEOS 4553. Introduction to Raster GIS. 3 Hours.

Theory, data structure, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. Prerequisite: GEOS 3543 or ANTH 3543. (Typically offered: Fall) This course is cross-listed with ANTH 4553.

## GEOS 4563. Geology of Our National Parks. 3 Hours.

This course examines the underlying geology responsible for selected parks, and explores the interplay of geology, biology, climate, topography, and humans to evaluate the value of the parks, and to anticipate the problems they will face in the near and long-term. Prerequisite: GEOS 1113. (Typically offered: Fall)

GEOS 4583. Enterprise and Multiuser GIS. 3 Hours.
GIS practice that's typical of collaborative team-based geospatial organizations. Solve real-world problems through end-to-end GIS design and implementation using ArcGIS Enterprise, extensive federal, state, and local repositories, and high quality software documentation. Includes relevant training in geospatial provenance and metadata, and in enterprise and multiuser GIS administration. (Typically offered: Spring)

GEOS 4593. Introduction to Global Positioning Systems and Global Navigation Satellite Systems. 3 Hours.
Fundamentals of navigation, mapping, and high-precision positioning using the Navstar Global Positioning System. Topics include datum definition and transformation, map projections, autonomous and differential positioning using both code and carrier processing, and analysis of errors. Prerequisite: GEOS 3543 or GEOS 5543. (Typically offered: Fall)

GEOS 4653. GIS Analysis and Modeling. 3 Hours.
Unlike conventional GIS courses that focus on studying "where", this course will teach students to address beyond "where" using various GIS analysis and modeling techniques to explore "why" and "how". The course will provide theoretical and methodological reviews of the principles of cartographic modeling and multi-criteria decision-making. (Typically offered: Spring)

GEOS 4663. Low-Temperature Geochemistry of Natural Waters. 3 Hours. Covers the low-temperature geochemistry of waters and their associated minerals at Earth's surface. Examines the controls on the chemical composition of natural waters and the minerals precipitated from them. Topics covered will include water-rock interactions, pH , redox, the carbonate-water system, clay minerals and exchange, heavy metals, and a brief introduction to stable isotopes and geomicrobiology. Prerequisite: CHEM 1121L, CHEM 1123, GEOS 1113, and GEOS 1111L. (Typically offered: Fall)

GEOS 4686. Geology Field Camp. 6 Hours.
A professional course taught off campus emphasizing occurrence, description, mapping, and interpretation of major rock types. May not be taken for graduate credit. Prerequisite: GEOS 3413 and GEOS 3514. (Typically offered: Summer)

## GEOS 4693. Environmental Justice. 3 Hours.

This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. (Typically offered: Spring)

GEOS 4783. Geography of Europe. 3 Hours.
Geographic regions of the area with emphasis on their present development. Prerequisite: Junior standing. (Typically offered: Irregular)

GEOS 4793. Geospatial Unmanned Aircraft Systems. 3 Hours.
Geospatial unmanned aircraft systems (UAS) are becoming key technologies in a number of disciplines. This course will introduce safe and legal operation of UAS in aerial photography, multispectral, thermal and LIDAR applications, geodetic control, photogrammetric and computer vision processing, and the creation of accurate 2D and 3D digital information products. Pre- or Corequisite: GEOS 3213 or GEOS 4593 or equivalent. (Typically offered: Fall)

GEOS 4813. Geography of Eurasia. 3 Hours.
Introduction to the culture, society, and politics of Eurasia using the organizing concept of empire from the moment of its consolidation in 1945 to its dissolution in 1991. Focuses on places that have emerged from this order and emphasizes experience and memory at each of these different times and places. Prerequisite: Junior standing. (Typically offered: Spring Even Years)

GEOS 4924. Earth System History (ACTS Equivalency = PHSC 1104). 4 Hours. Physical and biological events that form the history of the earth from its formation to the beginning of the historical era. Corequisite: Lab component. Prerequisite: GEOS 3413 and (GEOS 4223 or GEOS 4333) and GEOS 3514. (Typically offered: Spring)

GEOS 4933. Ancient Forest Science and Sustainability. 3 Hours.
Ancient forests preserve beautiful habitat with high ecological integrity. This course will examine the development, spatial distribution, and ongoing destruction of ancient forests worldwide, and how science can contribute to the understanding and sustainable management of these valuable resources. (Typically offered: Spring)

## GEOS 4972H. Senior Honors Course I. 2 Hours.

Special honors research in geology. Two hours of credit each semester.
Prerequisite: Junior honors. (Typically offered: Fall, Spring and Summer)
GEOS 4982H. Senior Honors Course II. 2 Hours.
Special honors research in geology. Two hours of credit each semester.
Prerequisite: Junior honors. (Typically offered: Fall, Spring and Summer)

GEOS 4993. Dynamics of Sediment Transport. 3 Hours.
This is a course focused on how fluids transport sediment and construct stratigraphy. Lectures will develop environmental fluid mechanics and sediment transport from first principles so they can be used to evaluate sedimentological and stratigraphic problems. This framework will be applied to a sedimentological problem using original data and analysis. Pre- or Corequisite: GEOS 4223. Prerequisite: GEOS 3413. (Typically offered: Fall Odd Years)

## Economics (ECON)

## Raja Kali

Chair of the Department
402 Business Building
479-575-ECON (3266)
Department of Economics Website (https://walton.uark.edu/departments/ economics/)

Students in Fulbright College may pursue one of two degree plans leading to a Bachelor of Arts degree in economics. The first is a traditional major in business economics and the second includes a concentration international business and economics.

The concentration in business economics is intended for those students who are interested primarily in business, but at the same time have a desire to understand the more advanced tools of economic analysis. Such a background is excellent preparation for careers in corporate research and planning, as well as careers with government and regulatory agencies, for graduate study in business and economics, and for law school.

The international economics and business concentration is intended for students who wish to learn more about the international aspects of economics and business. It provides preparation for a broad range of careers in business, including management, marketing, and finance.

## University of Arkansas and Fulbright College of Arts and Sciences Requirements for a Bachelor of Arts in Economics

The following credit hour requirements must be met (see Degree Completion Program Policy for additional information). In addition, the Fulbright College Writing Requirement may be satisfied by completing a paper in any ECON course numbered 3000 -level or higher. The student must inform their professor in writing by the end of the second week of class that they would like to use a particular course to fulfill this requirement. Work cannot involve a group project, and students must have senior standing. Completion of an honors thesis will also satisfy this requirement.

State minimum core (p.81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| State Minimum Core |  | 35 |
| :---: | :---: | :---: |
| COMM 1313 | Public Speaking (ACTS Equivalency = SPCH 1003) | 3 |
| Select one of the following MATH options: ${ }^{1}$ |  | 4-6 |
| MATH 2043 <br> \& MATH 2053 | Survey of Calculus (ACTS Equivalency $=$ MATH 2203) <br> and Finite Mathematics |  |
| -or- |  |  |


${ }^{1}$ It is strongly recommended that economics majors who plan to continue their studies at the graduate level take at least two semesters of calculus (MATH 2554C and MATH 2564C) and linear algebra (MATH 3083).

Writing Requirement: Students may satisfy their senior writing requirement with a paper in any 3000 or 4000 -level ECON class. A student must inform their professor in writing by the end of the second week of class that they would like to use a particular course to fulfill this requirement. Work cannot involve a group project, and students must have senior standing. Completion of an honors thesis will also satisfy this requirement.

## Eight-Semester Degree Plan for a Bachelor of Arts in Economics

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{1}$ | 3 |  |
| A world language or world region course (as approved by advisor) | 3 |  |
| State Minimum Core-U.S. History (Satisfies General Education Outcome 4.2) ${ }^{1}$ | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) ${ }^{1}$ |  | 3 |
| MATH 2043 Survey of Calculus (ACTS <br> Equivalency = MATH 2203) <br> or MATH 2053 Finite Mathematics <br> or MATH 1284C Precalculus Mathematics (ACTS <br> Equivalency $=$ MATH 1305) <br> Note: Students should enroll in MATH 1284C only if planning to take MATH 2554C Calculus I. |  | 3 |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) (Satisfies General Education Outcome 3.3) ${ }^{1}$ or ECON 2023 Principles of Microeconomics (ACTS Equivalency $=$ ECON 2203) |  | 3 |
| A world language or world region course (as approved by advisor) |  | 3 |
| State Minimum Core-Fine Arts (Satisfies General Education Outcome 3.1) |  | 3 |
| Year Total: | 15 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| MATH 2043 Survey of Calculus (ACTS <br> Equivalency = MATH 2203) <br> or MATH 2053 Finite Mathematics <br> or MATH 2554C Calculus I (ACTS Equivalency = MATH 2405) | 3 |  |
| BUSI 1033 Data Analysis and Interpretation or STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103) | 3 |  |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) | 3 |  |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ | 4 |  |
| General Electives | 2 |  |
| ECON 3033 Microeconomic Theory or ECON 3133 Macroeconomic Theory |  | 3 |
| State Minimum Core-Science with corequisite lab |  | 4 |
| State Minimum Core-Social Science (non-ECON) (Satisfies General Education Outcome 4.1) |  | 3 |

General Electives 5

Year Total: 15

## Third Year

## ECON 3033 Microeconomic Theory

or ECON 3133 Macroeconomic Theory
Any ECON course numbered 3000-level or higher
State Minimum Core—Humanities (Satisfies
General Education Outcome 3.2)
Any UA-Fayetteville credit hours numbered 3000level or higher
General Electives ${ }^{1}$ 15

ECON 4743 Introduction to Econometrics or ECON 4753 Forecasting
or ECON 3143 Economics of Poverty and Inequality
Any ECON course numbered 3000 -level or higher
Any UA-Fayetteville credit hours numbered 3000-
level or higher
General Electives (Satisfies General Education
Outcome 4.2) ${ }^{1}$
Year Total:

| Fourth Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ECON 4743 Introduction to Econometrics or ECON 4753 Forecasting or ECON 3143 Economics of Poverty and Inequality | 3 |  |
| Any ECON course numbered 3000-level or higher | 3 |  |
| General Electives (Satisfies General Education Outcome 6.1) ${ }^{1}$ | 9 |  |
| Any ECON course numbered 3000-level or higher |  | 3 |
| General Electives |  | 12 |
| Year Total: | 15 | 15 |

## Total Units in Sequence:

120
${ }^{1}$ Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu\%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb\%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk\%7C1000\&sdata=ZHBCul1Vytd
\%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb!


COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (prereq for WCOB 2053) who meet the requirements of the Fulbright College area studies programs in Asian Studies, Middle East Studies, Latin American and Latino Studies, or European Studies will be considered to have fulfilled this requirement.

MATH 2043 Survey of Calculus (ACTS Equivalency = MATH
\& MATH 2053 2203)
and Finite Mathematics
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)
\& MATH 2564 and Calculus II (ACTS Equivalency = MATH 2505)
\%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks \%3D\&reserved=0). Please visit these pages in the links provided and
consult with your academic advisor when making course selections to fulfill these requirements.

## Requirements for a Major in Economics with Concentration in International Economics and Business

In addition to the University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the University Core requirements.

Thirty Semester Hours of Courses, including:

| ECON 2013 | Principles of Macroeconomics (ACTS <br> Equivalency = ECON 2103) | 3 |
| :--- | :--- | ---: |
| ECON 2023 | Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) | 3 |
| ECON 3033 | Microeconomic Theory | 3 |
| ECON 3133 | Macroeconomic Theory | 3 |
| ECON 4633 | International Trade | 3 |
| ECON 4643 | International Macroeconomics and Finance | 3 |
| Twelve hours of international economics and business electives that |  |  |
| may be selected from: ${ }^{1}$ |  |  |
| ECON 3843 | Economics of the Developing World | 3 |
| ECON 3853 | Emerging Markets | 3 |
| ECON 3933 | The Japanese Economic System | 3 |
| ECON 410V | Special Topics in Economics | $1-6$ |

Course pre-requisites for non-economics international business courses will count toward this 12-hour requirement and include FINN 3703, MGMT 4583, MKTG 4633 and SCMT 3643. Thus, if a student wants to take MKTG 4633 as an international economics and business elective, the student must also take the prerequisite MKTG 3433. These two courses would then satisfy 6 hours of the elective requirement.
9 hours of upper-division course work in Fulbright College that 9 focuses on a country or region of the world related to the foreign language, which might include upper-division courses in the same language, which should emphasize literature or cultural topics. Courses must be approved by the departmental adviser. Students

BUSI 1033 Data Analysis and Interpretation
or STAT 230Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

## ACCT 2013 Accounting Principles

And one of the following:
ACCT 2023 Accounting Principles II
SEVI 2053 Business Foundations
ECON 4743 Introduction to Econometrics
ECON 4753 Forecasting
(Students must also complete WCOB 1120, ISYS 1123 or equivalent.)
Six hours of a World Language at the intermediate level, or above. ${ }^{2} 6$
Three hours of upper-division world language in the same language 3
covering business communications, or equivalent. Any student whose minimum 6-hour requirement under (\#6) above includes an upperdivision course may choose to include business communications among the 6 hours of required Univer-sity course work in the world language.
Total Hours
1 Course pre-requisites for non-economics international business courses will count toward this 12 -hour requirement. Thus, if a student wants to take MKTG 4633 Global Marketing as an international economics and business elective, he/she also must take the prerequisite MKTG 3433 Introduction to Marketing Strategy. These two courses will satisfy 6 hours of the elective requirement,
2 This is usually accomplished through completion of a sequence of world language courses: 1013 Elementary II, 2003 Intermediate I and 2013 Intermediate II.
Note: It is strongly recommended that economics majors who plan to continue their studies at the graduate level take at least two semesters of calculus (MATH 2554 and MATH 2564) and linear algebra (MATH 3083).

Writing Requirement: Students may satisfy their senior writing requirement with a paper in any 3000 or 4000 -level ECON class. A student must inform their professor in writing by the end of the second week of class that they would like to use a particular course to fulfill this requirement. Work cannot involve a group project, and students must have senior standing. Completion of an honors thesis will also satisfy this requirement.

## Economics B.A. with Concentration in International Economics and Business <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program.

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency $=$ <br> ENGL 1013) | 3 |  |
| MATH 2053 Finite Mathematics $3-4:: 3$ | 3 |  |
| or MATH 2554 Calculus I (ACTS Equivalency = |  |  |
| MATH 2405) | 3 |  |
| 1013 Elementary II World Language course | 3 |  |
| University/state core U.S. history requirement <br> COMM 1313 Public Speaking (ACTS Equivalency <br> = SPCH 1003) | 3 |  |

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
MATH 2043 Survey of Calculus (ACTS
Equivalency $=$ MATH 2203) ${ }^{1}$
or MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203) ${ }^{1}$
ACCT 2013 Accounting Principles 3
2003 Intermediate I World Language course 3
Year Total: 15

| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| 2013 Intermediate II World Language Course | 3 |  |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) ${ }^{1}$ | 3 |  |
| BUSI 1033 Data Analysis and Interpretation or STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103) | 3 |  |
| ACCT 2023 Accounting Principles II or SEVI 2053 Business Foundations | 3 |  |
| General Elective | 3 |  |
| Advanced Level Elective ${ }^{1}$ |  | 3 |
| ECON 3033 Microeconomic Theory ${ }^{1,2}$ or ECON 3133 Macroeconomic Theory |  | 3 |
| Upper Division World Language ${ }^{1,2}$ |  | 3 |
| University Core Fine Arts or Humanities requirement |  | 3 |
| University Core Social Science requirement (nonECON course) |  | 3 |
| Year Total: | 15 | 15 |

Third Year Units

Upper Division Foreign Language or 3000+
Fulbright College elective ${ }^{1,2}$
Upper Level Area Studies from ARSC ${ }^{1,2}$
University Core Science Lecture with Corequisite 4
Lab requirement
Year Total:
16

## Units

ECON 3133 Macroeconomic Theory ${ }^{1,2} 3$
or ECON 3033 Microeconomic Theory Upper Division World Language ${ }^{1,2}$
University Core Humanities or Fine Arts ..... 3
requirement
University Core Science Lecture with Corequisite ..... 4
Lab requirement
General Elective ..... 3
ECON 4633 International Trade ${ }^{1,2}$


NOTE: ECON 2013 and/or ECON 2023, or ECON 2143, are prerequisites to all economics courses numbered above 3000 .

Requirements for Departmental Honors in Economics: The Departmental Honors program provides upper-division students the opportunity to engage in independent study or research under the guidance of an individual member of the faculty. In addition to satisfying the general college requirements for the bachelor's degree with honors, honors candidates in economics are required to complete and orally defend an honors thesis based upon independent study under ECON 399VH (for 3 to 6 hours) and to have a minimum grade-point average of 3.5 . Outstanding student achievement will be recognized by awarding the bachelor's degree with the distinction "Economics Scholar Cum Laude." Higher distinctions may be awarded to truly outstanding students based upon the whole of their academic program and quality of honors research.

Some courses in the Walton College of Business are given credit toward an economics major for the B.A. degree. See departmental adviser for designation.

## Economics (B.A.) Social Studies Teacher Licensure Requirements:

Please refer to the Secondary Education Requirements for Fulbright College Students (p. 276). Students wanting to teach social studies in middle school should consult with a middle level adviser in the College of Education and Health Professions.

## Faculty

Bhattacharya, Puja, Ph.D., M.A. (Ohio State University), M.S. (Indian Statistical Institute), B.S. (Presidency College), Assistant Professor, 2019.
Brownback, Andrew P., Ph.D. (University of California, San Diego), B.A. (Kansas State University), Associate Professor, 2015, 2021.
Celik, Bilal, Ph.D. (University of Tennessee), M.S. (University of Illinois), B.A. (Ege University), Teaching Assistant Professor, 2023. Civelli, Andrea, Ph.D., M.A. (Princeton University), B.A. (Bocconi University, Milan), Associate Professor, 2010, 2017.
Embaye, Abel, Ph.D. (Georgia State University), M.A. (Tilburg University), B.A. (University of Asmara), Clinical Assistant Professor, 2010.

Farmer, Amy Lynn, Ph.D., M.A. (Duke University), B.S. (Purdue University), University Professor, Margaret Gerig and R.S. Martin Jr. Chair in Business, 1999, 2003.
Ferrier, Gary D., Ph.D. (University of North Carolina-Chapel Hill), B.A.
(University of Wisconsin-Madison), University Professor, Lewis E. Epley Jr. Professorship in Economics, 1993, 2012.
Gaduh, Arya, Ph.D. (University of Southern California), M.Phil.
(Cambridge University), B.A. (University of California-Berkeley), Associate Professor, 2013, 2019. Assistant Professor, 2022.
Hossain, Md Amzad, Ph.D., M.A. (University of Virginia), B.S.S.
(University of Dhaka), Assistant Professor, 2022.
Jaduh, Arva, Ph.D. (University of Southern California), M.Phil.
(Cambridge University), B.A. (University of California, Berkeley), Assistant Professor, 2013.
Jung, Hyunseok, Ph.D. (Syracuse University), M.A. (Korea Development Institute), B.A. (Seoul National University), Assistant Professor, 2018.
Kali, Raja, Ph.D., M.A. (University of Maryland University College), B.S.C. (University of Calcutta), Professor, ConocoPhillips Chair in International Education, 1999, 2013.
Koh, Dongya, Ph.D. (Washington University-St. Louis), M.A. (Boston University), B.A. (Keio University), Assistant Professor, 2014.
Li, Xin "Sherry", Ph.D. (University of Michigan), M.A. (Syracuse University), M.A., B.A. (Renmin People's University of China), Professor, 2018.

Littrell, Rita, Ph.D. (University of Kansas), Ed.S., M.Ed., B.S.E. (University of Arkansas), Visiting Assistant Professor, 1997.
Liu, Andrew Yizhou, Ph.D., M.A. (University of California, Santa Barbara), B.A. (Nanjing University), Assistant Professor, 2020.
Mao, Ruoyun, Ph.D. (Indiana University), B.A. (Sun Yat-sen University), Assistant Professor, 2023.
McGee, Peter J., Ph.D. (Ohio State University), B.S. (Tulane University), Associate Professor, 2014, 2018.
Miller, Logan, Ph.D., M.S., B.A. (University of Arkansas), Teaching Assistant Professor, 2023.
Park, Doyoung, Ph.D., M.A. (University of Colorado) B.S. (Sogang University, Seoul), Assistant Professor, 2019.
Rahman, Muhammad, Ph.D. (Indiana University), M.S., B.S. (University of Dhaka), Clinical Assistant Professor, 2014.
Stapp, Robert Bruce, Ph.D., M.S. (Oklahoma State University), B.S.B.A. (Oklahoma City University), Clinical Professor, 1995, 2012.
Sude, Yujie, Ph.D., M.A. (University of Arkansas), M.Ed. (Beijing Normal University), LL.B. (Peking University), Clinical Assistant Professor, 2018.
Swanson, Shawn, Ph.D. (University of Colorado Boulder), M.A.
(University of Colorado Boulder, University of Wisconsin-Milwaukee), B.S. (University of Wisconsin-Madison), Teaching Assistant Professor, 2021. White, Jessica, , Visiting Assistant Professor, 2021.

## Courses

ECON 2013. Principles of Macroeconomics (ACTS Equivalency = ECON 2103). 3 Hours.
Macroeconomic analysis, including aggregate employment, income, fiscal and monetary policy, growth and business cycles. Credit will be allowed for only one of ECON 2013 and AGEC 2103. Prerequisite: MATH 1203 or higher, or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with AGEC 2103.
ECON 2013H. Honors Principles of Macroeconomics. 3 Hours.
Macroeconomic analysis, including aggregate employment, income, fiscal and monetary policy, growth and business cycles. Credit will be allowed for only one of ECON 2013H and AGEC 2103. Prerequisite: MATH 1203 or higher or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT, and honors standing. (Typically offered: Fall)
This course is cross-listed with ECON 2013, AGEC 2103.
ECON 2023. Principles of Microeconomics (ACTS Equivalency = ECON 2203).

## 3 Hours.

Microeconomic analysis, including market structures, supply and demand, production costs, price and output, and international economics. Credit will be allowed for only one of ECON 2023 and AGEC 1103. Prerequisite: MATH 1203 or higher, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer) This course is cross-listed with AGEC 1103.

ECON 2023H. Honors Principles of Microeconomics. 3 Hours.
Microeconomic analysis, including market structures, supply and demand, production costs, price and output, and international economics. Credit will be allowed for only one of ECON 2023H and AGEC 1103. Prerequisite: MATH 1203 or higher, or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT, and honors standing. (Typically offered: Spring)
This course is cross-listed with ECON 2023, AGEC 1103.

## ECON 2143. Basic Economics: Theory and Practice. 3 Hours.

Surveys basic micro, macro principles and analytical tools needed to study contemporary economic problems such as inflation, unemployment, poverty, and pollution. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Fall, Spring and Summer)

ECON 2143H. Honors Basic Economics: Theory and Practice. 3 Hours.
Surveys basic micro, macro principles and analytical tools needed to study contemporary economic problems such as inflation, unemployment, poverty, and pollution. Not open to students majoring in Economics or Business Administration. (Typically offered: Fall, Spring and Summer)
This course is equivalent to ECON 2143.

## ECON 3033. Microeconomic Theory. 3 Hours.

Nature, scope, and purpose of economic analysis; theories of demand, production, cost, firm behavior, allocation of resources, etc., in a market-oriented system.
Prerequisite: (ECON 2013 and ECON 2023) or (ECON 2143) and (MATH 2043 or MATH 2554). (Typically offered: Fall, Spring and Summer)
ECON 3053. Economics for Elementary Teachers. 3 Hours.
For students who plan to become teachers in elementary schools. Acquaints students with basic concepts and functioning of the American economic system. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. Recommended to be completed in the fall semester of junior year. Prerequisite: 40 hours of completed course work. (Typically offered: Fall)

ECON 3063. Economics for Secondary Educators. 3 Hours.
Economics for Secondary Educators teaches basic economics understandings equipping students to make sound economics decisions as consumers, investors, voters and savers. Lessons and activities appropriate for secondary classes will be demonstrated. The course will survey materials available for government, economics, world and U.S. history, environmental science, language arts, business education, personal finance and entrepreneurship classes. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. Recommended to be completed in the fall semester of junior year. Prerequisite: 40 hours of completed course work. (Typically offered: Irregular)

## ECON 3133. Macroeconomic Theory. 3 Hours.

Theoretical determinations of national aggregate employment, income, consumption, investment, price level, etc. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2043 or MATH 2554)). (Typically offered: Fall and Spring)
ECON 3143. Economics of Poverty and Inequality. 3 Hours.
This course provides the study of how labor markets work and how economic institutions and policy affect labor market outcomes. Topics include changes to the modern economy including forces like globalization and technical advances and how such forces have altered incomes, wealth and social mobility. The course will provide a clearer understanding of the trends, the reasoning behind the trends, and the impact of social policy on the welfare of the American worker. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall)
ECON 330V. Economics Study Abroad. 3-6 Hour.
Open to undergraduate students studying abroad in officially sanctioned programs in Economics in the Walton College. Topics vary by location of study abroad opportunities. To be eligible for credit, students must have junior standing and Walton College majors must have completed all pre-business requirements prior to studying abroad. Prerequisite: Departmental consent, Junior standing and completion of pre-business course requirements, each with a grade of $C$ or better, a pre-business cumulative GPA of 2.5 or better and an overall GPA of 2.5 or better. (Typically offered: Irregular)

## ECON 3333. Public Economics. 3 Hours.

Governmental functions, revenues; tax shifting, incidence; public expenditures, their effects; and fiscal policy. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

## ECON 3433. Money and Banking. 3 Hours.

Financial history; theory and practice of financial institutions; monetary policy in theory and practice. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

## ECON 3533. Labor Economics. 3 Hours.

Economic analysis of labor markets. Topics include analysis of labor demand and supply; human capital investment; wage differentials; discrimination; economic effects of labor unions and collective bargaining; public sector labor markets; unemployment; and labor market effects on inflation. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

## ECON 3633. Economics of Advertising. 3 Hours.

An examination of how economists define and categorize types of products and advertising campaigns. Alternative views of advertising -- persuasive vs. informative -- are discussed. Models of the relationship between advertising and sales, profits, market structure, product quality, and price are examined. Prerequisite: ECON 2023 or ECON 2143. (Typically offered: Irregular)
ECON 3843. Economics of the Developing World. 3 Hours.
Examine theories and patterns of economic development in emerging economies. The role of the World Bank and IMF as multilateral lenders and examination of their success and failures in fostering development. Measures of poverty and inequality and their implications for economic development. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

## ECON 3853. Emerging Markets. 3 Hours.

An analysis of the business and economic environment in emerging countries; focusing in Latin America, South East Asia and Transition Economies. The topics and issues covered include market structure and market failures, financial and legal background, current institutions and political economy issues, and current business opportunities. Prerequisite: ECON 2143; or ECON 2013 and ECON 2023. (Typically offered: Fall)

ECON 3933. The Japanese Economic System. 3 Hours.
This class presents essential facts about the Japanese economy and then subjects them to modern economic analyses. Japanese institutions and policies are contrasted with their American counterparts, and these economies are compared in terms of performance. Current issues including contemporary economic conditions and US - Japanese trade relations are also examined. Pre- or Corequisite:
ECON 2023. Prerequisite: ECON 2013 or ECON 2143. (Typically offered: Spring)
ECON 399VH. Honors Course. 1-3 Hour.
Honors thesis research and writing under the direction of a faculty member in the department. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## ECON 4003H. Honors Economics Colloquium. 3 Hours.

Explores events, concepts and/or new developments in the field of Economics. Prerequisite: Senior standing. (Typically offered: Fall)

ECON 410V. Special Topics in Economics. 1-6 Hour.
Covers special topics in economics not available in other courses. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ECON 410VH. Honors Special Topics in Economics. 1-6 Hour.
Covers special topics in economics not available in other courses. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to ECON 410 V .

## ECON 4173. Nation Model United Nations. 3 Hours.

This class is designed to prepare students for their participation in a Nation Model United Nations (NMUN) Conference. The NMUN Conference is sponsored by The National Collegiate Conference Association (NCCA), which is the largest collegelevel Model United Nations conference. This course is designed to advance the research skills of the students by requiring extensive background position papers covering various economic and social issues of their assigned committee and ultimately preparing resolution documents they develop during the conference. They will present their positions via speeches and in caucus settings. This course will broaden the students' international perspective while they gain a thorough understanding of the primary activities of the United Nations. Prerequisite: Junior standing and departmental consent. (Typically offered: Fall)

ECON 4333. Economics of Organizations. 3 Hours.
An economic perspective on the design of organizations. Applies developments in game theory and contract theory to analyze the role of information and incentives within and between firms. Covers the boundaries of firms, integration and outsourcing, authority and incentives, and alternative organizational structures in an evolving business environment. Prerequisite: ECON 3033. (Typically offered: Fall)

## ECON 4423. Behavioral Economics. 3 Hours.

Both economics and psychology systematically study human judgment, behavior, and well-being. This course surveys attempts to incorporate psychology into economics to better understand how people make decisions in economic situations. The course will cover models of choice under uncertainty, choice over time, as well as procedural theories of decision making. Prerequisite: ECON 3033. (Typically offered: Fall)

## ECON 4433. Experimental Economics. 3 Hours.

The course offers an introduction to the field of experimental economics. Included are the methodological issues associated with developing, conducting, and analyzing controlled laboratory experiments. Standard behavioral results are examined and the implications of such behavior for business and economic theory are explored. Prerequisite: ECON 2023 or ECON 2143. (Typically offered: Spring)

ECON 450V. Independent Study. 1-6 Hour.
Permits students on individual basis to explore selected topics in economics. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## ECON 4633. International Trade. 3 Hours.

Problems of the international economy from a microeconomic perspective. Topics include analysis of the pattern and content of trade; trade in factors of production; and the applications of trade theory to the study of trade barriers such as tariffs and quotas. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

## ECON 4643. International Macroeconomics and Finance. 3 Hours.

Problems of the international economy from a macroeconomic perspective. Topics include national income accounting and the balance of payments; exchange rates and the foreign exchange markets; exchange rate policy; macroeconomic policy coordination; developing countries and the problem of 3rd world debt; and the global capital market. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

## ECON 4743. Introduction to Econometrics. 3 Hours.

Introduction to the application of statistical methods to problems in economics. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2043 or MATH 2554 or higher)) and (BUSI 1033 or STAT 2303). (Typically offered: Spring)

## ECON 4753. Forecasting. 3 Hours.

The application of forecasting methods to economics, management, engineering, and other natural and social sciences. The student will learn how to recognize important features of time series and will be able to estimate and evaluate econometric models that fit the data reasonably well and allow the construction of forecasts. Prerequisite: (ECON 2013 and ECON 2023) or (ECON 2143) and (MATH 2043 or MATH 2554) and (BUSI 1033 or STAT 2303). (Typically offered: Fall)

## ECON 4763. Economic Analytics. 3 Hours.

This course provides an overview of modern statistical learning methods, including Machine Learning, for senior economics or business majors, along with handson experience of in-depth analytics projects using real data. Students will use the most advanced Machine Learning libraries available in Python, R and MATLAB to gather and organize data as well as to train, validate and test their empirical models. Knowledge of statistical software is recommended. Pre- or Corequisite: ECON 4743 or ISYS 4193. (Typically offered: Fall)

## English (ENGL)

Yajaira Padilla
Department Chair
331 Kimpel Hall
479-575-4301
Email: engl@uark.edu
Department of English Website (http://fulbright.uark.edu/departments/ english/)

The Department of English offers a major in English with three concentrations as well as two minors in English.

Contrary to popular opinion, English majors do quite well on the general job market. Businesses know that in addition to being good communicators, English majors are trained to approach problems creatively and from multiple angles. Through careful course selection,
the student may prepare for postgraduate work in literature and language; meet the English requirements for secondary teaching licensure; develop writing skills; or receive preparation for careers outside academia (including law and business). Within the major, a student may explore many areas of special interest, such as composition pedagogy, creative writing, gender studies, literature of the American south, film as text, folklore, postcolonial literature, and literature in English by Native American, African American, Arab American, and Latino/Latina American authors, as well as the more traditional historical fields of English and American literature. All of these areas help students develop the broad, deep, flexible understanding of human expression that will help them for the rest of their lives - both culturally and in practical terms.

## Requirements for B.A. in English with Creative Writing Concentration

## University and College Requirements for a Bachelor of Arts in

English: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the state minimum core (p. 81).

State minimum core

## World language up to the Intermediate II level

| WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS <br>  <br> WLIT 1123 | Equivalency $=$ ENGL 2113) |
| :--- | :--- | :--- |
|  | World Literature: 1650 CE to Present (ACTS <br> Equivalency = ENGL 2123) | 3 |

or any 3000-level or higher literature course taught in the Department of World Languages, Literatures \& Cultures.
A minimum of 57 credit hours in English courses from the requirements below.

| ENGL 1103 | Reading Literature | 3 |
| :--- | :--- | :--- |
| ENGL 2043 | Rethinking Literature | 3 |
| ENGL 3103 | Approaches to Critical Thinking About Literature |  |
| and Culture | 3 |  |
| Transatlantic Literature Surveys | 12 |  |


| ENGL 2053 | Transatlantic Literature from Beginnings to 1640 |
| :--- | :--- |
| ENGL 2063 | Transatlantic Literature from 1640 to 1865 |
| ENGL 2073 | Transatlantic Literature from 1865 to 1945 |
| ENGL 2083 | Transatlantic Literature from 1945 to Present |

Diversity Requirement - choose one course from the following: 3
ENGL 3543 Topics in U.S. Latino/Latina Literature and Culture
ENGL 3553 Topics in Native American Literature and Culture
ENGL 3573 Special Topics in Diversity
ENGL 3583 Topics in Arab American Literature and Culture
ENGL 3593 Topics in Gender, Sexuality, and Literature
ENGL 3853 Topics in African-American Literature and Culture
ENGL 4523 Studies in U.S. Latino/Latina Literature and Culture
ENGL 4553 Studies in Native American Literature and Culture
ENGL 4583 Studies in Arab American Literature and Culture
ENGL 4593 Studies in Gender, Sexuality, and Literature
ENGL 4853 Studies in African American Literature and Culture
12 credit hours in ENGL courses numbered 3000-level or higher, with 12 at least 9 credit hours from these ENGL courses numbered 4000level or higher. Students must complete a minimum of 6 credit hours covering periods of study before the year 1800 and 6 credit hours covering periods of study after the year 1800. ${ }^{1}$
Concentration hours
General Electives

Students who are pursuing any concentration other than Creative Writing must complete 3 credit hours numbered 3000 -level or higher within their General Electives towards the University Residency Requirement (see Degree Completion Program Policy).
Total Hours 120
${ }^{1}$ Department listings for courses each semester will identify the period of study that each course satisfies.

Transfer Credit: In order to receive a B.A. in English from the University of Arkansas, a student must complete at least 24 credit hours in ENGL courses numbered 3000 -level or higher from the English department.

## Requirements for Creative Writing Concentration

| ENGL 2023 | Creative Writing I (ACTS Equivalency = ENGL 2013) | 3 |
| :---: | :---: | :---: |
| ENGL 3013 | Creative Writing II | 3 |
| ENGL 3203 | Poetry | 3 |
| ENGL 3213 | Fiction | 3 |
| $\begin{aligned} & \text { ENGL } 4013 \\ & \text { or ENGL } 4023 \end{aligned}$ | Undergraduate Poetry Workshop Undergraduate Fiction Workshop | 3 |
| ENGL 4303 | Introduction to Shakespeare | 3 |
| Any ENGL or WLI | IT course number 3000-level or higher. ${ }^{1}$ | 3 |
| Total Hours |  | 21 |
| ${ }^{1}$ Students are encouraged to take both Undergraduate Poetry Workshop and Undergraduate Fiction Workshop, or to retake these workshops with a different faculty member, for this requirement. |  |  |

Writing Requirement: All upper-division English courses require a research or an analytical paper except ENGL 4003 and the courses in creative writing (ENGL 3013, ENGL 4013, ENGL 4023). For this reason all students who fulfill the requirements for a major in English thereby fulfill the Fulbright College writing requirement. In addition, 4000 -level courses (except for those noted above) require more intensive research by, and more active participation from, students than 3000 -level courses do and require each student to complete a paper that can be included as a writing sample with applications to graduate programs or professional schools.

Assessment Requirement: Every senior English major must take the program assessment exam administered by the department each spring semester to graduate. Exam results will not affect GPA, although the student's score will be noted on his or her permanent academic record. This requirement may be waived in extraordinary circumstances by the department's Director of Undergraduate Studies. Contact your adviser for more information.

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations
chapter for university requirements of the program as well as Fulbright College requirements.

State minimum core (p.81) requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic advisor.


| Second Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 2043 Rethinking Literature | 3 |  |
| ENGL 2053 Transatlantic Literature from Beginnings to 1640 | 3 |  |
| World language at the Intermediate I level | 3 |  |
| Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{2}$ | 3 |  |
| Science State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| ENGL 2063 Transatlantic Literature from 1640 to 1865 |  | 3 |
| ENGL 2073 Transatlantic Literature from 1865 to 1945 |  | 3 |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ |  | 3 |
| World language at the Intermediate II level |  | 3 |
| ENGL 2023 Creative Writing I (ACTS Equivalency |  | 3 |

Year Total: 16

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 2083 Transatlantic Literature from 1945 to Present | 3 |  |
| ENGL 3013 Creative Writing II | 3 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| U.S. History State Minimum Core (Satisfies General Education Outcome 4.2) | 3 |  |
| ENGL 3103 Approaches to Critical Thinking About Literature and Culture (Satisfies General Education Outcomes 1.2, 5.1, and 6.1) | 3 |  |
| ENGL 3213 Fiction |  | 3 |
| ENGL 3203 Poetry |  | 3 |
| Diversity Requirement |  | 3 |
| General Electives |  | 6 |
| Year Total: | 15 | 15 |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 4303 Introduction to Shakespeare | 3 |  |
| ENGL 4013 Undergraduate Poetry Workshop | 3 |  |
| ENGL electives 3000-level or higher ${ }^{3}$ | 3 |  |
| ENGL electives 4000-level or higher ${ }^{3}$ | 3 |  |
| General Electives | 3 |  |
| ENGL electives 4000-level or higher ${ }^{3}$ |  | 6 |
| Any ENGL or WLIT course numbered 3000-level or |  | 3 |
| higher |  |  |
| General Electives |  |  |
| Year Total: | 15 | 13 |

Total Units in Sequence: ..... 120

1 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include:
AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H,MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
3 Students must complete a minimum of 6 credit hours covering periods of study before the year 1800 and 6 credit hours covering periods of study after the year 1800.
4 Students are encouraged to take both Undergraduate Poetry Workshop and Undergraduate Fiction Workshop, or to retake these workshops with a different faculty member, for this requirement.

## Requirements for B.A. in English with Rhetoric and Writing Studies Concentration

University and College Requirements for a Bachelor of Arts in<br>English: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the state minimum core (p. 81).

| State minimum core |  | 35 |
| :---: | :---: | :---: |
| World language up to the Intermediate II level |  | 2 |
| WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) | 3 |
| WLIT 1123 | World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123) | 3 |
| or any 3000-level or higher literature course taught in the Department of World Languages, Literatures \& Cultures. |  |  |
| A minimum of 57 credit hours in English courses from the requirements below. |  |  |
| ENGL 1103 | Reading Literature | 3 |
| ENGL 2043 | Rethinking Literature | 3 |
| ENGL 3103 | Approaches to Critical Thinking About Literature and Culture | 3 |
| Transatlantic Literature Surveys |  | 2 |
| ENGL 2053 | Transatlantic Literature from Beginnings to 1640 |  |
| ENGL 2063 | Transatlantic Literature from 1640 to 1865 |  |
| ENGL 2073 | Transatlantic Literature from 1865 to 1945 |  |
| ENGL 2083 | Transatlantic Literature from 1945 to Present |  |
| Diversity Requirement - choose one course from the following: |  | 3 |
| ENGL 3543 | Topics in U.S. Latino/Latina Literature and Culture |  |
| ENGL 3553 | Topics in Native American Literature and Culture |  |
| ENGL 3573 | Special Topics in Diversity |  |
| ENGL 3583 | Topics in Arab American Literature and Culture |  |
| ENGL 3593 | Topics in Gender, Sexuality, and Literature |  |
| ENGL 3853 | Topics in African-American Literature and Culture |  |
| ENGL 4523 | Studies in U.S. Latino/Latina Literature and Culture |  |
| ENGL 4553 | Studies in Native American Literature and Culture |  |
| ENGL 4583 | Studies in Arab American Literature and Culture |  |
| ENGL 4593 | Studies in Gender, Sexuality, and Literature |  |
| ENGL 4853 | Studies in African American Literature and Culture |  |
| 12 credit hours in ENGL courses numbered 3000-level or higher, with 1 at least 9 credit hours from these ENGL courses numbered 4000level or higher. Students must complete a minimum of 6 credit hours covering periods of study before the year 1800 and 6 credit hours covering periods of study after the year 1800. ${ }^{1}$ |  |  |
| Concentration hours |  | 21 |
| General Electives |  | 10 |
| Students who <br> Writing must <br> higher within <br> Residency | are pursuing any concentration other than Creative omplete 3 credit hours numbered 3000 -level or heir General Electives towards the University quirement (see Degree Completion Program Policy). |  |

Total Hours120
${ }^{1}$ Department listings for courses each semester will identify the period of study that each course satisfies.

Transfer Credit: In order to receive a B.A. in English from the University of Arkansas, a student must complete at least 24 credit hours in ENGL courses numbered 3000 -level or higher from the English department.

## Requirements for Rhetoric and Writing Studies Concentration

Select four courses from the list below:
ENGL 2013 Essay Writing
ENGL 3053 Technical and Professional Writing (ACTS Equivalency = ENGL 2023)
ENGL 3603 Topics in Rhetoric and Composition ${ }^{1}$
ENGL 4003 Style and Grammar for Professional Writers
ENGL 4903 Studies in Rhetoric and Composition ${ }^{1}$
9 hours of general electives. Students should consult with a faculty
mentor when choosing general electives in order to select courses (or a supplementary minor or degree) that best support their professional goals and concentration focus.
Total Hours
${ }^{1}$ May be retaken for up to 9 credit hours total.

Writing Requirement: All upper-division English courses require a research or an analytical paper except ENGL 4003 and the courses in creative writing (ENGL 3013, ENGL 4013, ENGL 4023). For this reason all students who fulfill the requirements for a major in English thereby fulfill the Fulbright College writing requirement. In addition, 4000-level courses (except for those noted above) require more intensive research by, and more active participation from, students than 3000 -level courses do and require each student to complete a paper that can be included as a writing sample with applications to graduate programs or professional schools.

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

University/state minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic advisor.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1103 Reading Literature | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 3 |  |
| WLIT 1113 World Literature: Beginnings to 1650 |  |  |
| CE (ACTS Equivalency = ENGL 2113) (Satisfies |  |  |
| General Education Outcomes 3.2 and 4.1) |  |  |
| World language at the Elementary I level | 3 |  |
| Satisfies General Education Outcome 2.1: |  |  |

MATH 1313 Quantitative Reasoning (ACTS
Equivalency = MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency = MATH 1103)
or any MATH course numbered higher than MATH 1203
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
WLIT 1123 World Literature: 1650CE to Present
(ACTS Equivalency = ENGL 2123) (Satisfies
General Education Outcomes 3.2 and 4.1)
World language at the Elementary II level
Science State Minimum Core (Satisfies General Education Outcome 3.4)
U.S. History or GovernmentState Minimum Core
(Satisfies General Education Outcome 4.2)
Year Total:
Second Year Fall

ENGL 2043 Rethinking Literature 3
ENGL 2053 Transatlantic Literature from
Beginnings to 1640
World language at the Intermediate I level
Science State Minimum Core (Satisfies General
Education Outcome 3.4)
Social Sciences State Minimum Core (Satisfies
General Education Outcome 3.3) ${ }^{1}$
ENGL 2063 Transatlantic Literature from 1640 to 1865
ENGL 2073 Transatlantic Literature from 1865 to 1945
World language at the Intermediate II level
Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$
Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{2}$
Year Total:
Third Year
ENGL 2083 Transatlantic Literature from 1945 to

ENGL 3103 Approaches to Critical Thinking About
Literature and Culture (Satisfies General Education Outcomes 1.2, 5.1, and 6.1)
ENGL electives 3000-level or higher ${ }^{3}$
Social Sciences State Minimum Core (Satisfies
3
General Education Outcome 3.3) ${ }^{1}$
General Electives
3
Diversity Requirement
Select one course from ENGL 2013, 3053, 3603, 4003 , or $4903 .{ }^{4}$
ENGL electives 4000-level or higher ${ }^{3}$
General Electives

Year Total: 15 15

| Fourth Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL electives 4000-level or higher ${ }^{3}$ | 6 |  |
| Select two courses from ENGL 2013, 3053, 3603, 4003 , or $4903 .{ }^{4}$ | 6 |  |
| General Electives | 3 |  |
| ENGL electives 4000-level or higher ${ }^{3}$ |  | 3 |
| Select one course from ENGL 2013, 3053, 3603, 4003, or $4903 .{ }^{4}$ |  | 3 |
| General Electives |  | 7 |
| Year Total: | 15 | 13 |

Total Units in Sequence: ..... 120

1 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include:
AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H,MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
3 Students must complete a minimum of 6 credit hours covering periods of study before the year 1800 and 6 credit hours covering periods of study after the year 1800.
4 ENGL 3603 and ENGL 4903 may be retaken for up to 9 credit hours total towards this requirement.

## Requirements for B.A. in English with Topical Concentration

## University and College Requirements for a Bachelor of Arts in

 English: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the state minimum core (p. 81).State minimum core

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World language up to the Intermediate II level

| WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS | 3 |
| :--- | :--- | :--- |
|  | Equivalency = ENGL 2113) |  |
| WLIT 1123 | World Literature: 1650CE to Present (ACTS | 3 |
|  | Equivalency = ENGL 2123) |  |

or any 3000-level or higher literature course taught in the
Department of World Languages, Literatures \& Cultures.
A minimum of 57 credit hours in English courses from the requirements below.
ENGL 1103 Reading Literature 3
ENGL 2043 Rethinking Literature 3

| ENGL 3103 | Approaches to Critical Thinking About Literature and Culture | 3 |
| :---: | :---: | :---: |
| Transatlantic Literature Surveys |  | 2 |
| ENGL 2053 | Transatlantic Literature from Beginnings to 1640 |  |
| ENGL 2063 | Transatlantic Literature from 1640 to 1865 |  |
| ENGL 2073 | Transatlantic Literature from 1865 to 1945 |  |
| ENGL 2083 | Transatlantic Literature from 1945 to Present |  |
| Diversity Requirement - choose one course from the following: |  | 3 |
| ENGL 3543 | Topics in U.S. Latino/Latina Literature and Culture |  |
| ENGL 3553 | Topics in Native American Literature and Culture |  |
| ENGL 3573 | Special Topics in Diversity |  |
| ENGL 3583 | Topics in Arab American Literature and Culture |  |
| ENGL 3593 | Topics in Gender, Sexuality, and Literature |  |
| ENGL 3853 | Topics in African-American Literature and Culture |  |
| ENGL 4523 | Studies in U.S. Latino/Latina Literature and Culture |  |
| ENGL 4553 | Studies in Native American Literature and Culture |  |
| ENGL 4583 | Studies in Arab American Literature and Culture |  |
| ENGL 4593 | Studies in Gender, Sexuality, and Literature |  |
| ENGL 4853 | Studies in African American Literature and Culture |  |
| 12 credit hours in ENGL courses numbered 3000 -level or higher, with 12 at least 9 credit hours from these ENGL courses numbered 4000level or higher. Students must complete a minimum of 6 credit hours covering periods of study before the year 1800 and 6 credit hours covering periods of study after the year 1800. ${ }^{1}$ |  |  |
| Concentration hours |  | 21 |
| General Electives |  | 10 |
| Students who Writing must higher within Residency R | are pursuing any concentration other than Creative omplete 3 credit hours numbered 3000 -level or heir General Electives towards the University quirement (see Degree Completion Program Policy). |  |

## Total Hours

${ }^{1}$ Department listings for courses each semester will identify the period of study that each course satisfies.

Transfer Credit: In order to receive a B.A. in English from the University of Arkansas, a student must complete at least 24 credit hours in ENGL courses numbered 3000 -level or higher from the English department.

## Requirements for Topical Concentration

12 credit hours in courses from a Topical area of focus. ${ }^{1} 12$
9 hours of general electives. Students should consult with a faculty mentor when choosing general electives in order to select courses (or a supplementary minor or degree) that best support their professional goals and concentration focus.

## Total Hours

${ }^{1}$ The department will maintain a list of current Topical areas and will note on course descriptions which courses will meet a given topical area's focus in any given semester.

Writing Requirement: All upper-division English courses require a research or an analytical paper except ENGL 4003 and the courses in creative writing (ENGL 3013, ENGL 4013, ENGL 4023). For this reason all students who fulfill the requirements for a major in English thereby fulfill the Fulbright College writing requirement. In addition, 4000 -level courses
(except for those noted above) require more intensive research by, and more active participation from, students than 3000 -level courses do and require each student to complete a paper that can be included as a writing sample with applications to graduate programs or professional schools.

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

State minimum core ( p .81 ) requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic advisor.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1103 Reading Literature | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| WLIT 1113 World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) (Satisfies General Education Outcomes 3.2 and 4.1) | 3 |  |
| World language at the Elementary I level Satisfies General Education Outcome 2.1: | 3 |  |
| MATH 1313 Quantitative Reasoning (ACTS Equivalency = MATH 1113) or MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) or any MATH course numbered higher than MATH 1203 | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| WLIT 1123 World Literature: 1650CE to Present (ACTS Equivalency $=$ ENGL 2123) (Satisfies General Education Outcomes 3.2 and 4.1) |  | 3 |
| World language at the Elementary II level |  | 3 |
| Science State Minimum Core (Satisfies General Education Outcome 3.4) |  | 4 |
| U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2) |  | 3 |
| Year Total: | 15 | 16 |


| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 2043 Rethinking Literature | 3 |  |
| ENGL 2053 Transatlantic Literature from Beginnings to 1640 | 3 |  |
| World language at the Intermediate I level | 3 |  |
| Science State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| ENGL 2063 Transatlantic Literature from 1640 to |  | 3 |

ENGL 2073 Transatlantic Literature from 1865 to
World language at the Intermediate II level
Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$
Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{2}$
Year Total:

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 2083 Transatlantic Literature from 1945 to Present | 3 |  |
| ENGL 3103 Approaches to Critical Thinking About Literature and Culture (Satisfies General Education Outcomes 1.2, 5.1, and 6.1) | 3 |  |
| ENGL electives 3000-level or higher ${ }^{3}$ | 3 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| General Electives | 3 |  |
| Diversity Requirement |  | 3 |
| Topical Area of Focus ${ }^{4}$ |  | 3 |
| ENGL electives 4000-level or higher ${ }^{3}$ |  | 3 |
| General Electives |  | 6 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| ENGL electives 4000-level or higher ${ }^{3}$ | 6 |  |
| Topical Area of Focus ${ }^{4}$ | 3 |  |
| General Electives | 6 |  |
| ENGL electives 4000-level or higher ${ }^{3}$ |  | 3 |
| Topical Area of Focus ${ }^{4}$ |  | 6 |
| General Electives |  | 4 |
| Year Total: | 15 | 13 |

Units

Total Units in Sequence:
120
${ }^{1}$ The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include:
AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H,
MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{3}$ Students must complete a minimum of 6 credit hours covering periods of study before the year 1800 and 6 credit hours covering periods of study after the year 1800 .
${ }^{4}$ The department will maintain a list of current Topical areas and will note on course descriptions which courses will meet a given topical area's focus in any given semester.

## Minor in English

additional hours chosen from English (ENGL) courses and/or World Literature (WLIT) courses numbered 3000 -level or higher.

## Minor in Rhetoric and Writing Studies

The minor in Rhetoric and Writing Studies provides non-English majors with advanced instruction in rhetorical studies and document design. Students will learn to examine the roles of language, writing, and communication in different social and professional settings. In addition to receiving practical instruction in effective writing, students will also develop analytical tools for understanding language as social action.

## Requirements for a minor in Rhetoric and Writing Studies

| Students must complete 15 hours from among the following courses: | 15 |  |
| :--- | :--- | :--- |
| ENGL 2003 | Advanced Composition |  |
| ENGL 2013 | Essay Writing |  |
| ENGL 2173 | Literacy in America |  |
| ENGL 3053 | Technical and Professional Writing (ACTS <br>  <br>  <br> Equivalency = ENGL 2023) |  |
| ENGL 3603 | Topics in Rhetoric and Composition |  |
| ENGL 4003 | Style and Grammar for Professional Writers |  |
| ENGL 4903 | Studies in Rhetoric and Composition |  |
| Total Hours |  | $\mathbf{1 5}$ |

## Honors in English

Requirements for Graduation with Honors in English: Both the College and the Departmental Honors Program in English allow upperdivision undergraduates to strengthen their study of English and adapt it to their interests. Honors candidates enroll in special courses and do directed independent study and research. In addition to the college and departmental requirements for the major in English and the general college requirements for the B.A. degree, each honors candidate in English must

1. Be accepted as an honors candidate by the department (requiring a minimum, cumulative grade-point average of 3.5 in all course work),
2. Complete at least nine hours of non-thesis honors course work, at least three hours of which must be in English,
3. Enroll in at least three hours of Senior Thesis ENGL 498 V and write an honors thesis (either a critical study or a creative writing project) under the direction of a faculty member in the Department of English, and
4. Defend the candidate's entire honors program in an oral examination.

Candidates may petition to enroll in a departmental graduate seminar.
To complete the required thesis successfully, candidates should choose an honors thesis adviser as early as possible. An adviser should be selected, and an Honors Agreement completed, no later than the first semester in a candidate's junior year. Candidates who complete the honors program with merit will graduate with the distinction "English Scholar Cum Laude." The distinctions of Magna Cum Laude and Summa

Cum Laude will be awarded only for exceptional work and will be based on the candidate's entire honors program.

## English (B.A.) Teacher Licensure Requirements

Please refer to the Secondary Education Requirements (https://teachereducation.uark.edu/licensure/) for Fulbright College Students.

Students wanting to teach English in middle school should consult with a middle-level adviser in the College of Education and Health Professions.

## Faculty

Bailey, Constance, Ph.D., M.A. (University of Missouri-Columbia), B.A. (Alcorn State University), Assistant Professor, 2016.
Blunschi, Jane, M.F.A. (University of Arkansas), B.A. (University of Louisiana at Lafayette), Instructor, 2018.
Booker, M. Keith, Ph.D. (University of Florida), M.S., M.A. (University of Tennessee), B.A. (Vanderbilt University), Professor, 1990, 1997.
Brock, Geoffrey Arthur, Ph.D. (University of Pennsylvania), M.F.A. (University of Florida), M.A. (University of Pennsylvania), B.A. (Florida State University), Distinguished Professor, 2005, 2020.
Burris, Sidney J., Ph.D., M.A. (University of Virginia), B.A. (Duke University), Professor, 1986, 2002.
Candido, Joseph D., Ph.D. (Indiana University at Bloomington), M.A. (University of New Hampshire), B.A. (Colby College), Professor, 1979, 1997.

Cochran, Robert Brady, Ph.D. (University of Toronto), M.A., B.S. (Northwestern University), Professor, 1976, 1987.
Davis, Geffrey, Ph.D., M.F.A., M.A. (Penn State University), B.A. (Oregon State University), Associate Professor, 2014, 2019.
Dempsey, Sean A., Ph.D., M.A. (Boston University), B.A. (Connecticut College), Associate Professor, 2009, 2022.
Gray, Laura Virginia, M.F.A. (University of Arkansas), M.A. (University of Montevallo), B.A. (University of North Alabama), Instructor, 2000, 2004.
Hallett, LewEllyn, M.F.A. (Bowling Green State University), B.A. (University of New Mexico), Instructor, 2013.
Hinrichsen, Lisa, Ph.D., M.A. (Boston University), B.A. (Wellesley College), Associate Professor, 2008, 2015.
Hurt, Bryan M., Ph.D. (University of Southern California), B.A. (Ohio State University), Assistant Professor, 2019.
Jensen, Toni, Ph.D. (Texas Tech University), M.A., B.A. (University of South Dakota), Associate Professor, 2014, 2019.
Kahf, Mohja, Ph.D., B.A. (Rutgers State University-New Brunswick), Professor, 1995, 2019.
Kayser, Casey Lee, Ph.D. (Louisiana State University), M.A. (University of Missouri-Columbia), B.A. (Westminster College), Associate Professor, 2012, 2022.
Long, Mary Beth, Ph.D., M.A. (University of Massachusetts, Amherst), B.A. (Ouachita Baptist University), Assistant Professor, 2014.

Madison, Karen L., Ph.D., M.A., B.A. (University of Arkansas), Instructor, 2013.

Madison, Robert D., Ph.D. (Northwestern University), M.A. (Clark University), B.A. (University of Rhode Island), Instructor, 2016.
Marren, Susan M., Ph.D., M.A. (University of Michigan-Ann Arbor), B.A. (Cornell University), Associate Professor, 1995, 2002.
McCombs, Davis, M.F.A. (University of Virginia), A.B. (Harvard), Professor, 2002, 2018.
Padilla, Yajaira, Ph.D. (University of California, San Diego), B.A. (University of California, Santa Cruz), Professor, 2013, 2022.
Pope, Adam, Ph.D. (Purdue University), M.A. (University of Arkansas),
B.A. (Freed-Hardeman University), Assistant Professor, 2013.

Pritchard, Eric, Ph.D., M.A., (University of Wisconsin-Madison), B.A. (Lincoln University in Pennsylvania), Associate Professor, 2021.
Quinn, William A., Ph.D., M.A. (The Ohio State University), B.A. (Xavier University), Distinguished Professor, 1979, 2018.
Raines, Anne, M.A., B.A. (University of Arkansas), Instructor, 2019. Roberts, Robin, Ph.D., M.A. (University of Pennsylvania), B.A. (Mount Holyoke College), Professor, 2011.
Smith, Joshua Byron, Ph.D., M.A. (Northwestern University), B.A. (University of Illinois at Chicago), Associate Professor, 2011, 2019.
Sparks, Leigh Pryor, Ph.D. (University of Arkansas), M.A., B.A. (Stanford University), Instructor, 2009, 2019.
Stephens, Dorothy Anne, Ph.D. (University of California-Berkeley), M.A. (University of Illinois-Chicago), B.A. (Northwestern University), Professor, 1992, 2008.
Szwydky-Davis, Lissette López, Ph.D., M.A. (Penn State University), B.A. (University of Miami), Associate Professor, 2013.

Teuton, Sean Kicummah, Ph.D., M.A. (Cornell University), B.A. (University of Colorado-Boulder), Professor, 2013, 2018.
Viswanathan, Padma, M.F.A. (University of Arizona), M.A. (Johns Hopkins University), B.A. (University of Alberta), Professor, 2010, 2022. Walsh, Lora, Ph.D. (Northwestern University), M.Sc. (University of Edinburgh), B.A. (Pepperdine University), Assistant Professor, 2014. Yandell, Kay, Ph.D., M.A. (Cornell University), B.A. (University of Arkansas), Associate Professor, 2013, 2018.

## Courses

ENGL 0001. Writing Lab. 1 Hour.
Required corequisite course with ENGL 1013 for students with scores below 19 in ACT English or below 470 in SAT Verbal. Writing labs, practice in study skills and time management, and mentorship from instructor. Credit not applied to hours required for degree. Corequisite: ENGL 1013. (Typically offered: Fall and Spring)

ENGL 1013. Composition I (ACTS Equivalency = ENGL 1013). 3 Hours. Teaches writing strategies for varied contexts, methods of research and integrating sources, and processes for drafting and revision. Pre- or Corequisite: ENGL 0001 or 19 or above on ACT English; or 490 or above on SAT Evidence-Based Reading and Writing; or 80 or above on Compass Writing Skills; or 83 or above on Accuplacer Sentence Skills; or above 255 on Accuplacer Next Generation Writing; or High School GPA of 3.2 or above. (Typically offered: Fall, Spring and Summer)

ENGL 1013H. Honors Composition I. 3 Hours.
Composition I offered at an Honors level, with the same textbooks and major assignments. Prerequisite: ACT English scores of 28 or above or SAT EvidenceBased Reading and Writing scores of 630 or above and honors student. (Typically offered: Fall)
This course is equivalent to ENGL 1013.
ENGL 1023. Composition II (ACTS Equivalency = ENGL 1023). 3 Hours. Builds on the skills, tools, and concepts presented in ENGL 1013 Composition I. Students will gain a rhetorical understanding of writing and composing genres in order to respond to different audience needs, contexts, and purposes. Prerequisite: ENGL 1013 or the equivalent. (Typically offered: Fall, Spring and Summer) This course is cross-listed with ENGL 1023H, ENGL 1033.
ENGL 1023H. Honors Composition II. 3 Hours.
Composition II offered at an Honors level, with the same textbooks and major assignments. Prerequisite: ENGL 1013 or the equivalent, ACT English scores of 28 or above or SAT Evidence-Based Reading and Writing scores of 630 or above and honors student. (Typically offered: Fall and Spring)
This course is cross-listed with ENGL 1023, ENGL 1033.

ENGL 1033. Technical Composition II (ACTS Equivalency = ENGL 1023). 3 Hours.
Composition II for Engineering and Business students, or any other students who are interested. Focuses on learning technical writing conventions and genres, such as definitions, instructions, correspondence, and proposals. Fulfills Core Curriculum requirement for ENGL 1023 Composition II. Prerequisite: ENGL 1013 or the equivalent. (Typically offered: Fall and Spring)
This course is cross-listed with ENGL 1023, ENGL 1023H.
ENGL 1033H. Honors Technical Composition II. 3 Hours.
Technical Composition II offered to Engineering and Business students, or any other students who are interested, at an Honors level, with the same textbooks and major assignments. Prerequisite: ENGL 1013 or the equivalent, ACT English scores of 28 or above or SAT Evidence-Based Reading and Writing scores of 630 or above and honors student. (Typically offered: Irregular)
This course is cross-listed with ENGL 1023, ENGL 1023H, ENGL 1033.
ENGL 1103. Reading Literature. 3 Hours.
Introduces students to close-reading strategies for analyzing texts with scholarly care and attention. Readings will vary based on instructor expertise and interest. (Typically offered: Fall and Spring)

## ENGL 1213. Introduction to Literature. 3 Hours.

Approaches to reading and writing about fiction, drama, and poetry at the college level. (Typically offered: Fall and Spring)

ENGL 1213H. Honors Introduction to Literature. 3 Hours.
Approaches to reading and writing about fiction, drama, and poetry at the college level. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to ENGL 1213.
ENGL 2003. Advanced Composition. 3 Hours.
Review course in English composition. Exemption for this course may be granted for certain majors that require it by a grade of at least a "B" in ENGL 1013 and ENGL 1023 (or equivalent courses from an accredited institution), by achieving a score of 4 or 5 on the AP Language and Composition Examination and the AP Literature and Composition Examination, or by achieving a 6 HL or 7 HL on the IB Examination in English. Cannot be counted toward a major in English. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall, Spring and Summer)

## ENGL 2013. Essay Writing. 3 Hours.

Through assignments in Creative Nonfiction, from memoir to personal journalism, students will learn how form affects content, and develop their personal voice and their ability to use rhetorical techniques and strategies in all forms of writing. Prerequisite: ENGL 1013 and (ENGL 1023 or ENGL 1033 or equivalent). (Typically offered: Fall and Spring)
ENGL 2023. Creative Writing I (ACTS Equivalency = ENGL 2013). 3 Hours. Beginning level workshop course in which students write original poems and stories. Reading and detailed discussion of poems and stories in anthologies is required. Designed to teach the student the fundamental techniques of fiction and poetry. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2043. Rethinking Literature. 3 Hours.
Introduces students to groupings of texts that are not usually discussed in traditional English classes, asking why some texts are considered Literature while others are not. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)
ENGL 2053. Transatlantic Literature from Beginnings to 1640. 3 Hours. A critical and historical survey of transatlantic literature from its beginnings to 1640, with attention to identifying cultural and/or historical trends of the period. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2063. Transatlantic Literature from 1640 to 1865. 3 Hours.
A critical and historical survey of the development of transatlantic literature from 1640 to 1865 , with attention to identifying cultural and/or historical trends of the period. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2073. Transatlantic Literature from 1865 to 1945. 3 Hours.
A critical and historical survey of the development of transatlantic literature from 1865 to 1945 , with attention to identifying cultural and/or historical trends of the period. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)
ENGL 2083. Transatlantic Literature from 1945 to Present. 3 Hours.
A critical and historical survey of the development of transatlantic literature from 1945 to the present, with attention to identifying cultural and/or historical trends of the period. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2173. Literacy in America. 3 Hours.
A course that examines the myriad definitions of literacy (and illiteracy) and their connections to issues of social class, occupational status, economic and political structures, educational institutions, cultural organizations, and the media. (Typically offered: Spring)
ENGL 2303. English Literature from the Beginning through the 17th Century (ACTS = ENGL 2673). 3 Hours.
A critical and historical survey of the development of literature in the British Isles from its beginnings to the end of the seventeenth century. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2303C. English Literature from the Beginning through the 17th Century (ACTS = ENGL 2673). 3 Hours.
A critical and historical survey of the development of literature in the British Isles from its beginnings to the end of the seventeenth century. Lecture and drill.
Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall)
This course is equivalent to ENGL 2303.
ENGL 2313. Survey of English Literature from 1700 to 1900 (ACTS Equivalency = ENGL 2683). 3 Hours.
A critical and historical survey of the development of literature in the British Isles from 1700 to 1900. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)
ENGL 2323. Survey of Modern and Contemporary British, Irish, and Postcolonial Literature. 3 Hours.
A survey of modern and contemporary literature in English written in Great Britain, Ireland, Africa, Asia, and the Caribbean. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2343. Survey of American Lit from the Colonial Period through Naturalism (ACTS Equiv=ENGL 2653). 3 Hours.
A survey of major American writers from the colonial period to 1900. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2353. Survey of Modern and Contemporary American Literature (ACTS Equivalency = ENGL 2663). 3 Hours.
A survey of American writers after 1900. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

## ENGL 2413. Introductory Topics in English. 3 Hours.

Students will understand concepts and issues of theme, form, and motif in literary works about the designated topic. Students will improve in their abilities to read literary works carefully and critically and to write about literature correctly and cogently. Topics and content will vary from semester to semester. (Typically offered: Irregular)

## ENGL 3013. Creative Writing II. 3 Hours.

Laboratory course for students who wish to attempt original work in the various literary forms. Prerequisite: ENGL 2023 or equivalent. (Typically offered: Fall and Spring)

ENGL 3053. Technical and Professional Writing (ACTS Equivalency = ENGL 2023). 3 Hours.

Intensive practice in such types of writing as processes, descriptions of mechanism, abstracts, and laboratory and research reports. The criteria for effective written exposition in the scientific areas, including agriculture and engineering. Prerequisite: ENGL 1013 and ENGL 1023 or equivalent. (Typically offered: Fall and Spring)

ENGL 3083. Professional Topics. 3 Hours.
Specialized topics related to professional issues in the humanities, e.g. academic and alternative-academic job searches, publication workshops, public humanities, and/or teaching of humanities disciplines at various levels. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with HUMN 3083.
ENGL 3103. Approaches to Critical Thinking About Literature and Culture. 3 Hours.
Introduces students to a selection of critical methods for studying literature and culture, emphasizing careful reflection on methodological choices. Readings will vary based on instructor expertise and interest. (Typically offered: Fall and Spring)

ENGL 3113. Folklore. 3 Hours.
Popular literature (ballads, folktales, etc.). Prerequisite: Junior standing. (Typically offered: Irregular)

ENGL 3123. Folk and Popular Music Traditions. 3 Hours.
Introduction to folk and popular music studies. Emphasis on American traditions. (Typically offered: Irregular)

## ENGL 3173. Introduction to Linguistics. 3 Hours.

Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, the history of linguistic scholarship. Prerequisite: Junior standing. (Typically offered: Irregular)
This course is cross-listed with COMM 3173, WLLC 3173.
ENGL 3203. Poetry. 3 Hours.
A critical introduction to the genre. (Typically offered: Fall and Spring)
ENGL 3213. Fiction. 3 Hours.
A critical introduction to the genre. (Typically offered: Fall and Spring)
ENGL 3223. Drama. 3 Hours.
The companion course of Theatre in London Study Abroad which immerses scholars in the world of theatre and culture in Britain. Students spend four weeks in London with excursions to Stratford-upon-Avon, Oxford and Bath. Literature, performance, design and history are all explored through lectures, field trips and writing prompts. (Typically offered: Summer)

ENGL 3253. The Latinx Image in Media. 3 Hours.
Exploration of the image and experience of Latinx populations as represented in visual and print media, including film, television, news journalism, and art. Topics related to U.S. Latinx history, culture, politics, and socioeconomics will be examined in the analyses of these mediated depictions. (Typically offered: Irregular)

ENGL 3263. African Americans in Film. 3 Hours.
A survey of the history of images of African Americans in film, especially as these images are examined in the context of stereotypical renditions and/or realistic representations of African American experiences. Issues of African American history, culture, and socio-political context will be addressed in the analyses of these films. Prerequisite: ENGL 1023 and advanced standing. (Typically offered: Irregular) This course is cross-listed with AAST 3263, JOUR 3263, COMM 3263.

ENGL 3283. Topics in Popular Culture and Popular Genres. 3 Hours.
Survey of a broad topical area in popular culture and popular genres, such as science fiction or detective fiction. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3433. Introduction to Chaucer. 3 Hours.
Course designed primarily for undergraduates. Extensive reading in Chaucer's major works. (Typically offered: Irregular)

ENGL 3443. Topics in Literature, Medicine, and Science. 3 Hours. Examines the intersections between medical and scientific topics and literature, with attention to specific theories, themes, genres, authors, historical moments, literary movements, or other organizing principles. Prerequisite: ENGL 1013 and ENGL 1023, or equivalent in both. (Typically offered: Spring Odd Years) May be repeated for up to 9 hours of degree credit.

ENGL 3543. Topics in U.S. Latino/Latina Literature and Culture. 3 Hours. The study of works of U.S. Latino/Latina literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3553. Topics in Native American Literature and Culture. 3 Hours.
The study of works of Native American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## ENGL 3573. Special Topics in Diversity. 3 Hours.

The study of literature and culture with specific focus on issues of diversity, inclusion, and equality. Courses may be organized around specific theories, themes, genres, authors, historical moments, artistic movements, comparative and intersectional approaches, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3583. Topics in Arab American Literature and Culture. 3 Hours. The study of works of Arab American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. No knowledge of Arabic necessary. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3593. Topics in Gender, Sexuality, and Literature. 3 Hours.
The study of gender or sexuality and literature, with attention to specific theories, themes, genres, authors, historical moments, literary movements, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## ENGL 3603. Topics in Rhetoric and Composition. 3 Hours.

The study of special topics in the field of Rhetoric and Composition. Content will vary. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3623. The Bible as Literature. 3 Hours.
The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Typically offered: Irregular) This course is cross-listed with WLIT 3623.

ENGL 3633. Writing on Social Issues. 3 Hours.
The study and application of writing on a range of social issues. Content will vary. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3713. Topics in Medieval Literature and Culture. 3 Hours.
Study of the languages, literature, and civilization of the British Isles from approximately 500 to 1500 CE (including Old English, Middle English, Latin, Celtic, Anglo-Norman, and Scandinavian). Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3713H. Honors Topics in Medieval Literature and Culture. 3 Hours.
Study of the languages, literature, and civilization of the British Isles from approximately 500 to 1500 CE (including Old English, Middle English, Latin, Celtic, Anglo-Norman, and Scandinavian). Content varies. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is equivalent to ENGL 3713.
ENGL 3723. Topics in Renaissance Literature and Culture. 3 Hours.
The study of literary works of the English Renaissance, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Course content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 3723H. Honors Topics in Renaissance Literature and Culture. 3 Hours. The study of literary works of the English Renaissance, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Course content varies. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is equivalent to ENGL 3723.
ENGL 3733. Topics in Restoration and Eighteenth-Century Literature and Culture. 3 Hours.
The study of Restoration and eighteenth-century literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 3743. Topics in Nineteenth-Century British Literature and Culture. 3 Hours.
The study of literature of the 19th century, with attention to particular themes, genres, authors, literary movements, historical movements, or other organizing principles. Course content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## ENGL 3753. Topics in Modern and Contemporary British Literature and

 Culture. 3 Hours.The study of a special topic in the field of modern and contemporary British literature and culture. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 3833. Topics in American Literature and Culture to 1900. 3 Hours. The study of American literature and culture to 1900, with attention to particular themes, genres, authors, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3843. Topics in Modern and Contemporary American Literature and Culture. 3 Hours.
The study of a special topic in the field of modern and contemporary American literature and culture. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 3853. Topics in African-American Literature and Culture. 3 Hours.
The study of works of African American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with AAST 3853.
ENGL 3863. Topics in Literature and Culture of the American South. 3 Hours. The study of works of literature of the American South, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3873. Seminar in Medical Humanities. 3 Hours.
Combines literary and critical texts that lead students to consider the ways in which literature and the humanities enrich and inform medical education and practice. Students will practice critical analysis and reflection to instill in them a commitment to compassionate, community responsive, and culturally competent medical care. (Typically offered: Spring)
ENGL 3873H. Honors Seminar in Medical Humanities. 3 Hours.
Combines literary and critical texts that lead students to consider the ways in which literature and the humanities enrich and inform medical education and practice. Students will practice critical analysis and reflection to instill in them a commitment to compassionate, community responsive, and culturally competent medical care. (Typically offered: Spring)
This course is equivalent to ENGL 3873.
ENGL 3903. Special Topics. 3 Hours.
Survey of a broad topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 3923H. Honors Colloquium. 3 Hours.
Covers a special topic or issue. Offered as part of the honors program. Prerequisite: honor candidacy (not restricted to candidacy in English). (Typically offered: Irregular) May be repeated for degree credit.

ENGL 4003. Style and Grammar for Professional Writers. 3 Hours.
Study of English style and grammar at an advanced level for students who plan to teach writing or practice as professional or technical writers. (Typically offered: Fall Odd Years)

## ENGL 4013. Undergraduate Poetry Workshop. 3 Hours.

Gives close attention to individual manuscripts in a workshop environment.
Prerequisite: ENGL 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
ENGL 4023. Undergraduate Fiction Workshop. 3 Hours.
Gives close attention to individual manuscripts in a workshop environment. Prerequisite: ENGL 3013 or equivalent. (Typically offered: Irregular)
ENGL 4113. Undergraduate Independent Study. 3 Hours.
Undergraduate original research and writing. Prerequisite: 'B' average and twothirds (21 hours) of regular requirements for English major completed. Departmental approval and instructor approval required. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

ENGL 4133. Writing Nature. 3 Hours.
Study of writings about nature, both scientific and literary. Examination of the basis of each author's relationship with (and definition of) the natural world while examining the literary/aesthetic aspects of that experience. Prerequisite: ENGL 1023. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

## ENGL 4133H. Honors Writing Nature. 3 Hours.

Study of writings about nature, both scientific and literary. Examination of the basis of each author's relationship with (and definition of) the natural world while examining the literary/aesthetic aspects of that experience. Prerequisite: ENGL 1023. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.
This course is equivalent to ENGL 4133.
ENGL 4143. American Film Survey. 3 Hours.
A survey of major American genres, major directors, and films that have influenced the development of motion pictures. (Typically offered: Irregular)
This course is cross-listed with COMM 4143.

ENGL 4193. Undergraduate Internship in English. 3 Hours.
Internship changes depending on availability and student interest. Prerequisite: Junior standing and department consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit

ENGL 4303. Introduction to Shakespeare. 3 Hours.
Extensive reading in Shakespeare's comedies, histories, tragedies, and nondramatic poetry. (Typically offered: Fall)

ENGL 4503. Introduction to Literary Theory. 3 Hours.
A historical survey of literary theory from Plato onwards. (Typically offered: Irregular)
ENGL 4513. Studies in Literary Criticism and Theory. 3 Hours.
A survey of contemporary trends in literary criticism. Emphasis will be placed on engaging the practices of a particular theory. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4523. Studies in U.S. Latino/Latina Literature and Culture. 3 Hours.
The study of works of U.S. Latino/a literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4553. Studies in Native American Literature and Culture. 3 Hours.
The study of works of Native American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4563. Studies in Major Authors. 3 Hours.
The concentrated study of works by one or more major authors. At least one major paper will be required. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4573. Studies in Major Literary Movements. 3 Hours.
This course focuses on the literature either of a major literary movement such as Romanticism or Modernism or of a more specific topic such as Utopianism in twentieth-century writing. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4583. Studies in Arab American Literature and Culture. 3 Hours.
The study of works of Arab American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. Research paper required. No knowledge of Arabic necessary. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## ENGL 4593. Studies in Gender, Sexuality, and Literature. 3 Hours.

The study of gender or sexuality and literature, with attention to specific theories, themes, genres, authors, historical moments, literary movements, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4603. Special Studies. 3 Hours.
Concentrated study of a specific topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

ENGL 4603H. Honors Special Studies. 3 Hours.
Concentrated study of a specific topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to ENGL 4603.

ENGL 4673. Special Studies in Diversity. 3 Hours.
The study of literature and culture with specific focus on issues of diversity and inclusion. May be organized around specific theories, themes, genres, authors, or other organizing principles. At least one major research paper will be required. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit

ENGL 4713. Studies in Medieval Literature and Culture. 3 Hours.
Study of the languages, literature, and civilization of the British Isles from approximately 500 to 1500 CE (including Old English, Middle English, Celtic, AngloNorman, and Scandinavian). Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4723. Studies in Renaissance Literature and Culture. 3 Hours.
The study of literary works of the English Renaissance, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Course content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4733. Studies in Restoration and Eighteenth-Century Literature. 3 Hours. The study of Restoration and eighteenth-century literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## ENGL 4743. Studies in Nineteenth-Century British Literature and Culture. 3

 Hours.The study of literature of the nineteenth century, with attention to particular themes, genres, authors, literary movements, historical movements, or other organizing principles. Course content varies. At least one major research paper will be required (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4753. Studies in Modern and Contemporary British Literature and Culture. 3 Hours.
The study of modern and contemporary British literature and culture. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4833. Studies in American Literature and Culture to 1900. 3 Hours. The study of American literature and culture to 1900, with attention to particular themes, genres, authors, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4843. Studies in Modern and Contemporary American Literature and Culture. 3 Hours.
The study of modern and contemporary American literature and culture, with attention to particular themes, genres, authors, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4853. Studies in African American Literature and Culture. 3 Hours.
The study of works of African American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

This course is cross-listed with AAST 4853.
ENGL 4863. Studies in Literature and Culture of the American South. 3 Hours.
The study of works of literature of the American South, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least on major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4903. Studies in Rhetoric and Composition. 3 Hours.
Concentrated study of a specific topical area related to Rhetoric and Composition. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4933. Studies in Popular Culture and Popular Genres. 3 Hours.
The study of a focused topical area in popular culture and popular genres, such as science fiction or detective fiction. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 498V. Senior Thesis. 1-6 Hour.
Honors thesis under the direction of a faculty member in the Department of English. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## Gender Studies (GNST)

Lisa Corrigan
Director of Studies
417 Kimpel Hall
479-575-3046
Gender Studies Website (https://fulbright.uark.edu/programs/genderstudies/)

The gender studies minor introduces students to the ways that various academic disciplines have examined women's and men's differing participation in work, the family, political systems, and creative endeavors. Courses explore sex and gender differences and such concepts as masculinity and femininity, essence and performance; distributions of power, work, and resources; and the symbolic representation of gender and identity in literature, religion, and art. The minor is often chosen by students interested in investigating materials previously neglected by scholars and in fresh perspectives on traditional subject matter.

Requirements for a Minor in Gender Studies. Students must complete 15 credit hours from the list below, including six credit hours numbered at the 3000-level or higher.

| GNST 2003 | Introduction to Gender Studies | 3 |
| :--- | :--- | ---: |
| or GNST 2003Honors Introduction to Gender Studies |  |  |


| ENGL 3853 | Topics in African-American Literature and Culture (topic must be related to gender studies and approved by the program director) |
| :---: | :---: |
| ENGL 4523 | Studies in U.S. Latino/Latina Literature and Culture (topic must be related to gender studies and approved by the program director) |
| ENGL 4593 | Studies in Gender, Sexuality, and Literature |
| GNST 2123 | Gender, Bodies, and Technologies |
| GNST 2223 | Race, Gender, and Sport |
| GNST 3103 | The Queer U.S. South |
| GNST 3203 | Gender and the Environment |
| $\begin{aligned} & \text { GNST/WLIT } \\ & 4443 \end{aligned}$ | Queer Theor(ies) |
| GNST 490V or GNST 490 | Independent Study OVH |
| GNST 4913 |  |
| GNST 4983 | Special Topics in Gender Studies |
| HIST 3073 |  |
| HIST 3083 |  |
| HIST 3093 | Women in U.S. History |
| HIST 3333 | LGBTQ+ Histories |
| HIST 3923H | Honors Colloquium (topic must be related to gender studies and approved by the program director) |
| HIST 4133 | Society and Gender in Modern Europe |
| HIST 4413 | New Women in the Middle East |
| HIST 4713 | Women, Gender, and Sexuality in Colonial Latin America |
| HUMN 3923H | Honors Colloquium (topic must be related to gender studies and approved by the program director) |
| LALS 4003 | Latin American Studies Colloquium (topic must be related to gender studies and approved by the program director) |
| PBHL 1303 | Introduction to Human Sexuality |
| PHIL 4333 | Feminist Philosophy |
| $\begin{aligned} & \text { PLSC/GNST } \\ & 4223 \end{aligned}$ | Gender and Justice in the U.S. |
| PLSC 4573 | Gender and Politics |
| $\begin{aligned} & \text { SOCI } 3193 \\ & \text { or SOCI } 319 \end{aligned}$ | Race, Class, Gender, and Sexuality <br> Race, Class, Gender, and Sexuality in America |
| SOCI 3263 | Families and Social Change |
| SOCI 4153 | Race and Society |
| WLIT 3983 | Special Studies (Topic: Women and Arabic Literature) |

## Total Hours

## Courses

GNST 2003. Introduction to Gender Studies. 3 Hours.
This course explores cultural constructions of gender and sexuality using a variety of media, including literature, film, and architecture. (Typically offered: Fall and Spring)

GNST 2003H. Honors Introduction to Gender Studies. 3 Hours.
This course explores cultural constructions of gender and sexuality using a variety of media, including literature, film, and architecture. (Typically offered: Fall and Spring) This course is equivalent to GNST 2003.

GNST 2123. Gender, Bodies, and Technologies. 3 Hours.
Explores the relationship between gendered bodies and technology while engaging with theories of the body and its interactions/intersections with technology. Examines theories of power and technologies of self to better understand the relationship between gender, bodies, and technology. (Typically offered: Fall Odd Years)

## GNST 2223. Race, Gender, and Sport. 3 Hours.

Addresses the relationship between race, gender and sport by examining how sport gives meaning to racial and gender identity and the ways that sport works as a setting in which political struggles around race and gender are imagined and expressed. (Typically offered: Spring Odd Years)
GNST 2403. Dissecting Gender in Science. 3 Hours.
Examines the role of gender in science. Explores how perceptions of masculinity and femininity have been informed by science and how science's answers to questions of gender have been historically impaired by social understandings of gender. (Typically offered: Fall Odd Years)

GNST 3103. The Queer U.S. South. 3 Hours.
Presents queer perspectives on the U.S. South. Focuses on autobiographical, historical, and critical-qualitative analyses that attest to the innovative or inventive ways LGBTQ+ communities have survived and thrived in southern areas often deemed antithetical to a liberatory gender/sexual political agenda. (Typically offered: Spring Even Years)

## GNST 3203. Gender and the Environment. 3 Hours.

Explores how "gendered frames" animate public, technical, and private discourse about the environment. Conduct qualitative research about gender, the environment, and popular rhetoric. Emphasizes the application of decolonial theory, critical race theory, and queer theory to gender studies research in the environmental humanities. (Typically offered: Fall Even Years)
GNST 3213. Deflowering: Gender, Sexuality, and Plants in World Culture. 3 Hours.
Discusses the intersection of plants and gender, involving a variety of disciplines, including: literature, art, agriculture, history, anthropology, and botany. Explores connections between gender and plants and considers how our botanical understandings of plant sex/gender affect cultural knowledge of plants worldwide. (Typically offered: Spring Odd Years)
GNST 3303. Gender and Pop Culture. 3 Hours.
Introduces various mediums of popular culture and analyzes the role of gender, race, sexuality, class, and identity in these texts. Explores critical and rhetorical theories related to popular culture. (Typically offered: Fall and Summer)

GNST 3403. Gender, Sexuality, and Animality. 3 Hours.
Explores the long list of language and imagery tying women to animals using examples in marketing, film, art, and comic books. Examining the connections between women, animals, and oppression through an intersectional lens. (Typically offered: Fall Even Years)
GNST 4133. Italian Women from the Middle Ages to the Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with ITAL 4133, MRST 4133.
GNST 4223. Gender and Justice in the U.S.. 3 Hours.
Provide students with a historic and contemporary overview of the laws, policies, and politics surrounding gender, citizenship, and justice in the United States. Explores how law and public policy have affected the lives of marginalized sex and gender groups in the United States as well as the political dynamics surrounding gender and sexuality law. (Typically offered: Spring Even Years)
This course is cross-listed with PLSC 4223.

GNST 4333. Gender, Sexuality, and Archival Research. 3 Hours.
Studies in intersectional feminist, queer, and trans perspectives on archival research. Focuses on employing methodologies in a range of archival contexts, emphasizing the politics of archiving and the implicit gendered, racialized, and classbased biases that permeate archival inquiry. (Typically offered: Fall Odd Years)

GNST 4443. Queer Theor(ies). 3 Hours.
Introduction to the complex history and evolution of Queer Theory into Queer Theor(ies) from Foucault to the Present. (Typically offered: Irregular)
This course is equivalent to WLIT 4443.
GNST 490V. Independent Study. 1-6 Hour.
An exploration of gender studies topics studied independently with the supervision of a faculty member. Credit arranged with instructor. Prerequisite: GNST 2003 or GNST 2003H or instructor consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## GNST 4983. Special Topics in Gender Studies. 3 Hours.

This course covers gender topics that are not usually offered in-depth in regularly offered courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## Geography (GEOG)

The Geography Program offers an undergraduate major leading to a Bachelor of Arts in geography. Students may choose either the normal geography degree program or the concentration in cartography and remote-sensing GIS. The program also offers two minors: geography and historic preservation.

Undergraduates who wish to major in geography should identify themselves to the department as soon as possible in order that they may develop a meaningful sequence of courses and take part in departmental activities.

Those interested in the graduate program should consult the Graduate School Catalog (http://catalog.uark.edu/graduatecatalog/programsofstudy/ geosciencesdepartmentofgeos/).

Requirements for a Major in Geography: In addition to the University Core requirements (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the University/state minimum core requirements.

| GEOS 1123 | Human Geography (ACTS Equivalency = GEOG <br> 1113) | 3 |
| :--- | :--- | :---: |
| GEOS 2003 | World Regional Geography (ACTS Equivalency = <br> GEOG 2103) | 3 |
| GEOS 1113 | Physical Geology (ACTS Equivalency = GEOL <br> \& GEOS 1111L | 1114 Lecture) <br> and Physical Geology Laboratory (ACTS |
| GEOS 1133 | Equivalency = GEOL 1114 Lab) |  |
| \& GEOS 1131L | Earth Science (ACTS Equivalency = GEOL 1124 <br> Lecture) <br> and Earth Science Laboratory (ACTS Equivalency <br> = GEOL 1124 Lab) | 4 |

Six hours in a single world language at the 1013 Elementary II level 6 or higher. ${ }^{1}$
GEOS 3023 Introduction to Cartography 3
GEOS 3543 Geospatial Applications and Information Science 3

In addition, students must complete a minimum of 15 hours of GEOS at the 3000-level or above, classes must include one technical, two regional and two topical courses.

## Total Hours

${ }^{1}$ World language courses taken are dependent on placement level in sequence.

Students who expect to enter graduate school are encouraged to register for GEOS 410V their senior year. Electives in closely related fields are considered a part of the program and, upon prior approval of the department, six hours may be counted toward the major. Those planning to teach in secondary schools should note that they can both earn their degree in geography and qualify for a teaching certificate; they should consult with the department as early as possible.

Writing Requirement: The college writing requirement is to be met by completion of a term paper deemed satisfactory by the student's adviser and instructor of an upper-level geoscience course. The college writing requirement may also be met by the completion of an honors thesis.

## Geography B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Fall | Units |
| :---: | :---: | :---: |
|  |  | Spring |
| GEOS 1123 Human Geography (ACTS | 3 |  |
| Equivalency = GEOG 1113) |  |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or any higher level math) | 3 |  |
| 1013 Elementary II World Language Course | 3 |  |
| University/State Core Fine Arts, Humanities or U.S. History requirement | 3 |  |
| GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) <br> \& GEOS 1111L Physical Geology Laboratory <br> (ACTS Equivalency $=$ GEOL 1114 Lab) |  |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) |  | 3 |
| 2003 Intermediate I World Language Course (or higher) |  | 3 |
| University/State Core Humanities, U.S. History, or Fine Arts requirement (as needed) |  | 3 |
| General Elective |  | 3 |
| Year Total: | 15 | 16 |
| Second Year |  | Units |
|  | Fall | Spring |
| GEOS 2003 World Regional Geography (ACTS Equivalency = GEOG 2103) | 3 |  |

GEOS 1133 Earth Science (ACTS Equivalency =
GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)
University/State Core U.S. History, Fine Arts, or 3
Humanities Course (as needed)
University/State Core Social Science requirement 3
(non-GEOS course)
General Elective 3
GEOS 3000 Level or Above Elective ${ }^{2} 3$
Advanced Level Elective ${ }^{1} \quad 3$
General Electives 9
$\begin{array}{lll}\text { Year Total: } & 16 & 15\end{array}$

| Third Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| GEOS 3023 Introduction to Cartography ${ }^{2}$ | 3 |  |
| GEOS 3000-level or Above Elective ${ }^{2}$ | 3 |  |
| General Electives | 9 |  |

GEOS 3543 Geospatial Applications and 3
Information Science
GEOS 3000-level or Above Elective ${ }^{2} 3$
Advanced Level Elective ${ }^{1} \quad 3$
General Electives 6
$\begin{array}{lll}\text { Year Total: } & 15 & 15\end{array}$

| Fourth Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| GEOS 3000-level or above Elective ${ }^{2}$ | 3 |  |
| 3000-plus Upper Level ARSC Elective with Departmental Consent ${ }^{2}$ | 3 |  |
| Advanced Level Elective ${ }^{1}$ | 3 |  |
| General Electives | 6 |  |
| GEOS 3000-level or above Elective |  | 3 |
| 3000-plus Upper Level ARSC Elective with Departmental Consent ${ }^{2}$ |  | 3 |
| 3000-plus Upper Level ARSC Elective ${ }^{2}$ |  | 3 |
| 3000-plus Upper Level Elective ${ }^{1}$ |  | 3 |
| General Elective |  | 1 |
| Year Total: | 15 | 13 |


| Total Units in Sequence: | 120 |
| :--- | :--- |

${ }^{1}$ Meets 40-hour advanced credit hour requirement. See College Academic Regulations (p. 273).
2 Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations (p. 273).

## B.A. in Geography with Cartography/Remote Sensing GIS Concentration

Requirements for a Major in Geography: In addition to the University Core requirements (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course
requirements must be met. Bolded courses from the list below may be applied to portions of the University/state minimum core requirements.

| GEOS 1123 | Human Geography (ACTS Equivalency = GEOG <br> 1113 ) | 3 |
| :--- | :--- | :--- |
| GEOS 2003 | World Regional Geography (ACTS Equivalency = <br> GEOG 2103) | 3 |
| GEOS 1113 | Physical Geology (ACTS Equivalency = GEOL | 4 |
| \& GEOS 1111L | 1114 Lecture) <br> and Physical Geology Laboratory (ACTS |  |
| GEOS 1133 | Equivalency = GEOL 1114 Lab) |  | | Earth Science (ACTS Equivalency = GEOL 1124 |
| :--- |$\quad 4$

Six hours in a single world language at the 1013 Elementary II level 6 or higher. ${ }^{1}$

| GEOS 3023 | Introduction to Cartography | 3 |
| :--- | :--- | :--- |
| GEOS 3543 | Geospatial Applications and Information Science | 3 |

In addition, students must complete a minimum of 15 hours of GEOS 15 at the 3000-level or above, classes must include one technical, two regional and two topical courses.

Total Hours
${ }^{1}$ World language courses taken are dependent on placement level in sequence.

Students who expect to enter graduate school are encouraged to register for GEOS 410 V their senior year. Electives in closely related fields are considered a part of the program and, upon prior approval of the department, six hours may be counted toward the major. Those planning to teach in secondary schools should note that they can both earn their degree in geography and qualify for a teaching certificate; they should consult with the department as early as possible.

Requirements for a Major in Geography with Cartography/Remote Sensing Concentration:This program gives students an opportunity to develop expertise in (1) cartography, map design and computer-assisted map production, (2) remote sensing and image interpretation, including photographic systems, sensor systems, and digital image processing, and (3) geographic information systems, including data sources, analytical techniques, and hardware/software systems.

To complete the concentration, a student is required to fulfill certain course requirements.

## Required Courses

| GEOS 3023 | Introduction to Cartography | 3 |
| :--- | :--- | :--- |
| GEOS 3213 | Principles of Remote Sensing | 3 |
| GEOS/ANTH | Geospatial Applications and Information Science | 3 |
| 3543 |  |  |

## Elective Courses

Select three of the following: 9
GEOS 4523 Cartographic Design and Production
GEOS/ANTH Introduction to Raster GIS
4553
GEOS/ANTH Enterprise and Multiuser GIS
4583

| $\begin{aligned} & \text { GEOS/ANTH } \\ & 4593 \end{aligned}$ | Introduction to Global Positioning Systems and Global Navigation Satellite Systems |
| :---: | :---: |
| STAT 3003 | Statistical Methods (or other approved statistics course) |
| CVEG 2053 | Surveying Systems (or other approved surveying course) |
| Total Hours |  |

Writing Requirement: The college writing requirement is to be met by completion of a term paper deemed satisfactory by the student's adviser and instructor of an upper-level geoscience course. The college writing requirement may also be met by the completion of an honors thesis.

Requirements for a Minor in Geography: 15 credit hours in geography to include GEOS 1123 Human Geography and GEOS 2003 World Regional Geography or honors equivalents, with at least six credit hours numbered at the 3000 -level or above that includes any combination of physical, climate, regional, and/or geographic information science (GIScience) courses.

Requirements for Departmental Honors in Geography: Admission to the Departmental Honors Program in Geography is open to geography majors with a minimum grade-point average of 3.5 in all their work. All honors candidates must take 12 hours, which may include 6 hours of thesis, in Honors Studies. During the fall semester of either the junior or senior year the candidate will enroll in GEOS 399VH (no more than three hours of credit), an undergraduate seminar in geographical philosophy and methodology. During the senior year the honors candidate will complete the program by writing a senior honors paper under GEOS 399VH (no more than three hours of credit). Successful completion of the requirements will be recognized by the award of the distinction "Geography Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Courses

GEOS 1111L. Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab). 1 Hour.
Laboratory exercises concerning the identification of rocks and minerals, use of aerial photographs and topographic maps, and several field trips. Pre- or Corequisite: GEOS 1113. (Typically offered: Fall, Spring and Summer)

GEOS 1111M. Honors Physical Geology Laboratory. 1 Hour.
Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOS 1113H. (Typically offered: Fall) This course is equivalent to GEOS 1111L.

GEOS 1113. Physical Geology (ACTS Equivalency = GEOL 1114 Lecture). 3 Hours.
Survey of geological processes and products, and their relationships to landforms, natural resources, living environments and human beings. Corequisite: GEOS 1111L. (Typically offered: Fall, Spring and Summer)

## GEOS 1113H. Honors Physical Geology. 3 Hours.

Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOS 1111M. (Typically offered: Irregular)
This course is equivalent to GEOS 1113.

GEOS 1123. Human Geography (ACTS Equivalency = GEOG 1113). 3 Hours.
Basic course in human geography stressing the interrelationships between the natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities. (Typically offered: Fall and Spring)

## GEOS 1123H. Honors Human Geography. 3 Hours.

Basic course in human geography stressing the interrelationships between the natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring) This course is equivalent to GEOS 1123.
GEOS 1131L. Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab). 1 Hour.
Laboratory exercises concerning human interactions with the physical environment including the study of earthquakes, volcanoes, flooding, erosion, mass wasting, water supply and contamination, and waste disposal. (Typically offered: Fall and Spring)
GEOS 1133. Earth Science (ACTS Equivalency = GEOL 1124 Lecture). 3 Hours. The application of earth science principles and knowledge of problems created by human occupancy and exploitation of the physical environment. (Typically offered: Fall and Spring)
GEOS 1154. Introduction to Geology for Science Majors. 4 Hours.
Survey of geological processes and materials and their relationships to landforms, natural resources, environments, and human beings. Students will understand the principles of physical geology, Earth's internal structure, plate tectonics, and geologic time. Students may not receive degree credit for both GEOS 1113/GEOS 1111L and GEOS 1154. Corequisite: Lab component. Prerequisite: Freshman or sophomore standing, or by instructor consent. (Typically offered: Fall)

GEOS 2003. World Regional Geography (ACTS Equivalency = GEOG 2103). 3 Hours.
Survey of problems, development potential, and physical and human resources of the developing and developed world. (Typically offered: Fall and Spring)

## GEOS 2003H. Honors World Regional Geography. 3 Hours.

Survey of problems, development potential, and physical and human resources of the developing and developed world. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to GEOS 2003.

## GEOS 2313. Mineralogy. 3 Hours.

General principles of mineralogy, study and identification of common minerals, igneous \& metamorphic rocks using hand samples. Prerequisite: (GEOS 1113 or GEOS 1154) and CHEM 1103. Corequisite: Lab component. (Typically offered: Fall)

## GEOS 2813. Digital Earth. 3 Hours.

This course introduces the fundamental concepts and practical geospatial techniques of the digital earth initiative. Students will learn how digital geographical information is produced (also referred to as geospatial data) and utilized in a variety of economic, environmental, and scientific applications. The class will concentrate on how digital geospatial data are produced, integrated and applied in daily life and will review a variety of environmental and socioeconomic applications. (Typically offered: Fall)

## GEOS 2813H. Honors Digital Earth. 3 Hours.

This course introduces the fundamental concepts and practical geospatial techniques of the digital earth initiative. Students will learn how digital geographical information is produced (also referred to as geospatial data) and utilized in a variety of economic, environmental, and scientific applications. The class will concentrate on how digital geospatial data are produced, integrated and applied in daily life and will review a variety of environmental and socioeconomic applications. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to GEOS 2813.

GEOS 3013. Foundations of Geospatial Data Analysis. 3 Hours.
Basic mathematical tools applied in geospatial technology, including trigonometry in mapping, linear algebra in remote sensing, optimization in spatial decision support, and graph theory in routing. Course develops the framework for spatial data analysis and decision support. Students may receive credit for the course through testing. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

## GEOS 3023. Introduction to Cartography. 3 Hours.

Students learn basic principles of map design, cartographic theory and field surveying to produce a variety of computer-generated maps. An introductory course designed for students in a variety of different disciplines using AutoCad software and various new technologies. Field trips may be required. (Typically offered: Fall)

## GEOS 3043. Sustaining Earth. 3 Hours.

Theory and growth of conservation and sustainability, the wise use of the major natural resources of the United States. This course meets the requirement in conservation and sustainability for teachers. Prerequisite: Junior standing. (Typically offered: Fall)

## GEOS 3043H. Honors Sustaining Earth. 3 Hours.

Theory and growth of conservation and the wise use of the major natural resources of the United States. This course meets the requirement in conservation for teachers. Prerequisite: Junior standing. (Typically offered: Fall)
This course is equivalent to GEOS 3043.
GEOS 3063. Geology of Arkansas. 3 Hours.
A survey of the distribution, genesis, and age of the rocks, fossils, structures, landforms and geological processes of Arkansas. Equivalent to two hours of lecture per week. Field trips required. Prerequisite: (GEOS 1113 or GEOS 1113H or GEOS 1154). (Typically offered: Spring)
GEOS 3103. Geospatial Technologies Computational Toolkit. 3 Hours. Basic computational tools and processes applied in geospatial software, related computer hardware components, systems and applications software, and spatial database fundamentals. Python, including SciPy and NumPy, geospatial implementations will be emphasized. No programming experience is required. Students may receive credit for the course through testing. Prerequisite:
GEOS 3543. (Typically offered: Fall and Spring)
GEOS 3213. Principles of Remote Sensing. 3 Hours.
Fundamental concepts of remote sensing of the environment. Optical, infrared, microwave, LIDAR, and in situ sensor systems are introduced. Remote sensing of vegetation, water, urban landscapes, soils, minerals, and geomorphology is discussed. The course includes laboratory exercises in GIS software and field spectroscopy. (Typically offered: Fall)

## GEOS 3333. Oceanography. 3 Hours.

The sea, its landforms; its winds and currents as related to the atmosphere, world climates, and world trade; its basin as avenues for continental drift; its waters as habitat for plant and animal life; its marine and submarine resources as presently and potentially useful to man. Offered as physical science. Prerequisite: Junior standing. (Typically offered: Fall)
GEOS 3413. Sedimentary Geology. 3 Hours.
An introductory study of sedimentary rocks from the standpoint of classification, field and laboratory description, genesis, and preservation. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOS 2313. (Typically offered: Spring)
GEOS 3514. Structural Geology. 4 Hours.
Survey of deformational features and their geological significance in the crust of the earth. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: GEOS 1113 or GEOS 1154. (Typically offered: Spring)

GEOS 3543. Geospatial Applications and Information Science. 3 Hours.
An introduction to the methods and theory underlying the full range of geographic information science and collateral areas - including GNSS, remote sensing, cadastral, spatial demographics and others. (Typically offered: Fall and Spring) This course is cross-listed with ANTH 3543.

GEOS 3553. Spatial Analysis Using ArcGIS. 3 Hours.
Applications of analysis of spatial data using ArcGIS tools in map design, on-line mapping, creating geodatabases, accessing geospatial data, geo-processing, digitizing, geocoding, spatial analysis including basic spatial statistics, analysis of spatial distributions and patterning and 3D application using ArcGIS 3D Analyst. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

## GEOS 3563. Geospatial Data Mining. 3 Hours.

Basic tools for analyzing, summarizing and visualizing geospatial data. Exploratory data and spatial data analysis, probability distributions and application, single and multivariate analysis and hypothesis testing, and spatial smoothing and interpolation. Emphasis will be on problem solving in geospatial settings using the $R$ statistical language. Prerequisite: GEOS 3543 and (GEOS 3013 or MATH 2554 or MATH 2043 or DASC 2594) and (GEOS 3103 or DASC 1104 or DASC 2113). (Typically offered: Fall and Spring)

## GEOS 3593. Introduction to Geodatabases. 3 Hours.

Fundamental concepts and applications of geospatial databases. Schema development and spatial data models for geodata. Spatial and attribute query and optimization, properties and structures of relational and object-oriented geodatabases. Spatial extensions of SQL, spatial indexing, measurement, and geometry. Prerequisite: GEOS 3543 and (GEOS 3013 or MATH 2554 or MATH 2043 or DASC 2594) and (GEOS 3103 or DASC 1104 or DASC 2113). (Typically offered: Fall and Spring)

GEOS 360V. Undergraduate Special Problems. 1-6 Hour.
Library, laboratory, or field research in different phases of geology. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

GEOS 3733. Geospatial Data Science in Public Health. 3 Hours.
Introduction to geospatial data science, including geographic information systems (GIS) and related technologies, with an emphasis on their practical applications in the fields of public health, global health, healthcare analytics, healthcare administration, and other health-related fields. (Typically offered: Fall)

## GEOS 3873. Geological Data Analysis. 3 Hours.

Quantitative methods and techniques for analysis and interpretation of geological data. Corequisite: Lab component. Pre- or corequisite: MATH 2564. (Typically offered: Spring)
GEOS 3901. Junior Honors Course. 1 Hour.
Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)

## GEOS 3911. Junior Honors Course. 1 Hour.

Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)
GEOS 399VH. Honors Course. 1-6 Hour.
Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## GEOS 4033. Hydrogeology. 3 Hours.

Occurrence, movement, and interaction of water with geologic and cultural features. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 2043 or MATH 2554, and GEOS 3514. (Typically offered: Spring)

## GEOS 4043. Geography of the Middle East. 3 Hours.

Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class. Prerequisite: Junior standing. (Typically offered: Fall)

## GEOS 4043H. Honors Geography of the Middle East. 3 Hours.

Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class.
Prerequisite: Junior standing. (Typically offered: Irregular)
This course is equivalent to GEOS 4043.
GEOS 4053. Geomorphology. 3 Hours.
A quantitative, mechanistic overview of surface processes and landscape evolution. Lecture 2 hours, laboratory 3 hours per week. One to two field trips on weekends (2 day total) are required during the semester. Corequisite: Lab component.
Prerequisite: GEOS 3873 or instructor consent. (Typically offered: Spring)

## GEOS 4063. Principles of Geochemistry. 3 Hours.

Introduction to fundamental principles of geochemistry from historic development to modern concepts. Prerequisite: CHEM 1121L, CHEM 1123 and GEOS 2313. (Typically offered: Fall)

## GEOS 4073. Urban Geography. 3 Hours.

Areal patterns of modern urban regions and the focus shaping these patterns. Emphasis is placed on American urban areas and their evolution and functional areas. Field work. Prerequisite: Junior standing. (Typically offered: Spring)
GEOS 4083. Economic Geology. 3 Hours.
Introduction to mineral deposits used as economic resources. Covers basic geology and geochemistry of mineral deposit formations and the formation of major classes of deposits. Examines the relationship between the distribution of ores, oil, gas, coal, and Plate Tectonics. Explores environmental issues associated with the extraction of earth resources. Prerequisite: GEOS 2313. (Typically offered: Irregular)

## GEOS 4093. History and Philosophy of Geography. 3 Hours.

This course familiarizes students with the history of geography, the contributions of geographers to scientific thought and theory, and research techniques that are used in geography. Emphasis is given to the integration of statistical and spatial analysis, and their applications in field research. The course includes short fieldbased projects in and around Northwest Arkansas. (Typically offered: Spring Even Years)

GEOS 410V. Special Problems in Geosciences. 1-6 Hour.
Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

## GEOS 410VH. Honors Special Problems in Geosciences. 1-6 Hour.

Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
This course is equivalent to GEOS 410 V .

## GEOS 4113. Global Change. 3 Hours.

Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. (Typically offered: Spring)

## GEOS 4113H. Honors Global Change. 3 Hours.

Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. Prerequisite: Honors candidacy. (Typically offered: Spring)
This course is equivalent to GEOS 4113.
GEOS 4153. Karst Hydrogeology. 3 Hours.
Assessment of ground water resources in carbonate rock terrains; relation of ground water and surface water hydrology to karst; quantification of extreme variability in karst environments; data collection rationale. Field trips required. Prerequisite: GEOS 4033. (Typically offered: Irregular)

## GEOS 4223. Stratigraphy and Sedimentation. 3 Hours.

Introductory investigation of stratigraphic and sedimentologic factors important to the study of sedimentary rocks. Lecture 2 hours, laboratory 3 hours per week. A required weekend, two-day field trip will be conducted during the semester. Corequisite: Lab component. Prerequisite: GEOS 3413. (Typically offered: Fall)

GEOS 4233. Geography of Religion \& Sacrality. 3 Hours.
Explores the spatial nature of the World's major faiths and religious institutions, focusing on the distribution and origins of these religions. Examines the religious beliefs, rituals, architecture, demographics, and art in different societies, cultures, and countries. Considers the tenets and practices of what is sacred and/or spiritual, held in common by a group or community. Prerequisite: Junior or senior standing. (Typically offered: Irregular)

GEOS 4243. Political Geography. 3 Hours.
Contemporary world political problems in their geographic context. Development of the principles of political geography with emphasis upon the problems of Eastern Europe, Africa, and Southeast Asia. Prerequisite: Junior standing. (Typically offered: Fall Odd Years)

## GEOS 4253. Petroleum Geology. 3 Hours.

Distribution and origin of petroleum. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Geology major and senior standing. (Typically offered: Fall)

GEOS 4263. Geospatial Data Science - Sources and Characteristics. 3 Hours.
Covers the wide range of geospatial data sources and characteristics with emphasis on data science applications through hands-on experience recognizing the unique requirements of major sources. Techniques for the integration of disparate, heterogeneous data sets will be covered. Corequisite: GEOS 3563. Prerequisite: GEOS 3543. (Typically offered: Fall)

## GEOS 430V. Internship in Physical Geography. 3-6 Hour.

Supervised experience in municipal, county, state or private natural resource management agency, or any other such organization approved by instructor. (Typically offered: Fall, Spring and Summer)

GEOS 4333. Igneous and Metamorphic Petrology. 3 Hours.
Elementary to advanced study of the origin and evolution of igneous and metamorphic rocks in a variety of plate tectonics settings. Lecture 2 hours, Laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOS 2313. (Typically offered: Spring)

## GEOS 4353. Meteorology. 3 Hours.

Examination of the atmospheric processes that result in multifarious weather systems. Offered as physical science. Prerequisite: Junior standing. (Typically offered: Fall)

GEOS 4363. Climatology. 3 Hours.
Fundamentals of topical climatology followed by a study of regional climatology. Offered as physical science. Prerequisite: GEOS 1133 or GEOS 4353. (Typically offered: Spring)

GEOS 437V. Geology Field Trip. 1-2 Hour.
Camping field trip to areas of geologic interest, usually conducted during Spring Break. (Typically offered: Spring) May be repeated for up to 4 hours of degree credit.

GEOS 4383. Hazard \& Disaster Assessment, Mitigation, Risk \& Policy. 3 Hours.
Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior or senior standing. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

## GEOS 4383H. Honors Hazard \& Disaster Assessment, Mitigation, Risk \& Policy. 3 Hours.

Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is equivalent to GEOS 4383.

## GEOS 4393. American Public Lands \& Policy. 3 Hours.

The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Junior or senior standing. (Typically offered: Irregular)

## GEOS 4393H. Honors American Public Lands \& Policy. 3 Hours.

The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Honors standing and Junior or senior standing. (Typically offered: Irregular)
This course is equivalent to GEOS 4393.
GEOS 4433. Geophysics. 3 Hours.
Derivation from physical principles, of the geophysical methods for mapping the Earth. Computational methods of converting gravity, magnetic, radiometric, electrical, and seismic data into geologic information. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MATH 2564 and PHYS 2033 and PHYS 2031L and GEOS 3514. (Typically offered: Irregular)

## GEOS 4473. Applied Climatology. 3 Hours.

Applied climatology involves the use of climatic data to solve a variety of social, economic and environmental problems, such as for clients in agriculture, water and energy management. The basic purpose of applied climatology is to help society, at all scales and levels, to achieve a better adjustment to the climatic environment. (Typically offered: Fall)

## GEOS 4493. Geography of Political Violence. 3 Hours.

This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextually informed understanding of the international system and how it is shaped by civil war. Prerequisite: Junior or senior standing. (Typically offered: Fall Even Years) This course is cross-listed with INST 4103H.

## GEOS 4493H. Honors Geography of Political Violence. 3 Hours.

This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextually informed understanding of the international system and how it is shaped by civil war. Prerequisite: Junior or senior standing and honors standing. (Typically offered: Fall Even Years)
This course is cross-listed with GEOS 4493, INST 4103H.

GEOS 4523. Cartographic Design and Production. 3 Hours.
This course addresses advanced cartographic concepts (i.e. visual hierarchy, aesthetics, image cognition) and production techniques as they relate to computerassisted mapping. Students produce a variety of maps using Adobe Illustrator (CS $4-6)$ software to build a map portfolio. Field trips may be required. Prerequisite: GEOS 3023. (Typically offered: Spring)

## GEOS 4533. Introduction to Petroleum Geophysics. 3 Hours.

Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Prerequisite: MATH 2564, (PHYS 2033 or PHYS 2074), and GEOS 3514 or instructor consent. (Typically offered: Fall)

## GEOS 4533H. Honors Introduction to Petroleum Geophysics. 3 Hours.

Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Prerequisite: MATH 2564, (PHYS 2033 or PHYS 2074), and GEOS 3514 or instructor consent. (Typically offered: Fall)
This course is equivalent to GEOS 4533.
GEOS 4553. Introduction to Raster GIS. 3 Hours.
Theory, data structure, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. Prerequisite: GEOS 3543 or ANTH 3543. (Typically offered: Fall) This course is cross-listed with ANTH 4553.

## GEOS 4563. Geology of Our National Parks. 3 Hours.

This course examines the underlying geology responsible for selected parks, and explores the interplay of geology, biology, climate, topography, and humans to evaluate the value of the parks, and to anticipate the problems they will face in the near and long-term. Prerequisite: GEOS 1113. (Typically offered: Fall)

## GEOS 4583. Enterprise and Multiuser GIS. 3 Hours.

GIS practice that's typical of collaborative team-based geospatial organizations. Solve real-world problems through end-to-end GIS design and implementation using ArcGIS Enterprise, extensive federal, state, and local repositories, and high quality software documentation. Includes relevant training in geospatial provenance and metadata, and in enterprise and multiuser GIS administration. (Typically offered: Spring)

GEOS 4593. Introduction to Global Positioning Systems and Global Navigation Satellite Systems. 3 Hours.
Fundamentals of navigation, mapping, and high-precision positioning using the Navstar Global Positioning System. Topics include datum definition and transformation, map projections, autonomous and differential positioning using both code and carrier processing, and analysis of errors. Prerequisite: GEOS 3543 or GEOS 5543. (Typically offered: Fall)

## GEOS 4653. GIS Analysis and Modeling. 3 Hours.

Unlike conventional GIS courses that focus on studying "where", this course will teach students to address beyond "where" using various GIS analysis and modeling techniques to explore "why" and "how". The course will provide theoretical and methodological reviews of the principles of cartographic modeling and multi-criteria decision-making. (Typically offered: Spring)

GEOS 4663. Low-Temperature Geochemistry of Natural Waters. 3 Hours.
Covers the low-temperature geochemistry of waters and their associated minerals at Earth's surface. Examines the controls on the chemical composition of natural waters and the minerals precipitated from them. Topics covered will include water-rock interactions, pH , redox, the carbonate-water system, clay minerals and exchange, heavy metals, and a brief introduction to stable isotopes and geomicrobiology. Prerequisite: CHEM 1121L, CHEM 1123, GEOS 1113, and GEOS 1111L. (Typically offered: Fall)

## GEOS 4686. Geology Field Camp. 6 Hours.

A professional course taught off campus emphasizing occurrence, description, mapping, and interpretation of major rock types. May not be taken for graduate credit. Prerequisite: GEOS 3413 and GEOS 3514. (Typically offered: Summer)

## GEOS 4693. Environmental Justice. 3 Hours.

This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. (Typically offered: Spring)

## GEOS 4783. Geography of Europe. 3 Hours.

Geographic regions of the area with emphasis on their present development.
Prerequisite: Junior standing. (Typically offered: Irregular)

## GEOS 4793. Geospatial Unmanned Aircraft Systems. 3 Hours.

Geospatial unmanned aircraft systems (UAS) are becoming key technologies in a number of disciplines. This course will introduce safe and legal operation of UAS in aerial photography, multispectral, thermal and LIDAR applications, geodetic control, photogrammetric and computer vision processing, and the creation of accurate 2D and 3D digital information products. Pre- or Corequisite: GEOS 3213 or GEOS 4593 or equivalent. (Typically offered: Fall)
GEOS 4813. Geography of Eurasia. 3 Hours.
Introduction to the culture, society, and politics of Eurasia using the organizing concept of empire from the moment of its consolidation in 1945 to its dissolution in 1991. Focuses on places that have emerged from this order and emphasizes experience and memory at each of these different times and places. Prerequisite: Junior standing. (Typically offered: Spring Even Years)
GEOS 4924. Earth System History (ACTS Equivalency = PHSC 1104). 4 Hours. Physical and biological events that form the history of the earth from its formation to the beginning of the historical era. Corequisite: Lab component. Prerequisite: GEOS 3413 and (GEOS 4223 or GEOS 4333) and GEOS 3514. (Typically offered: Spring)

GEOS 4933. Ancient Forest Science and Sustainability. 3 Hours.
Ancient forests preserve beautiful habitat with high ecological integrity. This course will examine the development, spatial distribution, and ongoing destruction of ancient forests worldwide, and how science can contribute to the understanding and sustainable management of these valuable resources. (Typically offered: Spring)

## GEOS 4972H. Senior Honors Course I. 2 Hours.

Special honors research in geology. Two hours of credit each semester.
Prerequisite: Junior honors. (Typically offered: Fall, Spring and Summer)
GEOS 4982H. Senior Honors Course II. 2 Hours.
Special honors research in geology. Two hours of credit each semester.
Prerequisite: Junior honors. (Typically offered: Fall, Spring and Summer)
GEOS 4993. Dynamics of Sediment Transport. 3 Hours.
This is a course focused on how fluids transport sediment and construct stratigraphy. Lectures will develop environmental fluid mechanics and sediment transport from first principles so they can be used to evaluate sedimentological and stratigraphic problems. This framework will be applied to a sedimentological problem using original data and analysis. Pre- or Corequisite: GEOS 4223. Prerequisite: GEOS 3413. (Typically offered: Fall Odd Years)

## Geology (GEOL)

The Department of Geosciences offers the Bachelor of Science degree in geology and the Bachelor of Science degree in earth science (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/earthsciences/). It is emphasized that students wishing to become practicing professional geologists should hold the Bachelor of Science degree in geology at a minimum. It is further
recognized that practicing professional geologists typically hold a Master of Science degree. The education of students pursuing the Bachelor of Science in earth science degree should reflect general education in the liberal arts with emphasis in geology.

The goal of the program leading to the Bachelor of Science degree in geology is to provide students with a broad spectrum of the various subdisciplines of geology, while at the same time honoring an emphasis in the traditional areas of mineralogy, igneous, metamorphic and sedimentary petrology, structural geology and stratigraphic principles. This curriculum will prepare students to enter graduate programs without deficiencies at the University of Arkansas or other established programs.

Along with the normal degree program, the department offers a B.S. in geology with a concentration in geophysics.

For requirements for the M.S. degree in geology, see the Graduate School Catalog.

## B.S. in Geology

Requirements for a Major in Geology leading to the B.S. Degree: In addition to the state minimum core (p. 81) and the Fulbright College of Arts and Sciences Graduation Requirements (p.273), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the University Core requirements.

| State Minimum Core |  | 35 |
| :---: | :---: | :---: |
| CHEM 1103 <br> \& CHEM 1101L | University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) <br> and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) | 4 |
| CHEM 1123 <br> \& CHEM 1121L | University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) | 4 |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| Select one physics sequence from the following: |  | 8 |
| PHYS 2013 \& PHYS 2011 | ```College Physics I (ACTS Equivalency = PHYS L2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` |  |
| PHYS 2033 <br> \& PHYS 2031 | ```College Physics II (ACTS Equivalency = PHYS L2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)``` |  |
| or |  |  |
| PHYS 2054 | University Physics I (ACTS Equivalency = PHYS 2034) |  |
| PHYS 2074 | University Physics II (ACTS Equivalency = PHYS 2044 Lecture) |  |
| World language up to the Elementary II level |  | 6 |
| A science elective 3000-level or higher as approved by advisor |  | 3 |
| A minimum of 45 credit hours of geology courses to include: |  | 45 |
| \& GEOS 1111L1114 Lecture) <br> and Physical Geology Laboratory (ACTS <br> Equivalency = GEOL 1114 Lab) |  |  |
| GEOS 2313 | Mineralogy |  |
| GEOS 3413 | Sedimentary Geology |  |


| GEOS 3514 | Structural Geology |
| :--- | :--- |
| GEOS 3873 | Geological Data Analysis |
| GEOS 4053 | Geomorphology |
| GEOS 4063 | Principles of Geochemistry |
| or GEOS 4433 eophysics |  |
| GEOS 4223 | Stratigraphy and Sedimentation |
| or GEOS 33 |  |
| GEOS 4686 | Geology Field Camp |
| GEOS 4924 | Earth System History (ACTS Equivalency = PHSC |
|  | 1104) |

Nine credit hours of geology courses chosen from GEOS electives 3000-level or higher

| General Electives | $7-18$ |
| :--- | :--- |

Total Hours
Writing Requirement: A scholarly writing assignment will be included in all geoscience courses numbered 2000 and above. Those papers submitted in geoscience courses 3000 and above will fulfill the Fulbright College writing requirement. The college writing requirement may also be met by the completion of an honors thesis.

## Geology B.S. <br> Nine-Semester Degree Program

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic advisor.

This program requires a summer field camp after the junior year.


| General Electives |  | 1 |  | GEOS electives | 000-level or higher |  | 3 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year Total: | 15 | 15 |  | Year Total: |  | 15 | 7 |  |
| Second Year |  |  | Units | Total Units in | uence: |  |  | 120 |
|  | Fall | Spring | Summer |  |  |  |  |  |
| GEOS 2313 Mineralogy | 3 |  |  | Requireme | ts for B.S. in |  |  |  |
| Select one of the following: | 4 |  |  | Geoscien | Concentr |  |  |  |
| PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) or PHYS 2013/2011L College Physics I (ACTS Equivalency = PHYS 2014 Lecture) |  |  |  | The following cr Completion Prog Fulbright Colleg scholarly writing or higher, or by | it hour requirement <br> am Policy for additio Writing Requiremen ssignments in any mpletion of an hon |  | gree <br> dition, the mpleting d 3000-le |  |
| Social Sciences State Minimum Core | 3 |  |  | State minimum | (p. 81) requirem | 兂 |  |  |
| Fine Arts State Minimum Core | 3 |  |  | based on placem | nt and previous cou |  | ce all co |  |
| World language at the Elementary I level | 3 |  |  | requirements ar consultation with | met, students may heir academic advis |  | electives |  |
| GEOS 3413 Sedimentary Geology |  | 3 |  | State Minimum |  |  |  | 5 |
| Select one of the following: |  | 4 |  |  |  |  |  |  |
| PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture) |  |  |  | CHEM 1103 <br> \& CHEM 1101L | University Chemistry CHEM 1414 Lecture) and University Cher Equivalency = CHE | Equi <br> bora <br> ab) |  | 4 |
| Physics II (ACTS Equivalency = PHYS 2024 Lecture) |  |  |  | CHEM 1123 <br> \& CHEM 1121L | University Chemis CHEM 1424 Lectu and University Ch |  |  | 4 |
| GEOS 3873 Geological Data Analysis |  | 3 |  |  | $\text { Equivalency }=\mathrm{CH}$ |  |  |  |
| Social Sciences State Minimum Core |  | 3 |  | PHYS 2054 | University Physics | qui | PHYS | 4 |
| World language at the Elementary II |  | 3 |  |  | 2034) |  |  |  |
| level <br> Year Total: | 16 | 16 |  | PHYS 2074 | University Physics 2044 Lecture) |  | = PHYS | 4 |
|  |  |  |  | PHYS 2094 | University Physics |  |  | 4 |
| Third Year |  |  | Units | MATH 2554 | Calculus I (ACTS Eq | = M | 405) | 4 |
|  | Fall | Spring | Summer | MATH 2564 | Calculus II (ACTS | $y=$ | 2505) | 4 |
| GEOS 4223 Stratigraphy and | 3 |  |  | MATH 2574 | Calculus III (ACTS | cy $=$ | 2603) | 4 |
| Sedimentation or GEOS 3313 |  |  |  | MATH 2584 | Elementary Differen | ions |  | 4 |
| GEOS elective 3000-level or higher | 3 |  |  | 46 credit hours from the followi | geosciences (GEO |  | courses | 45 |
| Social Sciences State Minimum Core | 3 |  |  | GEOS 1113 | Physical Geology | ivale | GEOL |  |
| General Electives | 6 |  |  | \& GEOS 111 | 1114 Lecture) |  |  |  |
| GEOS 3514 Structural Geology |  | 4 |  |  | and Physical Geolo | tory |  |  |
| GEOS 4053 Geomorphology |  | 3 |  |  | Equivalency = GEO |  |  |  |
| Humanities State Minimum Core |  | 3 |  | GEOS 2313 | Mineralogy |  |  |  |
| General Electives |  | 5 |  | GEOS 3413 | Sedimentary Geology |  |  |  |
| GEOS 4686 Geology Field Camp |  |  | 6 | GEOS 3514 | Structural Geology |  |  |  |
| Year Total: | 15 | 15 | 6 | GEOS 4053 | Geomorphology |  |  |  |
|  |  |  |  | GEOS 4223 | Stratigraphy and Se |  |  |  |
| Fourth Year |  |  | Units | GEOS 4433 | Geophysics |  |  |  |
|  | Fall | Spring | Summer | GEOS 4924 | Earth System History 1104) | Equiv | $y=\text { PHSC }$ |  |
| GEOS 4063 Principles of Geochemistry or GEOS 4433 Geophysics | 3 |  |  | GEOS 4686 | Geology Field Camp |  |  |  |
| GEOS electives 3000-level or higher | 3 |  |  | PHYS 3113 | Analytical Mechanic |  |  |  |
| Science elective 3000-level or higher | 3 |  |  | PHYS 3453 | Electromagnetic Th |  |  |  |
| General Electives | 6 |  |  | PHYS 3613 | Modern Physics |  |  |  |
| GEOS 4924 Earth System History |  | 4 |  | PHYS 4073 | Introduction to Quan | hanic |  |  |
| (ACTS Equivalency $=$ PHSC 1104) |  |  |  | PHYS 4991 | Physics Senior Sem |  |  |  |

General Electives $\quad 4$

## Total Hours

Writing Requirement: A scholarly writing assignment will be included in all geoscience courses numbered 2000 and above. Those papers submitted in geoscience courses 3000 and above will fulfill the Fulbright College writing requirement. The college writing requirement may also be met by the completion of an honors thesis.

## Eight-Semester Degree Plan for a Bachelor of Science in Geology with a Concentration in Geophysics

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 4 |  |  |
| PHYS 2054 University Physics I (ACTS Equivalency $=$ PHYS 2034) (Satisfies General Education Outcome 3.4) ${ }^{1}$ | 4 |  |  |
| CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) <br> \& CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) | 4 |  |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ |  | 3 |  |
| PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture) |  | 4 |  |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |  |
| GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) \& GEOS 1111L Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab) |  | 4 |  |
| Year Total: | 15 | 15 |  |
| Second Year |  |  |  |
|  | Fall | Spring | Summer |
| PHYS 2094 University Physics III | 4 |  |  |
| MATH 2584 Elementary Differential Equations | 4 |  |  |


| CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 | 4 |
| :---: | :---: |
| Lecture) |  |
| \& CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency $=$ CHEM 1424 Lab) |  |
| GEOS 2313 Mineralogy | 3 |
| PHYS 3613 Modern Physics |  |
| MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) |  |
| GEOS 3413 Sedimentary Geology |  |
| State Minimum Core-Fine Arts (Satisfies General Education Outcome 3.1) ${ }^{1}$ |  |
| State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2) ${ }^{1}$ |  |
| Year Total: | 15 |



|  | Fall | Spring | Summer |
| :---: | :---: | :---: | :---: |
| PHYS 4073 Introduction to Quantum Mechanics | 3 |  |  |
| GEOS 4433 Geophysics | 3 |  |  |
| State Minimum Core-Social Science | 3 |  |  |
| General Electives | 6 |  |  |
| PHYS 3453 Electromagnetic Theory I |  | 3 |  |
| PHYS 4991 Physics Senior Seminar |  | 1 |  |
| GEOS 4924 Earth System History (ACTS Equivalency = PHSC 1104) (Satisfies General Education Outcomes 1.2 and 6.1) ${ }^{1}$ |  | 4 |  |
| Year Total: | 15 | 8 |  |

1 Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb
 \%7C1000\&sdata=ZHBCul1Vytd \%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu

 \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks teachereducation/). \%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## Minor in Geology

Requirements for a Minor in Geology: A minor in geology shall be awarded upon completion of the following course work:

| GEOS 1113 <br> \& GEOS 1111L | Physical Geology (ACTS Equivalency = GEOL <br> and Physical Geology Laboratory (ACTS <br> Equivalency = GEOL 1114 Lab) | 4 |
| :--- | :--- | :---: |
|  | Earth Science (ACTS Equivalency = GEOL 1124 | 4 |
| GEOS 1133 |  |  |
| \& GEOS 1131L | Lecture) <br> and Earth Science Laboratory (ACTS Equivalency <br> = GEOL 1124 Lab) |  |
| GEOS 2313 | Mineralogy | 3 |
| Two GEOS Courses at the 3000-level | 6 |  |
| One GEOS Course at the 4000-level | 3 |  |

## Total Hours

20Students are advised to consult with a geology faculty member to develop the course work program that best complements their major area of study.

Requirements for Departmental Honors in Geology: The Departmental Honors Program in Geology provides upper-division undergraduate students with an opportunity to formally participate in geologic research activities. Honors candidates carry out independent study and research under the guidance of the geology faculty. Outstanding student achievement will be recognized by awarding the distinction "Geology Scholar Cum Laude" at graduation. Higher degree distinctions may be awarded to truly outstanding students based upon the whole of their academic program and quality of honors research.

Honors candidates in geology must do the following:

1. Satisfy departmental and college requirements for a bachelor's degree with honors,
2. Become a candidate no later than the second semester of their junior year,
3. Enroll in six hours of honors research GEOS 3901, GEOS 3911, GEOS 4972 H , GEOS 4982 H ,
4. Take 12 hours in Honors Studies, which may include 6 hours of thesis,
5. Complete junior and senior honors courses GEOS 3901, GEOS 3911, GEOS 4972 H , GEOS 4982 H , and
6. Achieve a cumulative grade-point average of 3.30 in geology courses. 66a80d1\%7C0\%7C0\%7C637509951644018253\%7CUnknown

Students interested in pursuing a minor in STEM Education or Secondary Teacher Licensure in mathematics, biology, chemistry, physics, or computer science at the undergraduate level should consult with a STEM Education faculty adviser, teach@uark.edu. Another option to obtain secondary teacher licensure is to complete the one-year Master of Arts in Teaching (http://catalog.uark.edu/undergraduatecatalog/

## Geosciences (GEOS)

Christopher L. Liner
Chair of the Department
216 Gearhart Hall
479-575-3355
Department of Geosciences Website (http://fulbright.uark.edu/ departments/geosciences/)

The Department of Geosciences offers three majors, two leading to a Bachelor of Science and one leading to a Bachelor of Arts:

- Earth Science (p. 393), B.S.
- Geography (p. 418), B.A.
- Geology (p. 424), B.S.

The department also offers coursework leading to a Geospatial Technologies Certificate.

- Certificate in Geospatial Technologies, the requirements of which are in the tab on this page.


## Requirements for Geospatial Technologies Certificate

The Department of Geosciences also offers an online Geospatial Technologies Certificate through the University of Arkansas Global Campus (http://globalcampus.uark.edu). The certificate is designed for working professionals who wish to develop basic skills in the emerging field of geospatial technologies. Instruction prepares these individuals for employment in the geosciences and collateral disciplines as well as providing a foundational skill set for additional advanced work if desired. The certificate will also benefit students in two-year associate degree programs as well as undergraduates in four-year programs who wish to strengthen their skills.

Requirements for admission: Candidates should posses an associate's degree, two years of college, or equivalent work experience.

Requirements for a Geospatial Technologies Certificate: Students must complete the following 18 credit hours, but it is possible to waive GEOS 3013 and GEOS 3103 (up to 6 credit hours) through successful completion of proficiency exams.

| GEOS 3543 | Geospatial Applications and Information Science | 3 |
| :---: | :---: | :---: |
| or GEOS 3733 | Geospatial Data Science in Public Health |  |
| GEOS 3013 | Foundations of Geospatial Data Analysis | 3 |
| GEOS 3103 | Geospatial Technologies Computational Toolkit | 3 |
| GEOS 3553 | Spatial Analysis Using ArcGIS | 3 |
| GEOS 3563 | Geospatial Data Mining | 3 |
| GEOS 3593 | Introduction to Geodatabases | 3 |
| Total Hours |  | 18 |

## Faculty

Aly, Mohamed H., Ph.D. (Texas A\&M), M.S., B.S. (Zagazig University), Associate Professor, 2013, 2020.
Anderson, Paula, M.S., B.S. (University of Arkansas), Instructor, 2014. Befus, Kevin, Ph.D. (University of Texas at Austin), M.S. (University of Colorado Boulder), B.S. (Wheaton College), Assistant Professor, 2020. Boss, Steve K., Ph.D. (University of North Carolina at Chapel Hill), M.S. (Utah State University), B.S. (Bemidji State University), University Professor, 1996, 2022.
Cheng, Linyin, Ph.D. (University of California, Irvine), M.S. (Clarkson University), B.S. (Sichuan University), Assistant Professor, 2018.
Cothren, Jackson David, Ph.D., M.S. (The Ohio State University), B.S. (United States Air Force Academy), Professor, Leica Geosystems Chair in Geospatial Imaging, 2004, 2020.
Covington, Matthew D., Ph.D. (University of California-Santa Cruz), B.A. (University of Arkansas), Associate Professor, 2012, 2018.
Davidson, Fiona M., Ph.D., M.A. (University of Nebraska-Lincoln), B.A. (Newcastle Upon Tyne Polytechnic), Associate Professor, 1992, 1998. Dumond, Gregory, Ph.D. (University of Massachusetts), M.S. (Texas Tech University), B.S. (University of Texas El Paso), Associate Professor, 2010, 2018.
Feng, Song, Ph.D., M.S. (Chinese Academy of Sciences), B.S. (Yunnan University), Associate Professor, 2013, 2018.
Fernandes, Katia de Avila, Ph.D. (Georgia Institute of Technology), M.S. (Instituto Nacional de Pesquisas Espaciais, Brazil), B.S. (Universidade Federal de Pelotas, Brazil), Assistant Professor, 2019.
Hays, Phillip D., Ph.D., M.S. (Texas A\&M University), B.S. (University of Arkansas), Assistant Professor, 2017.
Holland, Edward C., Ph.D., M.A. (University of Colorado, Boulder), B.A. (Princeton University), Associate Professor, 2016, 2022.
Huang, Xiao, Ph.D. (University of South Carolina), M.S. Georgia Institute of Technology (2016), B.S. (Wuhan University), Assistant Professor, 2020.

Lamb, Andrew P., Ph.D. (Boise State University), M.S. (Florida Institute of Technology), B.S. (University of Dublin, Trinity), Assistant Professor, 2017.

Liner, Christopher L., Ph.D. (Colorado School of Mines), M.S.
(University of Tulsa), B.S. (University of Arkansas), Professor, 2012.
Marshall, Jill A., Ph.D. (University of Oregon), M.S. (San Francisco State University), B.S. (California State University, Hayward), Assistant Professor, 2017.
Paradise, Thomas R., Ph.D. (Arizona State University), M.Sc. (Georgia State University), F.G.A. (Goldsmith Hall Gem-A, London), G.G.
(Gemological Institute of America), B.S. (University of Nevada), University Professor, 2000, 2016.
Potra, Adriana, Ph.D. (Florida International University), M.S., B.S. (University of Babes-Bolyai, Romania), Associate Professor, 2012, 2019.
Sharman, Glenn R., Ph.D. (Stanford University), B.S. (Wheaton College), Associate Professor, 2017.
Shaulis, Barry J., Ph.D., M.S., B.S. (University of Houston), B.B.A.
(University of Georgia), Research Associate, 2016.

Shaw, John B., Ph.D. (University of Texas at Austin), B.A. (Oberlin College), Associate Professor, 2014, 2019.
Stahle, David William, Ph.D. (Arizona State University), M.A. (University of Arkansas), B.A. (University of Arizona), Distinguished Professor, 1982, 2005.

Suarez, Celina A., Ph.D. (University of Kansas), M.S. (Temple
University), B.S. (Trinity University), Associate Professor, 2012, 2018.
Theiss, Hank, Ph.D. (Purdue University), M.S. (Purdue University), B.S. (Virginia Tech), Research Associate Professor, 2020.
Tullis, Jason A., Ph.D., M.S. (University of South Carolina), B.S.
(Brigham Young University), Professor, 2004, 2018.
Turner, Henry L., Ph.D., M.S. (University of Arkansas), B.S. (University of Oregon), Instructor, 2008.
Warn, Seth A., Ph.D. (University of Arkansas), B.S. (Columbia College), Research Assistant Professor, 2019.

## Geosciences Courses

GEOS 1111L. Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab). 1 Hour.
Laboratory exercises concerning the identification of rocks and minerals, use of aerial photographs and topographic maps, and several field trips. Pre- or Corequisite: GEOS 1113. (Typically offered: Fall, Spring and Summer)
GEOS 1111M. Honors Physical Geology Laboratory. 1 Hour.
Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOS 1113H. (Typically offered: Fall) This course is equivalent to GEOS 1111L.

GEOS 1113. Physical Geology (ACTS Equivalency = GEOL 1114 Lecture). 3 Hours.
Survey of geological processes and products, and their relationships to landforms, natural resources, living environments and human beings. Corequisite: GEOS 1111L. (Typically offered: Fall, Spring and Summer)

## GEOS 1113H. Honors Physical Geology. 3 Hours.

Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOS 1111M. (Typically offered: Irregular)
This course is equivalent to GEOS 1113.
GEOS 1123. Human Geography (ACTS Equivalency = GEOG 1113). 3 Hours. Basic course in human geography stressing the interrelationships between the natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities. (Typically offered: Fall and Spring)
GEOS 1123H. Honors Human Geography. 3 Hours.
Basic course in human geography stressing the interrelationships between the natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring) This course is equivalent to GEOS 1123.
GEOS 1131L. Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab). 1 Hour.
Laboratory exercises concerning human interactions with the physical environment including the study of earthquakes, volcanoes, flooding, erosion, mass wasting, water supply and contamination, and waste disposal. (Typically offered: Fall and Spring)

GEOS 1133. Earth Science (ACTS Equivalency = GEOL 1124 Lecture). 3 Hours.
The application of earth science principles and knowledge of problems created by human occupancy and exploitation of the physical environment. (Typically offered: Fall and Spring)

## GEOS 1154. Introduction to Geology for Science Majors. 4 Hours.

Survey of geological processes and materials and their relationships to landforms, natural resources, environments, and human beings. Students will understand the principles of physical geology, Earth's internal structure, plate tectonics, and geologic time. Students may not receive degree credit for both GEOS 1113/GEOS 1111L and GEOS 1154. Corequisite: Lab component. Prerequisite: Freshman or sophomore standing, or by instructor consent. (Typically offered: Fall)
GEOS 2003. World Regional Geography (ACTS Equivalency = GEOG 2103). 3 Hours.
Survey of problems, development potential, and physical and human resources of the developing and developed world. (Typically offered: Fall and Spring)

GEOS 2003H. Honors World Regional Geography. 3 Hours.
Survey of problems, development potential, and physical and human resources of the developing and developed world. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to GEOS 2003.

## GEOS 2313. Mineralogy. 3 Hours.

General principles of mineralogy, study and identification of common minerals, igneous \& metamorphic rocks using hand samples. Prerequisite: (GEOS 1113 or GEOS 1154) and CHEM 1103. Corequisite: Lab component. (Typically offered: Fall)

## GEOS 2813. Digital Earth. 3 Hours.

This course introduces the fundamental concepts and practical geospatial techniques of the digital earth initiative. Students will learn how digital geographical information is produced (also referred to as geospatial data) and utilized in a variety of economic, environmental, and scientific applications. The class will concentrate on how digital geospatial data are produced, integrated and applied in daily life and will review a variety of environmental and socioeconomic applications. (Typically offered: Fall)

## GEOS 2813H. Honors Digital Earth. 3 Hours.

This course introduces the fundamental concepts and practical geospatial techniques of the digital earth initiative. Students will learn how digital geographical information is produced (also referred to as geospatial data) and utilized in a variety of economic, environmental, and scientific applications. The class will concentrate on how digital geospatial data are produced, integrated and applied in daily life and will review a variety of environmental and socioeconomic applications. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to GEOS 2813.
GEOS 3013. Foundations of Geospatial Data Analysis. 3 Hours.
Basic mathematical tools applied in geospatial technology, including trigonometry in mapping, linear algebra in remote sensing, optimization in spatial decision support, and graph theory in routing. Course develops the framework for spatial data analysis and decision support. Students may receive credit for the course through testing. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)
GEOS 3023. Introduction to Cartography. 3 Hours.
Students learn basic principles of map design, cartographic theory and field surveying to produce a variety of computer-generated maps. An introductory course designed for students in a variety of different disciplines using AutoCad software and various new technologies. Field trips may be required. (Typically offered: Fall)

GEOS 3043. Sustaining Earth. 3 Hours.
Theory and growth of conservation and sustainability, the wise use of the major natural resources of the United States. This course meets the requirement in conservation and sustainability for teachers. Prerequisite: Junior standing. (Typically offered: Fall)

GEOS 3043H. Honors Sustaining Earth. 3 Hours.
Theory and growth of conservation and the wise use of the major natural resources of the United States. This course meets the requirement in conservation for teachers. Prerequisite: Junior standing. (Typically offered: Fall)
This course is equivalent to GEOS 3043.
GEOS 3063. Geology of Arkansas. 3 Hours.
A survey of the distribution, genesis, and age of the rocks, fossils, structures, landforms and geological processes of Arkansas. Equivalent to two hours of lecture per week. Field trips required. Prerequisite: (GEOS 1113 or GEOS 1113H or GEOS 1154). (Typically offered: Spring)
GEOS 3103. Geospatial Technologies Computational Toolkit. 3 Hours. Basic computational tools and processes applied in geospatial software, related computer hardware components, systems and applications software, and spatial database fundamentals. Python, including SciPy and NumPy, geospatial implementations will be emphasized. No programming experience is required. Students may receive credit for the course through testing. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

## GEOS 3213. Principles of Remote Sensing. 3 Hours.

Fundamental concepts of remote sensing of the environment. Optical, infrared, microwave, LIDAR, and in situ sensor systems are introduced. Remote sensing of vegetation, water, urban landscapes, soils, minerals, and geomorphology is discussed. The course includes laboratory exercises in GIS software and field spectroscopy. (Typically offered: Fall)
GEOS 3333. Oceanography. 3 Hours.
The sea, its landforms; its winds and currents as related to the atmosphere, world climates, and world trade; its basin as avenues for continental drift; its waters as habitat for plant and animal life; its marine and submarine resources as presently and potentially useful to man. Offered as physical science. Prerequisite: Junior standing. (Typically offered: Fall)

## GEOS 3413. Sedimentary Geology. 3 Hours.

An introductory study of sedimentary rocks from the standpoint of classification, field and laboratory description, genesis, and preservation. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOS 2313. (Typically offered: Spring)

## GEOS 3514. Structural Geology. 4 Hours.

Survey of deformational features and their geological significance in the crust of the earth. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: GEOS 1113 or GEOS 1154. (Typically offered: Spring)
GEOS 3543. Geospatial Applications and Information Science. 3 Hours.
An introduction to the methods and theory underlying the full range of geographic information science and collateral areas - including GNSS, remote sensing, cadastral, spatial demographics and others. (Typically offered: Fall and Spring) This course is cross-listed with ANTH 3543.

## GEOS 3553. Spatial Analysis Using ArcGIS. 3 Hours.

Applications of analysis of spatial data using ArcGIS tools in map design, on-line mapping, creating geodatabases, accessing geospatial data, geo-processing, digitizing, geocoding, spatial analysis including basic spatial statistics, analysis of spatial distributions and patterning and 3D application using ArcGIS 3D Analyst. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

## GEOS 3563. Geospatial Data Mining. 3 Hours.

Basic tools for analyzing, summarizing and visualizing geospatial data. Exploratory data and spatial data analysis, probability distributions and application, single and multivariate analysis and hypothesis testing, and spatial smoothing and interpolation. Emphasis will be on problem solving in geospatial settings using the R statistical language. Prerequisite: GEOS 3543 and (GEOS 3013 or MATH 2554 or MATH 2043 or DASC 2594) and (GEOS 3103 or DASC 1104 or DASC 2113). (Typically offered: Fall and Spring)

GEOS 3593. Introduction to Geodatabases. 3 Hours.
Fundamental concepts and applications of geospatial databases. Schema development and spatial data models for geodata. Spatial and attribute query and optimization, properties and structures of relational and object-oriented geodatabases. Spatial extensions of SQL, spatial indexing, measurement, and geometry. Prerequisite: GEOS 3543 and (GEOS 3013 or MATH 2554 or MATH 2043 or DASC 2594) and (GEOS 3103 or DASC 1104 or DASC 2113). (Typically offered: Fall and Spring)

GEOS 360V. Undergraduate Special Problems. 1-6 Hour.
Library, laboratory, or field research in different phases of geology. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## GEOS 3733. Geospatial Data Science in Public Health. 3 Hours.

Introduction to geospatial data science, including geographic information systems (GIS) and related technologies, with an emphasis on their practical applications in the fields of public health, global health, healthcare analytics, healthcare administration, and other health-related fields. (Typically offered: Fall)

GEOS 3873. Geological Data Analysis. 3 Hours.
Quantitative methods and techniques for analysis and interpretation of geological data. Corequisite: Lab component. Pre- or corequisite: MATH 2564. (Typically offered: Spring)

GEOS 3901. Junior Honors Course. 1 Hour.
Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)

GEOS 3911. Junior Honors Course. 1 Hour.
Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)

GEOS 399VH. Honors Course. 1-6 Hour.
Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit

## GEOS 4033. Hydrogeology. 3 Hours

Occurrence, movement, and interaction of water with geologic and cultural features. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 2043 or MATH 2554, and GEOS 3514. (Typically offered: Spring)

GEOS 4043. Geography of the Middle East. 3 Hours.
Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class. Prerequisite: Junior standing. (Typically offered: Fall)

GEOS 4043H. Honors Geography of the Middle East. 3 Hours.
Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class.

Prerequisite: Junior standing. (Typically offered: Irregular)
This course is equivalent to GEOS 4043.
GEOS 4053. Geomorphology. 3 Hours.
A quantitative, mechanistic overview of surface processes and landscape evolution. Lecture 2 hours, laboratory 3 hours per week. One to two field trips on weekends (2 day total) are required during the semester. Corequisite: Lab component. Prerequisite: GEOS 3873 or instructor consent. (Typically offered: Spring)

GEOS 4063. Principles of Geochemistry. 3 Hours.
Introduction to fundamental principles of geochemistry from historic development to modern concepts.Prerequisite: CHEM 1121L, CHEM 1123 and GEOS 2313. (Typically offered: Fall)

GEOS 4073. Urban Geography. 3 Hours.
Areal patterns of modern urban regions and the focus shaping these patterns. Emphasis is placed on American urban areas and their evolution and functional areas. Field work. Prerequisite: Junior standing. (Typically offered: Spring)

## GEOS 4083. Economic Geology. 3 Hours.

Introduction to mineral deposits used as economic resources. Covers basic geology and geochemistry of mineral deposit formations and the formation of major classes of deposits. Examines the relationship between the distribution of ores, oil, gas, coal, and Plate Tectonics. Explores environmental issues associated with the extraction of earth resources. Prerequisite: GEOS 2313. (Typically offered: Irregular)

## GEOS 4093. History and Philosophy of Geography. 3 Hours

This course familiarizes students with the history of geography, the contributions of geographers to scientific thought and theory, and research techniques that are used in geography. Emphasis is given to the integration of statistical and spatial analysis, and their applications in field research. The course includes short fieldbased projects in and around Northwest Arkansas. (Typically offered: Spring Even Years)

GEOS 410V. Special Problems in Geosciences. 1-6 Hour.
Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

## GEOS 410VH. Honors Special Problems in Geosciences. 1-6 Hour.

Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
This course is equivalent to GEOS 410 V .
GEOS 4113. Global Change. 3 Hours.
Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. (Typically offered: Spring)

## GEOS 4113H. Honors Global Change. 3 Hours.

Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. Prerequisite: Honors candidacy. (Typically offered: Spring) This course is equivalent to GEOS 4113.

## GEOS 4153. Karst Hydrogeology. 3 Hours.

Assessment of ground water resources in carbonate rock terrains; relation of ground water and surface water hydrology to karst; quantification of extreme variability in karst environments; data collection rationale. Field trips required. Prerequisite: GEOS 4033. (Typically offered: Irregular)

GEOS 4223. Stratigraphy and Sedimentation. 3 Hours.
Introductory investigation of stratigraphic and sedimentologic factors important to the study of sedimentary rocks. Lecture 2 hours, laboratory 3 hours per week. A required weekend, two-day field trip will be conducted during the semester. Corequisite: Lab component. Prerequisite: GEOS 3413. (Typically offered: Fall)

## GEOS 4233. Geography of Religion \& Sacrality. 3 Hours.

Explores the spatial nature of the World's major faiths and religious institutions, focusing on the distribution and origins of these religions. Examines the religious beliefs, rituals, architecture, demographics, and art in different societies, cultures, and countries. Considers the tenets and practices of what is sacred and/or spiritual, held in common by a group or community. Prerequisite: Junior or senior standing. (Typically offered: Irregular)

## GEOS 4243. Political Geography. 3 Hours.

Contemporary world political problems in their geographic context. Development of the principles of political geography with emphasis upon the problems of Eastern Europe, Africa, and Southeast Asia. Prerequisite: Junior standing. (Typically offered: Fall Odd Years)

## GEOS 4253. Petroleum Geology. 3 Hours.

Distribution and origin of petroleum. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Geology major and senior standing. (Typically offered: Fall)

GEOS 4263. Geospatial Data Science - Sources and Characteristics. 3 Hours.
Covers the wide range of geospatial data sources and characteristics with emphasis on data science applications through hands-on experience recognizing the unique requirements of major sources. Techniques for the integration of disparate, heterogeneous data sets will be covered. Corequisite: GEOS 3563. Prerequisite: GEOS 3543. (Typically offered: Fall)

GEOS 430V. Internship in Physical Geography. 3-6 Hour.
Supervised experience in municipal, county, state or private natural resource management agency, or any other such organization approved by instructor. (Typically offered: Fall, Spring and Summer)

GEOS 4333. Igneous and Metamorphic Petrology. 3 Hours.
Elementary to advanced study of the origin and evolution of igneous and metamorphic rocks in a variety of plate tectonics settings. Lecture 2 hours, Laboratory 2 hours per week. Corequisite: Lab component. Prerequisite:
GEOS 2313. (Typically offered: Spring)
GEOS 4353. Meteorology. 3 Hours.
Examination of the atmospheric processes that result in multifarious weather systems. Offered as physical science. Prerequisite: Junior standing. (Typically offered: Fall)

## GEOS 4363. Climatology. 3 Hours.

Fundamentals of topical climatology followed by a study of regional climatology. Offered as physical science. Prerequisite: GEOS 1133 or GEOS 4353. (Typically offered: Spring)

GEOS 437V. Geology Field Trip. 1-2 Hour.
Camping field trip to areas of geologic interest, usually conducted during Spring Break. (Typically offered: Spring) May be repeated for up to 4 hours of degree credit.
GEOS 4383. Hazard \& Disaster Assessment, Mitigation, Risk \& Policy. 3 Hours.
Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior or senior standing. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

GEOS 4383H. Honors Hazard \& Disaster Assessment, Mitigation, Risk \& Policy. 3 Hours.
Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is equivalent to GEOS 4383.
GEOS 4393. American Public Lands \& Policy. 3 Hours.
The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Junior or senior standing. (Typically offered: Irregular)

GEOS 4393H. Honors American Public Lands \& Policy. 3 Hours.
The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Honors standing and Junior or senior standing. (Typically offered: Irregular)
This course is equivalent to GEOS 4393.

## GEOS 4433. Geophysics. 3 Hours.

Derivation from physical principles, of the geophysical methods for mapping the Earth. Computational methods of converting gravity, magnetic, radiometric, electrical, and seismic data into geologic information. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MATH 2564 and PHYS 2033 and PHYS 2031L and GEOS 3514. (Typically offered: Irregular)

## GEOS 4473. Applied Climatology. 3 Hours.

Applied climatology involves the use of climatic data to solve a variety of social, economic and environmental problems, such as for clients in agriculture, water and energy management. The basic purpose of applied climatology is to help society, at all scales and levels, to achieve a better adjustment to the climatic environment. (Typically offered: Fall)

## GEOS 4493. Geography of Political Violence. 3 Hours.

This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextuallyinformed understanding of the international system and how it is shaped by civil war. Prerequisite: Junior or senior standing. (Typically offered: Fall Even Years) This course is cross-listed with INST 4103H.

GEOS 4493H. Honors Geography of Political Violence. 3 Hours.
This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextuallyinformed understanding of the international system and how it is shaped by civil war Prerequisite: Junior or senior standing and honors standing. (Typically offered: Fall Even Years)
This course is cross-listed with GEOS 4493, INST 4103H.
GEOS 4523. Cartographic Design and Production. 3 Hours.
This course addresses advanced cartographic concepts (i.e. visual hierarchy, aesthetics, image cognition) and production techniques as they relate to computerassisted mapping. Students produce a variety of maps using Adobe Illustrator (CS $4-6$ ) software to build a map portfolio. Field trips may be required. Prerequisite: GEOS 3023. (Typically offered: Spring)
GEOS 4533. Introduction to Petroleum Geophysics. 3 Hours.
Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Prerequisite: MATH 2564, (PHYS 2033 or PHYS 2074), and GEOS 3514 or instructor consent. (Typically offered: Fall)

GEOS 4533H. Honors Introduction to Petroleum Geophysics. 3 Hours.
Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Prerequisite: MATH 2564, (PHYS 2033 or PHYS 2074), and GEOS 3514 or instructor consent. (Typically offered: Fall)
This course is equivalent to GEOS 4533.

GEOS 4553. Introduction to Raster GIS. 3 Hours.
Theory, data structure, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. Prerequisite: GEOS 3543 or ANTH 3543. (Typically offered: Fall) This course is cross-listed with ANTH 4553.
GEOS 4563. Geology of Our National Parks. 3 Hours.
This course examines the underlying geology responsible for selected parks, and explores the interplay of geology, biology, climate, topography, and humans to evaluate the value of the parks, and to anticipate the problems they will face in the near and long-term. Prerequisite: GEOS 1113. (Typically offered: Fall)

## GEOS 4583. Enterprise and Multiuser GIS. 3 Hours.

GIS practice that's typical of collaborative team-based geospatial organizations. Solve real-world problems through end-to-end GIS design and implementation using ArcGIS Enterprise, extensive federal, state, and local repositories, and high quality software documentation. Includes relevant training in geospatial provenance and metadata, and in enterprise and multiuser GIS administration. (Typically offered: Spring)

GEOS 4593. Introduction to Global Positioning Systems and Global Navigation Satellite Systems. 3 Hours.
Fundamentals of navigation, mapping, and high-precision positioning using the Navstar Global Positioning System. Topics include datum definition and transformation, map projections, autonomous and differential positioning using both code and carrier processing, and analysis of errors. Prerequisite: GEOS 3543 or GEOS 5543. (Typically offered: Fall)

## GEOS 4653. GIS Analysis and Modeling. 3 Hours.

Unlike conventional GIS courses that focus on studying "where", this course will teach students to address beyond "where" using various GIS analysis and modeling techniques to explore "why" and "how". The course will provide theoretical and methodological reviews of the principles of cartographic modeling and multi-criteria decision-making. (Typically offered: Spring)
GEOS 4663. Low-Temperature Geochemistry of Natural Waters. 3 Hours.
Covers the low-temperature geochemistry of waters and their associated minerals at Earth's surface. Examines the controls on the chemical composition of natural waters and the minerals precipitated from them. Topics covered will include water-rock interactions, pH , redox, the carbonate-water system, clay minerals and exchange, heavy metals, and a brief introduction to stable isotopes and geomicrobiology. Prerequisite: CHEM 1121L, CHEM 1123, GEOS 1113, and GEOS 1111L. (Typically offered: Fall)

## GEOS 4686. Geology Field Camp. 6 Hours.

A professional course taught off campus emphasizing occurrence, description, mapping, and interpretation of major rock types. May not be taken for graduate credit. Prerequisite: GEOS 3413 and GEOS 3514. (Typically offered: Summer)

## GEOS 4693. Environmental Justice. 3 Hours.

This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. (Typically offered: Spring)
GEOS 4783. Geography of Europe. 3 Hours.
Geographic regions of the area with emphasis on their present development. Prerequisite: Junior standing. (Typically offered: Irregular)

GEOS 4793. Geospatial Unmanned Aircraft Systems. 3 Hours.
Geospatial unmanned aircraft systems (UAS) are becoming key technologies in a number of disciplines. This course will introduce safe and legal operation of UAS in aerial photography, multispectral, thermal and LIDAR applications, geodetic control, photogrammetric and computer vision processing, and the creation of accurate 2D and 3D digital information products. Pre- or Corequisite: GEOS 3213 or GEOS 4593 or equivalent. (Typically offered: Fall)
GEOS 4813. Geography of Eurasia. 3 Hours.
Introduction to the culture, society, and politics of Eurasia using the organizing concept of empire from the moment of its consolidation in 1945 to its dissolution in 1991. Focuses on places that have emerged from this order and emphasizes experience and memory at each of these different times and places. Prerequisite: Junior standing. (Typically offered: Spring Even Years)

GEOS 4924. Earth System History (ACTS Equivalency = PHSC 1104). 4 Hours. Physical and biological events that form the history of the earth from its formation to the beginning of the historical era. Corequisite: Lab component. Prerequisite: GEOS 3413 and (GEOS 4223 or GEOS 4333) and GEOS 3514. (Typically offered: Spring)

## GEOS 4933. Ancient Forest Science and Sustainability. 3 Hours.

Ancient forests preserve beautiful habitat with high ecological integrity. This course will examine the development, spatial distribution, and ongoing destruction of ancient forests worldwide, and how science can contribute to the understanding and sustainable management of these valuable resources. (Typically offered: Spring)

## GEOS 4972H. Senior Honors Course I. 2 Hours.

Special honors research in geology. Two hours of credit each semester. Prerequisite: Junior honors. (Typically offered: Fall, Spring and Summer)

## GEOS 4982H. Senior Honors Course II. 2 Hours.

Special honors research in geology. Two hours of credit each semester. Prerequisite: Junior honors. (Typically offered: Fall, Spring and Summer)

## GEOS 4993. Dynamics of Sediment Transport. 3 Hours.

This is a course focused on how fluids transport sediment and construct stratigraphy. Lectures will develop environmental fluid mechanics and sediment transport from first principles so they can be used to evaluate sedimentological and stratigraphic problems. This framework will be applied to a sedimentological problem using original data and analysis. Pre- or Corequisite: GEOS 4223. Prerequisite:
GEOS 3413. (Typically offered: Fall Odd Years)

## Graphic Design (GDSB)

Marty Maxwell Lane
Director of the School of Art
Studio \& Design Center, 696 W. Praxis Lane
479-575-5202
School of Art Website (https://fulbright.uark.edu/departments/art/)
The Bachelor of Fine Arts degree in Graphic Design — often also referred to as visual design, visual communication design or visual communication - will prepare students to be proficient makers and thoughtful problem seekers and solvers in a four-year professional degree program. Students will work seamlessly across a range of media, working to identify appropriate solutions for audience and context. Students will be exposed to a rigorous curriculum covering research, theory, critical thinking, professional practices, conceptual idea-making, all while asking them to formally experiment and refine. The Graphic Design degree focuses on: typography, interactivity, branding and design research, each identified as strongly connected to the design industry, while incorporating the university research initiatives of the School of Art at the University of Arkansas.

## Requirements for Admission to the Bachelor of Fine Arts Degree in Graphic Design

For admission to the B.F.A. in Graphic Design, students must be a declared Art major in the School of Art and successfully complete the art foundation course sequence of ARTS 1919C Studio Foundation I and ARTS 1929C Studio Foundation II. Students must have a 3.0 cumulative GPA plus submit an application and portfolio for review.

University and College Requirements for a Bachelor of Fine Arts in Graphic Design

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

| State Minimum PHIL 2003 list completing bo | ore (The Humanities requirement is satisfied by below. The Fine Arts requirement is satisfied by RHS 2913 and ARHS 2923 listed below.) |
| :---: | :---: |
| PHIL 2003 | Introduction to Philosophy (ACTS Equivalency = PHIL 1103) |
| ARTS 1919C | Studio Foundation I |
| ARTS 1929C | Studio Foundation II |
| GDES 2313 | Design Tools and Concepts |
| GDES 3313 | Typographic Systems 1 |
| GDES 3323 | Typographic Systems 2 |
| GDES 3383 | User Experience |
| GDES 3393 | Identity Systems 1 |
| GDES 4303 | Professional Development and Seminar |
| GDES 4313 | Interactive Language |
| GDES 4323 | Technology in Context |
| GDES 4343 | Identity Systems 2 |
| GDES 4353 | Human Centered Design |
| GDES 4363 | Design for Complexity |
| GDES 4373 | Typographic Systems 3 |
| GDES 4383 | Degree Project |
| Nine credit hours in studio art (ARTS) courses |  |
| Three credit hours in any School of Art course (ARED, ARHS, ARTS or GDES), excluding ARHS 1003. |  |
| 15 credit hours | t history, to include: |


| ARHS 2913 | Art History Survey I (ACTS Equivalency = ARTA <br> 2003) |
| :--- | :--- |
| ARHS 2923 | Art History Survey II (ACTS Equivalency = ARTA <br> 2103 ) |
| ARHS 4823 | History of Graphic Design |
| Six credit hours in art history (ARHS) courses numbered at the |  |
| 3000-level or higher |  |

Students are required to take one interdisciplinary elective for three credit hours numbered at the 3000 -level or higher in a program outside the School of Art. It must have a clear connection to design and/or to the student's chosen topic for their Degree Project. The course can be taken at any time, but it is recommended during the final year. Interdisciplinary electives require approval by the program director.
General Electives $\quad 1$

## Graphic Design B.F.A. <br> Eight-Semester Degree Plan

Students selecting the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| MATH 1313 Quantitative Reasoning (ACTS Equivalency $=$ MATH 1113) (Satisfies General Education Outcome 2.1) ${ }^{1}$ <br> or MATH 1203 College Algebra (Satisfies General Education Outcome 2.1) ${ }^{1}$ or any MATH course numbered higher than MATH 1203 (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| ARTS 1919C Studio Foundation I <br> ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 9 | 3 |
| ARHS 2913 Art History Survey I (ACTS <br> Equivalency $=$ ARTA 2003) <br> or ARHS 2923 Art History Survey II (ACTS <br> Equivalency = ARTA 2103) |  | 3 |
| ARTS 1929C Studio Foundation II |  | 9 |
| Year Total: | 15 | 15 |
| Second Year | Fall | Units <br> Spring |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ | 4 |  |
| ARHS 2913 Art History Survey I (ACTS <br> Equivalency = ARTA 2003) <br> or ARHS 2923 Art History Survey II (ACTS <br> Equivalency = ARTA 2103) | 3 |  |
| GDES 2313 Design Tools and Concepts | 3 |  |
| GDES 3313 Typographic Systems 1 | 3 |  |
| Studio Art (ARTS) course | 3 |  |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  | 4 |
| PHIL 2003 Introduction to Philosophy (ACTS Equivalency = PHIL 1103) (Satisfies General Education Outcomes 3.2 and 5.1) ${ }^{1}$ |  | 3 |
| ARHS 4823 History of Graphic Design |  | 3 |
| GDES 3323 Typographic Systems 2 |  | 3 |
| GDES 3383 User Experience |  | 3 |
| Year Total: | 16 | 16 |


| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2) ${ }^{1}$ | 3 |  |
| GDES 3393 Identity Systems 1 | 3 |  |
| GDES 4313 Interactive Language | 3 |  |
| Art History (ARHS) course numbered at the 3000level or higher | 3 |  |
| Studio Art (ARTS) course | 3 |  |
| State Minimum Core-Social Sciences (Satisfies General Education Outcome 3.3 and 4.1) ${ }^{1}$ |  | 3 |
| State Minimum Core-Social Sciences (Satisfies General Education Outcome 3.3 and 4.1) ${ }^{1}$ |  | 3 |
| GDES 4303 Professional Development and Seminar |  | 3 |
| GDES 4343 Identity Systems 2 |  | 3 |
| Studio Art (ARTS) course |  | 3 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| State Minimum Core-Social Sciences (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| GDES 4323 Technology in Context | 3 |  |
| GDES 4353 Human Centered Design (Satisfies General Education Outcome 1.2) ${ }^{1}$ | 3 |  |
| GDES 4373 Typographic Systems 3 | 3 |  |
| Art History (ARHS) course numbered at the 3000level or higher | 3 |  |
| GDES 4363 Design for Complexity |  | 3 |
| GDES 4383 Degree Project (Satisfies General Education Outcome 6.1) ${ }^{1}$ |  | 3 |
| Any School of Art course (ARED, ARHS, ARTS, or GDES) |  | 3 |
| Interdisciplinary Elective (to be approved by the program director) |  | 3 |
| General Electives |  | 1 |
| Year Total: | 15 | 13 |

## Total Units in Sequence:

Internship credit considered in lieu of required studios upon approval of professors, based on content and merit of internship.
${ }^{1}$ Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \% \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWwilCJXVCli6Mn0\%3D \%7C1000\&sdata=ZHBCul1Vytd
\%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu
person from outside SoA)
\%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWw \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks \%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## Honors Requirements

As part of the Honors Studies Program of the Fulbright College of Arts and Sciences, the School of Art provides the opportunity for academically superior junior- and senior-level students to acquire broader and deeper knowledge and skills in graphic design. This is accomplished through independent research projects in design under the direction of the graphic design faculty. Outstanding achievement is recognized by awarding the distinction "Art Scholar Cum Laude."

## Project Requirements

- Design artifact
- Written research report
- Final presentation/exhibition
- Thesis document based on research report with expanded analytical component -address contextual impact of the design artifact and broader implications of the research
- Thesis defense with committee (separate from final presentation/ exhibition)


## Courses

| ARHS 4823H | Honors History of Graphic Design | 3 |
| :--- | :--- | ---: |
| GDES 490VH | Honors Thesis in Graphic Design | $1-6$ |
| GDES 4383H | Honors Degree Project | 3 |

## Timeline

## Sophomore year

- ARHS 4823H Honors History of Graphic Design (3 hours, required, spring semester)
- Declare honors prior to the start of spring semester sophomore year


## Junior year

- GDES 490VH Honors Thesis in Graphic Design (1-6 hours, optional, fall or spring semester)
- Define thesis project
- Thesis proposal due in March


## Senior year

- GDES 4383H Honors Degree Project (3 hours, required, spring semester)
- Form thesis committee in fall semester (2 people from School of Art, 1

To graduate with honors distinction, a student must maintain a cumulative grade-point average of 3.5 in all college course work, complete and defend an honors thesis, and take 12 hours of honors credit (which may include the required GDES honors courses listed above). Higher degree distinctions take into consideration the student's entire academic career and are recommended for only those students whose honors projects and
programs of study demonstrate a truly exceptional degree of creativity and scholarship.

## Courses

## GDES 2313. Design Tools and Concepts. 3 Hours.

Introduces Graphic Design students to design concepts with a concentration on professional industry tools. Emphasizes development of visual problem solving while creating well-crafted solutions. Prerequisite: ARTS 1919C and ARTS 1929 C. (Typically offered: Fall)

## GDES 3313. Typographic Systems 1. 3 Hours.

Examination of letterform construction, including anatomy and architecture. Analysis through a historical lens, exploring technological and cultural contexts. Typographic nuance and connotation. Introduction of the grid as a means to understand layout and organize typography. Prerequisite: ARTS 1919C and ARTS 1929C and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall)
GDES 3323. Typographic Systems 2. 3 Hours.
Will introduce the complexity of adding imagery, both photographic and illustrative, into typographic layout. Management of hierarchy in a more advanced way through grid usage. Artifacts will span print to web, exploring how typography must always adapt to new contexts and audiences. Prerequisite: GDES 2313 and GDES 3313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Spring)

## GDES 3383. User Experience. 3 Hours.

Prepare students to design with usability and function at the forefront of their decision making. Personas, user scenarios and research to guide the design process. Exploration of the field of information architecture in order to clearly structure information and experience. Introduction to HTML, CSS, and other interactive languages. Prerequisite: GDES 2313, GDES 3313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)
GDES 3393. Identity Systems 1. 3 Hours.
Beginning identity design course, focusing on theory and application of semiotics, through creation of icon sets and small scale applications. Emphasis placed on connotation, creating messaging and formal development. Prerequisite: GDES 3323 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall)

GDES 4303. Professional Development and Seminar. 3 Hours.
Preparation of students for professional practice and job seeking. Development of online and print portfolio and other collateral. Contemporary design practice through discussions, reading, writing, guest speakers and studio visits. Emphasis on assisting each student in preparing for their unique future. Prerequisite: GDES 3383 and GDES 3393 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Spring)

## GDES 4313. Interactive Language. 3 Hours.

Advanced course utilizing interactive languages to create responsive experiences for the web, touch screens. Exploration of the intersection of linear and non-linear design experiences in the application of motion to web. Prerequisite: GDES 3323 and GDES 3383 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

## GDES 4323. Technology in Context. 3 Hours.

Advanced course focusing on speculative explorations in the world of interaction design. Much of the work will be touch and gesture based and dealing with the built environment. Application of knowledge about proper workflow and execution in an advanced way. Prerequisite: GDES 4303 and GDES 4313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall)
GDES 4333. Special Topics in Graphic Design. 3 Hours.
Topics dealing with trends, movements, and new elements within the design field, such as entrepreneurship, diversity, sustainability, critical issues, and data. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

## GDES 4343. Identity Systems 2. 3 Hours.

Advanced identity design course emphasizing creating cohesive messaging systems that cover a wide range of media. Creation of identity systems that are based on research and appropriate to content, context and audience. Media may span environmental, motion, print, web and packaging. Prerequisite: GDES 3393 and GDES 4313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

## GDES 4353. Human Centered Design. 3 Hours.

Research-based studio introducing design methods that focus on an audience centric process. Exposure to communication theory, modes of persuasion, sustainability, how to design for niche audiences. Prerequisite: GDES 4303 and GDES 4313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall)

GDES 4363. Design for Complexity. 3 Hours.
Providing opportunity to address problems existing outside of the classroom with the focus shifting between design for good initiatives. Collaboration, research, problem seeking and solving will be addressed. Prerequisite: GDES 4323, GDES 4343, GDES 4353, and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

## GDES 4373. Typographic Systems 3. 3 Hours.

Culminating typography course, exploration of typography at an advanced level through a variety of projects. Projects may range from type design to type in motion to complex publication design. Exhibition of the utmost professional ideation, process, execution and craft expected. Prerequisite: GDES 4303, GDES 4343, and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

## GDES 4383. Degree Project. 3 Hours.

Capstone course requiring completion of a self-directed project through in-depth research, writing and making, offering an opportunity to specialize prior to entering the job market. Prerequisite: GDES 4323, GDES 4343, GDES 4353, and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Spring)

## GDES 4383H. Honors Degree Project. 3 Hours.

Capstone course requiring completion of a self-directed project through indepth research, writing and making, offering an opportunity to specialize prior to entering the job market. Prerequisite: Honors standing, GDES 4323, GDES 4343, GDES 4353, and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Spring)
This course is equivalent to GDES 4383.

## GDES 439V. Special Problems in Graphic Design. 1-6 Hour.

Advanced individual projects in graphic design. Prerequisite: Any 4000 level GDES visual design course except GDES 4343. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## GDES 490VH. Honors Thesis in Graphic Design. 1-6 Hour.

Thesis hours for honors students completing an honors thesis. Prerequisite: Honors standing. (Typically offered: Fall and Spring)

GDES 494V. Graphic Design Internship. 1-6 Hour.
Credit for practical experience gained through internship in graphic design. Report required form intern and field supervisor on progress and significant accomplishments. 3 credit hours per semester. Prerequisite: Any 4000 level GDES visual design course except GDES 4343. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## History (HIST)

Laurence Hare
Department Chair
416 Old Main
(479) 575-5890
lhare@uark.edu
History Department Website (http://fulbright.uark.edu/departments/ history/)

The Department of History offers an undergraduate major leading to a Bachelor of Arts in history as well as a minor in history.

The Department of History offers specialized study of world societies and their evolution to the present. Students may concentrate on areas such as Africa, the Middle East, Latin America, Asia, Europe, or the history of the United States. Undergraduate majors and minors prepare students for careers in government service, law, publishing, teaching, business school, diplomacy, journalism, archival management, communications, or graduate studies.

The Department of History also offers a highly competitive graduate program. Graduate faculty members direct both seminars and specialized training leading to the Master of Arts and Doctor of Philosophy degrees. The Department of History also offers junior and senior history majors an opportunity to secure valuable experience working in the field of history. Previous interns have worked for the Washington County Historical Society and the Arkansas Historical Association.

For requirements for advanced degrees in history, see the Graduate School Catalog (http://catalog.uark.edu/graduatecatalog/programsofstudy/ historyhist/).

For information regarding departmental scholarships, visit the History Department's scholarships page (http://fulbright.uark.edu/departments/ history/undergraduate/scholarships.php).

## Requirements for B.A. in History with Histories of Conflict, Justice and Peace Concentration

The following credit hour requirements must be met (refer to Degree Completion Program Policy (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/) for additional information). In addition, the Fulbright College Writing Requirement may be satisfied by completing at least three credit hours of HIST 4893, HIST 4893H, HIST 498 V , or HIST 498 VH with a grade of B or better. With approval of the department, students may also meet the Fulbright College Writing Requirement by submitting a substantive research paper completed in a course in the Department of History at the 3000-level or higher and earning a grade of $B$ or better.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser.

## State Minimum Core

## Foundations in History

HIST 1001 Perspectives in History (Perspectives in History) or HIST 10011Hbnors Perspectives in History
Choose three courses from the following. Courses applied to this requirement may not be used to satisfy other requirements in the major.
Choose one world civilization survey course:
HIST 1113 Institutions and Ideas of World Civilizations I
(ACTS Equivalency $=$ HIST 1113)

| HIST 1123 Institutions and Ideas of World Civilizations II <br> (ACTS Equivalency = HIST 1123) <br> Choose one United States history survey course:  |  |
| :--- | :--- |
| HIST 2003 | History of the American People to 1877 (ACTS <br> Equivalency = HIST 2113) |
| HIST 2013 | History of the American People, 1877 to Present <br> (ACTS Equivalency = HIST 2123) |
| Choose one additional world civilization survey course, or one United |  |
| States survey course, or one of the topical courses below: |  |

Methods in History
Choose one of the following courses. Courses applied to this requirement may not be used to satisfy other requirements in the major.

HIST 3013 Ancient Historians
HIST 3713 Issues in Public History
HIST 3963
HIST 3973 Historical Methods (Historical Methods) or HIST 397:Honors Historical Methods
HIST 4693 Approaching Global History

## History Electives

Complete six credit hours in history (HIST) electives, including at least three credit hours numbered at the 3000-level or higher. Credit hours applied to this requirement may not be used to satisfy other requirements in the major.

Concentration

Applications in History
HIST 4901 Applying History (Applying History)
Complete at least six credit hours from the following three options.
Credit hours applied to this requirement may not be used to satisfy other requirements in the major.

Up to three credit hours in HIST 491V Internship in History, or up to three credit hours from a history (HIST) course numbered at the 3000-level or higher or equivalent approved by the department that is either part of an approved study abroad or designated servicelearning program.
HIST 4893 History Seminar
or HIST 4893\#bnors History Seminar
Up to three credit hours of HIST 498V Senior Thesis/HIST 498VH Senior Thesis.
Any UA-Fayetteville credit hours numbered at the 3000-level or
higher
Any credit hours numbered at the 3000-level or higher, or any 10
2000-level credit hours that have a course prerequisite
General Electives

| Total Hours | 120 |
| :--- | :--- |

In consultation with an academic adviser, students are encouraged to design a program of study with both breadth and depth. All history majors
are also recommended to take courses leading to a minor or additional major suited to the student's academic and career goals.

## Concentration Requirements:

Complete 12 credit hours from the following:

| HIST 3063 | Military History | 3 |
| :--- | :--- | :--- |
| HIST 3093 | Women in U.S. History | 3 |
| HIST 3133 | History of Sports in Africa | 3 |
| HIST 3203 | Colonial Latin America | 3 |
| HIST 3233 | African American History to 1877 | 3 |
| HIST 3243 | African American History Since 1877 | 3 |
| HIST 3253 | The History of Sub-Saharan Africa | 3 |
| HIST 3263 | History of the American Indian | 3 |
| HIST 3273 | Agricultural and Rural History of the United States | 3 |
| HIST 3333 | LGBTQ+ Histories | 3 |
| HIST 3373 | Rise of the American Empire: War, Migration and | 3 |
|  | Expansion, 1789-1917 | 3 |
| HIST 3383 | Arkansas and the Southwest | 3 |
| HIST 3453 | Modern Terrorism | 3 |
| HIST 3473 | Palestine and Israel in Modern Times | 3 |
| HIST 3533 | World War II | 3 |
| HIST 3543 | Russia to 1861 | 3 |
| HIST 3553 | Russia Since 1861 | 3 |
| HIST 3573 | World War I | 3 |
| HIST 3583 | The United States and Vietnam, 1945-1975 | 3 |
| HIST 3603 | Colonial and Revolutionary America, 1600-1789 | 3 |
| HIST 3623 | Black Movements and Messiahs | 3 |
| HIST 3693 | Europe in the 20th Century | 3 |
| HIST 4003 | Democratic Athens | 3 |
| HIST 3013 | Ancient Historians | 3 |
| HIST 4023 | Roman Republic | 3 |
| HIST 4093 |  | 3 |

HIST 4093 3
HIST 4163 Tudor-Stuart England, 1485-1714 3
HIST 4203 History of the Holocaust 3
HIST 4123 Africa and the Trans-Atlantic Slave Trade 3
HIST 4253 Germany, 1918-1945 3
HIST $4303 \quad$ Transatlantic Relations, 1919-Present 3
HIST $4323 \quad$ Wars of Religion: From the Crusades to $9 / 11 \quad 3$
HIST 4363 The Middle East since 1914

| HIST 4443 | Frontiers and Borderlands in Colonial Latin | 3 |
| :--- | :--- | :--- |
|  | America |  |


| HIST 4463 | The American Frontier | 3 |
| :--- | :--- | :--- |
| HIST 4483 |  | 3 |

HIST 4503 History of Political Parties in the United States, 3

| HIST 4513 | History of Political Parties in the United States <br> Since 1896 | 3 |
| :--- | :--- | :--- |
| HIST 4593 | The Colonial French in the Mississippi Valley | 3 |
| HIST 4603 | U.S. Labor History to 1877 | 3 |
| HIST 4623 | Revolutionary America, 1763 to 1789 | 3 |
| HIST 4663 | Rebellion to Reconstruction, 1850-1877 | 3 |
| HIST 4673 | The American Civil War | 3 |
| HIST 4733 | Recent America, 1941 to the Present | 3 |


| HIST 4743 | The Cold War in Latin America: Revolutions, <br> Violence, and Politics | 3 |
| :--- | :--- | :--- |
| HIST 4793 | Colonial India, 1758-1948 | 3 |
| HIST 4803 | Modern Scandinavia | 3 |
| HIST 4823 | Black Freedom in the Age of Emancipation | 3 |
| HIST 4863 | From Hiroshima to Fukushima: Nuclear Security in | 3 |
|  | Asia | 3 |

## Eight-Semester Degree Plan for a Bachelor of Arts in History with a Histories of Conflict, Justice, and Peace Concentration

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| MATH 1313 Quantitative Reasoning (ACTS Equivalency = MATH 1113) (Satisfies General Education Outcome 2.1) ${ }^{1}$ <br> or MATH 1203 College Algebra (ACTS <br> Equivalency $=$ MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$ <br> or any MATH course numbered higher than MATH 1203 (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| HIST 1001 Perspectives in History (Satisfies General Education Outcome 5.1) | 1 |  |
| Satisfies General Education Outcomes 3.2, 3.3, and 4.1: ${ }^{1}$ <br> HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) or HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123) | 3 |  |
| State Minimum Core-Fine Arts (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| State Minimum Core-Social Science (non-HIST) (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ |  | 3 |
| Satisfies General Education Outcomes 3.2, 3.3, and 4.2: ${ }^{1}$ |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  |  |
| Foundations in History Electives |  | 3 |
| State Minimum Core—Humanities |  | 3 |

State Minimum Core—Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$
Year Total:

16

| Second Year | Fall |
| :--- | ---: |
| State Minimum Core—Science with corequisite lab | 4 |
| (Satisfies General Education Outcome 3.4) $^{1}$ |  |
| HIST Electives | 3 |
| Concentration Course 1 | 3 |
| State Minimum Core—Social Science (Satisfies | 3 |
| General Education Outcome 3.3) | 2 |
| General Electives |  |
| Methods in History Electives |  |
| HIST Electives |  |
| Concentration Course 2 | 15 |

Third Year $\quad$ Fal

Any UA-Fayetteville credit hours numbered at the
3

3000-level or higher
Any credit hours numbered at the 3000-level or
higher, or any 2000-level credit hours that have a course prerequisite
General Electives

Concentration Course 4
Any UA-Fayetteville credit hours numbered at the 3000-level or higher
Any credit hours numbered at the 3000-level or higher, or any 2000-level credit hours that have a course prerequisite
General Electives
Year Total: 15
Fourth Year
Fall

Units
Fall Spring

HIST 4901 Applying History

Applications in History Electives 3
Any credit hours numbered at the 3000-level or
higher, or any 2000-level credit hours that have a
course prerequisite
General Electives
Applications in History Electives (Satisfies General
Education Outcomes 1.2 and 6.1) ${ }^{1}$
General Electives
Year Total:
15

## Total Units in Sequence:

## Units

Spring

Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened
\%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWv \%7C1000\&sdata=ZHBCul1Vytd \%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu
\%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWv \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks \%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## Requirements for B.A. in History with Histories of Global Cultures and Societies Concentration

The following credit hour requirements must be met (refer to Degree Completion Program Policy (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/) for additional information). In addition, the Fulbright College Writing Requirement may be satisfied by completing at least three credit hours of HIST 4893, HIST 4893H, HIST 498 V , or HIST 498 VH with a grade of B or better. With approval of the department, students may also meet the Fulbright College Writing Requirement by submitting a substantive research paper completed in a course in the Department of History at the 3000-level or higher and earning a grade of $B$ or better.

State minimum core (p.81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser.

## State Minimum Core <br> Foundations in History 10

HIST 1001 Perspectives in History (Perspectives in History) or HIST 10011 +bnors Perspectives in History
Choose three courses from the following. Courses applied to this requirement may not be used to satisfy other requirements in the major.
Choose one world civilization survey course:

| HIST 1113 | Institutions and Ideas of World Civilizations I <br> (ACTS Equivalency = HIST 1113) |
| :---: | :--- |
| HIST 1123 | Institutions and Ideas of World Civilizations II <br> (ACTS Equivalency = HIST 1123) |
| Choose one United States history survey course: |  |
| HIST 2003 | History of the American People to 1877 (ACTS <br> Equivalency = HIST 2113) |
| HIST 2013 | History of the American People, 1877 to Present <br> (ACTS Equivalency = HIST 2123) |

Choose one additional world civilization survey course, or one United
States survey course, or one of the topical courses below:

| HIST 1203 | History of Football |
| :--- | :--- |
| HIST 1223 | History of Business in America |


| HIST 1233 | History of Race and Medicine |
| :--- | :--- |
| HIST 2203 | History of Tomorrow: Global Visions of the Future <br> (History of Tomorrow: Global Visions of the Future) |
|  | HIST 2093 |

## Methods in History

Choose one of the following courses. Courses applied to this requirement may not be used to satisfy other requirements in the major.

| HIST 3013 | Ancient Historians |
| :---: | :---: |
| HIST 3713 | Issues in Public History |
| HIST 3963 |  |
| HIST 3973 or HIST | Historical Methods (Historical Methods) :Honors Historical Methods |
| HIST 4693 | Approaching Global History |

## History Electives

Complete six credit hours in history (HIST) electives, including at least three credit hours numbered at the 3000-level or higher. Credit hours applied to this requirement may not be used to satisfy other requirements in the major.

## Concentration

Applications in History
HIST 4901 Applying History (Applying History)
Complete at least six credit hours from the following three options.
Credit hours applied to this requirement may not be used to satisfy other requirements in the major.

Up to three credit hours in HIST 491V Internship in History, or up to three credit hours from a history (HIST) course numbered at the 3000-level or higher or equivalent approved by the department that is either part of an approved study abroad or designated servicelearning program.
HIST 4893 History Seminar
or HIST 4893\#bnors History Seminar
Up to three credit hours of HIST 498V Senior Thesis/HIST 498VH Senior Thesis.
Any UA-Fayetteville credit hours numbered at the 3000-level or 5 higher
Any credit hours numbered at the 3000-level or higher, or any 10 2000-level credit hours that have a course prerequisite
General Electives

## Total Hours

In consultation with an academic adviser, students are encouraged to design a program of study with both breadth and depth. All history majors are also recommended to take courses leading to a minor or additional major suited to the student's academic and career goals.

Complete 12 credit hours from the following:

| HIST 3003 | History of Christianity | 3 |
| :--- | :--- | :--- |
| HIST 3033 | Islamic Civilization | 3 |
| HIST 3043 | History of the Modern Middle East | 3 |
| HIST 3073 |  | 3 |
| HIST 3083 |  | 3 |
| HIST 3103 | European Integration and Globalization | 3 |
| HIST 3133 | History of Sports in Africa | 3 |
| HIST 3193 | The Making of the Modern Caribbean | 3 |


| HIST 3203 | Colonial Latin America | 3 |
| :---: | :---: | :---: |
| HIST 3213 | Modern Latin America | 3 |
| HIST 3253 | The History of Sub-Saharan Africa | 3 |
| HIST 3293 | History of Popular Culture | 3 |
| HIST 3303 | U.S. Immigration History | 3 |
| HIST 3313 | Latinos and Latinas in the U.S. | 3 |
| HIST 3363 | The Atlantic World, 1400-1850 | 3 |
| HIST 3373 | Rise of the American Empire: War, Migration and Expansion, 1789-1917 | 3 |
| HIST 3393 | The Ozarks: People, Place, and Time | 3 |
| HIST 3423 | British History, 1688-Present | 3 |
| HIST 3433 | Twentieth Century Britain through Film | 3 |
| HIST 3523 | Modern China | 3 |
| HIST 3533 | World War II | 3 |
| HIST 3573 | World War I | 3 |
| HIST 3593 | The 1960s: A World Transformed | 3 |
| HIST 3633 | Modern Japan | 3 |
| HIST 3763 | History of Central Asia | 3 |
| HIST 3883 | Modern Italy and the World, 1861-Present | 3 |
| HIST 4013 | Alexander the Great and the Hellenistic World | 3 |
| HIST 4033 | Roman Empire | 3 |
| HIST 4043 | Late Antiquity and the Early Middle Ages | 3 |
| HIST 4073 | Renaissance and Reformation, 1300-1600 | 3 |
| HIST 4083 | Early Modern Europe, 1600-1800 | 3 |
| HIST 4103 | Byzantine Empire | 3 |
| HIST 4123 | Africa and the Trans-Atlantic Slave Trade | 3 |
| HIST 4133 | Society and Gender in Modern Europe | 3 |
| HIST 4143 | Intellectual History of Europe Since the Enlightenment | 3 |
| HIST 4163 | Tudor-Stuart England, 1485-1714 | 3 |
| HIST 4183 | Great Britain, 1707-1901 | 3 |
| HIST 4193 | Great Britain,1901-2001 | 3 |
| HIST 4203 | History of the Holocaust | 3 |
| HIST 4213 | The Era of the French Revolution | 3 |
| HIST 4223 | France Since 1815 | 3 |
| HIST 4263 | Modern Africa | 3 |
| HIST 4303 | Transatlantic Relations, 1919-Present | 3 |
| HIST 4333 | Modern Islamic Thought | 3 |
| HIST 4413 | New Women in the Middle East | 3 |
| HIST 4433 | Social and Cultural History of the Modern Middle East | 3 |
| HIST 4443 | Frontiers and Borderlands in Colonial Latin America | 3 |
| HIST 4473 |  | 3 |
| HIST 4693 | Approaching Global History | 3 |
| HIST 4703 | Emergence of Modern America, 1876-1917 | 3 |
| HIST 4713 | Women, Gender, and Sexuality in Colonial Latin America | 3 |
| HIST 4753 |  | 3 |
| HIST 4763 | Diplomatic History of the United States, 1900-1945 | 3 |
| HIST 4773 | Diplomatic History of the US, 1945 to Present | 3 |
| HIST 4783 | History of Modern Mexico | 3 |
| HIST 4803 | Modern Scandinavia | 3 |


| HIST 4813 | Africans and Slavery in Colonial Latin America | 3 |
| :--- | :--- | :--- |
| HIST 4883 | Health and Disease: 1500 to the Present | 3 |
| HIST 4953 | The Global 1860s | 3 |
| HIST 4973 | The Civilization of the Renaissance in Italy | 3 |
| HIST 4993 | History of the Ottoman Empire, 1300-1923 | 3 |

## Eight-Semester Degree Plan for a Bachelor of Arts in History with a Histories of Global Cultures and Societies Concentration

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| MATH 1313 Quantitative Reasoning (ACTS Equivalency $=$ MATH 1113) (Satisfies General Education Outcome 2.1) ${ }^{1}$ <br> or MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$ or any MATH course numbered higher than MATH 1203 (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| HIST 1001 Perspectives in History (Satisfies General Education Outcome 5.1) ${ }^{1}$ | 1 |  |
| Satisfies General Education Outcomes 3.2, 3.3, and 4.1: ${ }^{1}$ <br> HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) or HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency $=$ HIST 1123) | 3 |  |
| State Minimum Core-Fine Arts (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| State Minimum Core-Social Science (non-HIST) (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ |  |  |
| Satisfies General Education Outcomes 3.2, 3.3, and 4.2: ${ }^{1}$ |  |  |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123) |  |  |
| Foundations in History Electives |  |  |
| State Minimum Core-Humanities |  |  |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  |  |


| Year Total: | 16 | 16 |
| :--- | ---: | ---: |
| Second Year |  | Units <br> Spring |
| State Minimum Core-Science with corequisite lab | 4 |  |
| (Satisfies General Education Outcome 3.4) |  |  |
| HIST Electives |  |  |
| Concentration Course 1 | 3 |  |
| State Minimum Core-Social Science | 3 |  |
| General Electives | 3 |  |

3
Methods in History Electives
3
Concentration Course 2 ..... 3
General Electives ..... 6
Year Total: ..... 15 ..... 15
Any UA-Fayetteville credit hours numbered at the ..... 2
3000-level or higher
Any credit hours numbered at the 3000 -level or ..... 4higher, or any 2000-level credit hours that have acourse prerequisiteGeneral Electives6
Year Total: ..... 15 ..... 15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| HIST 4901 Applying History (Applying History) | 1 |  |
| Applications in History Electives | 3 |  |
| Any credit hours numbered at the 3000-level or <br> higher, or any 2000-level credit hours that have a | 3 |  |
| course prerequisite <br> General Electives | 8 |  |

Applications in History Electives (Satisfies General ..... 3
Education Outcomes 1.2 and 6.1) ${ }^{1}$10
Year Total: ..... 15 ..... 13
Total Units in Sequence:120
${ }^{1}$ Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu

    \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8
    
    \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWw
    \%7C1000\&sdata=ZHBCul1Vytd
\%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb! \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1h \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks $\% 3 D \& r e s e r v e d=0)$. Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## Requirements for B.A. in History with Histories of Knowledge, Belief and Vision Concentration

The following credit hour requirements must be met (refer to Degree Completion Program Policy (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/) for additional information). In addition, the Fulbright College Writing Requirement may be satisfied by completing at least three credit hours of HIST 4893, HIST 4893H, HIST 498V, or HIST 498VH with a grade of B or better. With approval of the department, students may also meet the Fulbright College Writing Requirement by submitting a substantive research paper completed in a course in the Department of History at the 3000-level or higher and earning a grade of B or better.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser.

State Minimum Core 35
Foundations in History 10
HIST 1001 Perspectives in History (Perspectives in History) or HIST 10011 Hbnors Perspectives in History
Choose three courses from the following. Courses applied to this requirement may not be used to satisfy other requirements in the major.
Choose one world civilization survey course:
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113)
HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency $=$ HIST 1123)
Choose one United States history survey course:
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
Choose one additional world civilization survey course, or one United States survey course, or one of the topical courses below:

HIST 1203 History of Football
HIST 1223 History of Business in America
HIST 1233 History of Race and Medicine
HIST 2203 History of Tomorrow: Global Visions of the Future (History of Tomorrow: Global Visions of the Future)

## HIST 2093 Animals in World History

## Methods in History

Choose one of the following courses. Courses applied to this requirement may not be used to satisfy other requirements in the major.

HIST 3013 Ancient Historians
HIST 3713 Issues in Public History
haHM8LB9\% ${ }^{2}$ CI6Mn0\%3D
HIST 3973 Historical Methods (Historical Methods)
or HIST 397:Honors Historical Methods
HIST 4693 Approaching Global History

## History Electives

Complete six credit hours in history (HIST) electives, including at least three credit hours numbered at the 3000 -level or higher. Credit hours applied to this requirement may not be used to satisfy other requirements in the major.
Concentration
Applications in History7

HIST 4901 Applying History (Applying History)
Complete at least six credit hours from the following three options. Credit hours applied to this requirement may not be used to satisfy other requirements in the major.

Up to three credit hours in HIST 491V Internship in History, or up to three credit hours from a history (HIST) course numbered at the 3000 -level or higher or equivalent approved by the department that is either part of an approved study abroad or designated servicelearning program.
HIST 4893 History Seminar or HIST 4893\#bnors History Seminar
Up to three credit hours of HIST 498V Senior Thesis/HIST 498VH Senior Thesis.
Any UA-Fayetteville credit hours numbered at the 3000 -level or ..... 5 higher

Any credit hours numbered at the 3000-level or higher, or any 10 2000-level credit hours that have a course prerequisite
General Electives
Total Hours
In consultation with an academic adviser, students are encouraged to design a program of study with both breadth and depth. All history majors are also recommended to take courses leading to a minor or additional major suited to the student's academic and career goals.

Complete 12 credit hours from the following:
HIST 3003 History of Christianity 3
HIST 3013 Ancient Historians 3
HIST 3033 Islamic Civilization 3
HIST 3073
HIST 30833
HIST 3283 U.S. Latinos and Latinas through Film 3
HIST 3293 History of Popular Culture 3
HIST $3303 \quad$ U.S. Immigration History 3
HIST 3333 LGBTQ+ Histories 3
HIST 3383 Arkansas and the Southwest ${ }^{2}$ 3
HIST 3393 The Ozarks: People, Place, and Time 3

| HIST 3433 | Twentieth Century Britain through Film | 3 |
| :---: | :---: | :---: |
| HIST 3593 | The 1960s: A World Transformed | 3 |
| HIST 3623 | Black Movements and Messiahs | 3 |
| HIST 3683 | Europe in the 19th Century | 3 |
| HIST 3693 | Europe in the 20th Century | 3 |
| HIST 3703 |  | 3 |
| HIST 3713 | Issues in Public History | 3 |
| HIST 3963 |  | 3 |
| HIST 4043 | Late Antiquity and the Early Middle Ages | 3 |
| HIST 4053 | Late Middle Ages | 3 |
| HIST 4073 | Renaissance and Reformation, 1300-1600 | 3 |
| HIST 4083 | Early Modern Europe, 1600-1800 | 3 |
| HIST 4093 |  | 3 |
| HIST 4103 | Byzantine Empire | 3 |
| HIST 4113 | Archaic Greece | 3 |
| HIST 4143 | Intellectual History of Europe Since the Enlightenment | 3 |
| HIST 4183 | Great Britain, 1707-1901 | 3 |
| HIST 4243 |  | 3 |
| HIST 4323 | Wars of Religion: From the Crusades to 9/11 | 3 |
| HIST 4333 | Modern Islamic Thought | 3 |
| HIST 4393 | Early Modern Islamic Empires, 1300-1750 | 3 |
| HIST 4403 | Islam in Asia | 3 |
| HIST 4413 | New Women in the Middle East | 3 |
| HIST 4433 | Social and Cultural History of the Modern Middle East | 3 |
| HIST 4473 |  | 3 |
| HIST 4483 |  | 3 |
| HIST 4563 | The Old South, 1607-1865 | 3 |
| HIST 4573 | The New South, 1860 to the Present | 3 |
| HIST 4583 | Arkansas in the Nation ${ }^{2}$ | 3 |
| HIST 4643 | Early American Republic, 1789-1828 | 3 |
| HIST 4653 | Antebellum America, 1828-1850 | 3 |
| HIST 4693 | Approaching Global History | 3 |
| HIST 4713 | Women, Gender, and Sexuality in Colonial Latin America | 3 |
| HIST 4823 | Black Freedom in the Age of Emancipation | 3 |
| HIST 4863 | From Hiroshima to Fukushima: Nuclear Security in Asia | 3 |
| HIST 4883 | Health and Disease: 1500 to the Present | 3 |
| HIST 4973 | The Civilization of the Renaissance in Italy | 3 |

${ }^{2}$ Students may not receive credit for both HIST 3383 and HIST 4583.

## Eight-Semester Degree Plan for a Bachelor of Arts in History with a Histories of Knowledge, Belief, and Vision Concentration

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are
met, students may substitute with general electives in consultation with their academic advisor.

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| MATH 1313 Quantitative Reasoning (ACTS Equivalency $=$ MATH 1113) (Satisfies General Education Outcome 2.1) ${ }^{1}$ <br> or MATH 1203 College Algebra (ACTS <br> Equivalency $=$ MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$ <br> or any MATH course numbered higher than MATH 1203 (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| HIST 1001 Perspectives in History (Satisfies General Education Outcome 5.1) | 1 |  |
| Satisfies General Education Outcomes 3.2, 3.3, and $4.1:^{1}$ <br> HIST 1113 Institutions and Ideas of World <br> Civilizations I (ACTS Equivalency = HIST 1113) <br> or HIST 1123 Institutions and Ideas of World <br> Civilizations II (ACTS Equivalency = HIST 1123) | 3 |  |
| State Minimum Core-Fine Arts (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| State Minimum Core-Social Science (non-HIST) | 3 |  |

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

(Satisfies General Education Outcome 3.4) ${ }^{1}$
HIST Electives
Concentration Course 1 ..... 3
State Minimum Core-Social Science ..... 3
General Electives ..... 2
Methods in History Electives3
Concentration Course 2 ..... 3
General Electives

Year Total:

| Third Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Concentration Course 3 | 3 |  |
| Any UA-Fayetteville credit hours numbered at the 3000-level or higher | 3 |  |
| Any credit hours numbered at the 3000 -level or higher, or any 2000-level credit hours that have a course prerequisite | 3 |  |
| General Electives | 6 |  |
| Concentration Course 4 |  | 3 |
| Any UA-Fayetteville credit hours numbered at the 3000-level or higher |  | 2 |
| Any credit hours numbered at the 3000 -level or higher, or any 2000-level credit hours that have a course prerequisite |  | 4 |
| General Electives |  | 6 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| HIST 4901 Applying History (Applying History) | 1 |  |
| Applications in History Electives | 3 |  |
| Any credit hours numbered at the 3000 -level or higher, or any 2000-level credit hours that have a course prerequisite | 3 |  |
| General Electives | 8 |  |
| Applications in History Electives (Satisfies General Education Outcomes 1.2 and 6.1) ${ }^{1}$ |  | 3 |
| General Electives |  | 10 |
| Year Total: | 15 | 13 |

15 Requirements for B.A. in History with Histories of Statemaking and the Limits of Power Concentration
The following credit hour requirements must be met (refer to Degree Completion Program Policy (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/) for additional information). In addition, the Fulbright College Writing Requirement may be satisfied by completing at least three credit hours of HIST 4893, HIST 4893H, HIST 498V, or HIST 498VH with a grade of B or better. With approval of the department, students may also meet the Fulbright College Writing Requirement by submitting a substantive research paper completed in a course in the Department of History at the 3000-level or higher and earning a grade of $B$ or better.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser.

State Minimum Core 35

## Foundations in History

HIST 1001 Perspectives in History (Perspectives in History) or HIST 10011 Hb nors Perspectives in History
Choose three courses from the following. Courses applied to this requirement may not be used to satisfy other requirements in the major.
Choose one world civilization survey course:

| HIST 1113 | Institutions and Ideas of World Civilizations I <br> (ACTS Equivalency = HIST 1113) |
| :---: | :--- |
| HIST 1123 | Institutions and Ideas of World Civilizations II <br> (ACTS Equivalency = HIST 1123) |
| Choose one United States history survey course: |  |

Choose one additional world civilization survey course, or one United
States survey course, or one of the topical courses below:

| HIST 1203 | History of Football |
| :--- | :--- |
| HIST 1223 | History of Business in America |

## Methods in History

Choose one of the following courses. Courses applied to this requirement may not be used to satisfy other requirements in the major. major.
${ }^{1}$ Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb. \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1. \%7C1000\&sdata=ZHBCul1Vytd \%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu
\%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cbboqaifu 3 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haIN/wil Cix MI/r.anAncion \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks $\% 3 D \& r e s e r v e d=0)$. Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

HIST 3713 Issues in Public History
HIST 3963
HIST 3973 Historical Methods (Historical Methods) or HIST 397:Honors Historical Methods
HIST 4693 Approaching Global History
History Electives

Complete six credit hours in history (HIST) electives, including at least three credit hours numbered at the 3000-level or higher. Credit hours applied to this requirement may not be used to satisfy other requirements in the major.
Concentration

Applications in History
7
HIST 4901 Applying History (Applying History)
Complete at least six credit hours from the following three options. Credit hours applied to this requirement may not be used to satisfy other requirements in the major.

Up to three credit hours in HIST 491V Internship in History, or up to three credit hours from a history (HIST) course numbered at the 3000-level or higher or equivalent approved by the department that is either part of an approved study abroad or designated servicelearning program.
HIST 4893 History Seminar
or HIST 4893\#tbnors History Seminar
Up to three credit hours of HIST 498V Senior Thesis/HIST 498VH Senior Thesis.
Any UA-Fayetteville credit hours numbered at the 3000-level or 5

## higher

Any credit hours numbered at the 3000-level or higher, or any 10
2000-level credit hours that have a course prerequisite
General Electives

## Total Hours

In consultation with an academic adviser, students are encouraged to design a program of study with both breadth and depth. All history majors are also recommended to take courses leading to a minor or additional major suited to the student's academic and career goals.

## Concentration Requirements:

Complete 12 credit hours from the following:

| HIST 3043 | History of the Modern Middle East | 3 |
| :---: | :---: | :---: |
| HIST 3063 | Military History | 3 |
| HIST 3093 | Women in U.S. History | 3 |
| HIST 3103 | European Integration and Globalization | 3 |
| HIST 3193 | The Making of the Modern Caribbean | 3 |
| HIST 3213 | Modern Latin America | 3 |
| HIST 3233 | African American History to 1877 | 3 |
| HIST 3243 | African American History Since 1877 | 3 |
| HIST 3263 | History of the American Indian | 3 |
| HIST 3273 | Agricultural and Rural History of the United States | 3 |
| HIST 3283 | U.S. Latinos and Latinas through Film | 3 |
| HIST 3303 | U.S. Immigration History | 3 |
| HIST 3313 | Latinos and Latinas in the U.S. | 3 |
| HIST 3323 | The West of the Imagination | 3 |
| HIST 3383 | Arkansas and the Southwest ${ }^{2}$ | 3 |
| HIST 3423 | British History, 1688-Present | 3 |
| HIST 3443 | Modern Imperialism | 3 |
| HIST 3453 | Modern Terrorism | 3 |
| HIST 3473 | Palestine and Israel in Modern Times | 3 |
| HIST 3523 | Modern China | 3 |
| HIST 3543 | Russia to 1861 | 3 |


| HIST 3553 | Russia Since 1861 | 3 |
| :---: | :---: | :---: |
| HIST 3583 | The United States and Vietnam, 1945-1975 | 3 |
| HIST 3603 | Colonial and Revolutionary America, 1600-1789 | 3 |
| HIST 3613 | Early National and Antebellum America, 1789-1850 | 3 |
| HIST 3633 | Modern Japan | 3 |
| HIST 3683 | Europe in the 19th Century | 3 |
| HIST 3703 |  | 3 |
| HIST 3763 | History of Central Asia | 3 |
| HIST 3883 | Modern Italy and the World, 1861-Present | 3 |
| HIST 4003 | Democratic Athens | 3 |
| HIST 4023 | Roman Republic | 3 |
| HIST 4033 | Roman Empire | 3 |
| HIST 4113 | Archaic Greece | 3 |
| HIST 4193 | Great Britain, 1901-2001 | 3 |
| HIST 4213 | The Era of the French Revolution | 3 |
| HIST 4223 | France Since 1815 | 3 |
| HIST 4243 |  | 3 |
| HIST 4253 | Germany, 1918-1945 | 3 |
| HIST 4263 | Modern Africa | 3 |
| HIST 4363 | The Middle East since 1914 | 3 |
| HIST 4463 | The American Frontier | 3 |
| HIST 4503 | History of Political Parties in the United States, 1789-1896 | 3 |
| HIST 4513 | History of Political Parties in the United States Since 1896 | 3 |
| HIST 4563 | The Old South, 1607-1865 | 3 |
| HIST 4573 | The New South, 1860 to the Present | 3 |
| HIST 4583 | Arkansas in the Nation ${ }^{2}$ | 3 |
| HIST 4603 | U.S. Labor History to 1877 | 3 |
| HIST 4613 | Colonial America 1600-1763 | 3 |
| HIST 4623 | Revolutionary America, 1763 to 1789 | 3 |
| HIST 4643 | Early American Republic, 1789-1828 | 3 |
| HIST 4653 | Antebellum America, 1828-1850 | 3 |
| HIST 4663 | Rebellion to Reconstruction, 1850-1877 | 3 |
| HIST 4673 | The American Civil War | 3 |
| HIST 4703 | Emergence of Modern America, 1876-1917 | 3 |
| HIST 4733 | Recent America, 1941 to the Present | 3 |
| HIST 4743 | The Cold War in Latin America: Revolutions, Violence, and Politics | 3 |
| HIST 4753 |  | 3 |
| HIST 4763 | Diplomatic History of the United States, 1900-1945 | 3 |
| HIST 4773 | Diplomatic History of the US, 1945 to Present | 3 |
| HIST 4783 | History of Modern Mexico | 3 |
| HIST 4793 | Colonial India, 1758-1948 | 3 |
| HIST 4813 | Africans and Slavery in Colonial Latin America | 3 |
| HIST 4873 | Germany since 1945 | 3 |
| HIST 4943 | U.S. Labor History, from 1877-present | 3 |
| HIST 4953 | The Global 1860s | 3 |
| HIST 4993 | History of the Ottoman Empire, 1300-1923 | 3 |

[^5]
## Eight-Semester Degree Plan for a Bachelor of Arts in History with a Histories of Statemaking and the Limits of Power Concentration

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.
First Year
ENGL 1013 Composition I (ACTS Equivalency Units
Fall Spring= ENGL 1013) (Satisfies General Education
Outcome 1.1) ${ }^{1}$

MATH 1313 Quantitative Reasoning (ACTS3

Equivalency $=$ MATH 1113) (Satisfies General
Education Outcome 2.1) ${ }^{1}$
or MATH 1203 College Algebra (ACTS
Equivalency $=$ MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$
or any MATH course numbered higher than MATH 1203 (Satisfies General Education Outcome 2.1) ${ }^{1}$
HIST 1001 Perspectives in History (Satisfies
General Education Outcome 5.1) ${ }^{1}$
Satisfies General Education Outcomes 3.2, 3.3,
and 4.1: ${ }^{1}$
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) or HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
State Minimum Core-Fine Arts (Satisfies General
Education Outcome 3.1) ${ }^{1}$
State Minimum Core-Social Science (non-HIST)
(Satisfies General Education Outcome 3.3) ${ }^{1}$
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1) ${ }^{1}$
Satisfies General Education Outcomes 3.2, 3.3, and $4.2:^{1}$

HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)

Foundations in History Electives
State Minimum Core-Humanities
State Minimum Core-Science with corequisite lab
(Satisfies General Education Outcome 3.4) ${ }^{1}$
Year Total:
16

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| State Minimum Core—Science with corequisite lab | 4 |  |
| (Satisfies General Education Outcome 3.4) |  |  |
| HIST Electives | 3 |  |
| Concentration Course 1 | 3 |  |
| State Minimum Core—Social Science | 3 |  |
| General Electives | 2 |  |

Methods in History Electives 3
HIST Electives 3
Concentration Course 2 3
General Electives 6
Year Total: 15

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| Concentration Course 3 | 3 |  |
| Any UA-Fayetteville credit hours numbered at the <br> 3000-level or higher | 3 |  |
| Any credit hours numbered at the 3000-level or | 3 |  |

3
higher, or any 2000-level credit hours that have a
course prerequisite
General Electives 6
Concentration Course 4 3
Any UA-Fayetteville credit hours numbered at the 2
3000-level or higher
Any credit hours numbered at the 3000-level or 4
higher, or any 2000-level credit hours that have a course prerequisite
General Electives 6

Year Total: 15

| Fourth Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| HIST 4901 Applying History (Applying History) | 1 |  |
| Applications in History Electives | 3 |  |
| Any credit hours numbered at the 3000-level or <br> higher, or any 2000-level credit hours that have a <br> course prerequisite | 3 |  |
| General Electives | 8 |  |
| Applications in History Electives (Satisfies General <br> Education Outcomes 1.2 and 6.1) |  |  |
| General Electives <br> Year Total: |  | 15 |

Applications in History Electives (Satisfies General 3
Education Outcomes 1.2 and 6.1) ${ }^{1}$
General Electives
Total Units in Sequence: ..... 120

1 Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWv \%7C1000\&sdata=ZHBCul1Vytd
\%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and
the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3c \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik \%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks \%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## Requirements for a Minor in History

A student must notify the department of his or her intent to minor. Requirements are 18 semester hours to include the following:

| Select two of the following courses |  |
| :---: | :---: |
| HIST 1003 or HIST 100: |  |
| HIST 1113 <br> or HIST <br> or HUMN | Institutions and Ideas of World Civilizations I (ACTS Equivalency $=$ HIST 1113) <br> आ\#bnors Institutions and Ideas of World Civilizations I FHDthors Roots of Culture to 500 C.E. |
| HIST 1123 <br> or HIST <br> or HUMN | Institutions and Ideas of World Civilizations II (ACTS Equivalency $=$ HIST 1123) <br> :Honors Institutions and Ideas of World Civilizations II <br> Honors Birth of Modern Culture 1600-1900 |
| HIST 1203 | History of Football |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |
| HIST 2013 | History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123) |
| HIST 2093 | Animals in World History |

In addition, complete 12 hours of upper-level credit, at least 6 hours 12 of which must be at the 4000-level.

Total Hours
Requirements for Departmental Honors in History: The College and the Departmental Honors Programs in History provide undergraduates with an opportunity to carry out independent study and research under the guidance of history faculty and to participate in special honors courses, seminars, and colloquia. Admission to the Fulbright Honors Program is open to history majors with a minimum cumulative GPA of 3.5 in all courses. Candidates for Departmental Honors in History must complete a minimum of 12 credit hours in honors courses, including at least three hours chosen fromHIST\#3973H HIST 4893H, or HIST 498VH. To complete the required thesis, honors candidates should choose a faculty thesis director as early as possible but no later than the first semester of the student's junior year. Honors candidates must meet the college's requirements for an honors degree.\# Students graduating with honors typically graduate with the distinctioncum laude. Higher distinctions (summa\#cum laude magna\#cum laud\& are awarded by the Honors Council in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

Social Studies Teacher Licensure Requirements: Students interested in teaching Social Studies Education leading to licensure for 7-12 instruction should pursue both a BA in History and a Bachelor of Arts in Teaching (BAT) in Social Studies Education (p. 806) concurrently.

Students interested in licensure should discuss options with the Office of Teacher Education (p. 806).

## Faculty

Andrus, Edward, Ph.D., M.A. (University of Arkansas), B.A. (University of

1AntdwillaikXiaylatanessol, Ph.D. (University of Chicago), M.A. (Bilkent
University, Turkey), B.A. (American University in Bulgaria), Associate Professor, 2011, 2017.
Austin, Shawn, Ph.D., M.A. (University of New Mexico), B.A. (Brigham Young University-Idaho), Associate Professor, 2015.
Banton, Caree A., Ph.D. (Vanderbilt University), M.A. (University of Ghana), M.A. (University of New Orleans), B.A./B.P.A. (Grambling State University), Associate Professor, 2013, 2019.
Brogi, Alessandro, Ph.D. (Ohio University), Ph.D. (University of Florence, Italy), M.A. (Ohio University), B.A. (University of Florence, Italy), Professor, 2002, 2012.
Cleveland, Todd, Ph.D. (University of Minnesota), M.A., B.A. (University of New Hampshire), Professor, 2015, 2021.
Conley, Nathaniel, Ph.D. (University of Arkansas), M.A., B.A. (Arkansas State University), Instructor, 2018.
Coon, Lynda L., Ph.D., M.A. (University of Virginia), B.A. (James Madison University), Professor, 1990, 2013.
Domínguez, Freddy C., Ph.D., M.A. (Princeton University), B.A. (Brown University), Assistant Professor, 2014.
Gigantino, Jim, Ph.D. (University of Georgia), B.A. (University of Richmond), Professor, 2010, 2018.
Gordon, Joel Samuel, Ph.D. (University of Michigan-Ann Arbor), B.A. (University of Illinois), Professor, 1999, 2007.
Hammond, Kelly, Ph.D. (Georgetown University), M.A. (Simon Frazer University), B.A. (Bishop's University), Associate Professor, 2015, 2020.
Hare, J. Laurence, Ph.D., M.A. (University of North Carolina at Chapel Hill), B.A. (University of Tennessee at Chattanooga), Associate Professor, 2010, 2015.
Kizsonas, Elizabeth, Ph.D. (University of Arkansas), Th.M., M.Div. (Trinity Evangelical Divinity School), B.A. (Rutgers University), Instructor, 2020.

Muntz, Charles E., Ph.D. (Duke University), B.A. (Swarthmore College), Associate Professor, 2008, 2018.
Pierce, Michael C., Ph.D., M.A. (The Ohio State University), B.A. (Kenyon College), Associate Professor, 2001, 2011.
Robinson, Charles F., Ph.D. (University of Houston), M.A. (Rice
University), B.A. (University of Houston), Professor, 1999, 2011.
Rodriguez, Sarah, Ph.D., B.A. (University of Pennsylvania), Assistant Professor, 2016.
Rosales, Steven, Ph.D. (University of California-Irvine), B.A. (University of California-San Diego), Associate Professor, 2013, 2018.
Sloan, Kathryn Ann, Ph.D., M.A., M.B.A. (University of Kansas), B.A. (Kansas State University), Professor, 2004, 2016.
Sonn, Richard D., Ph.D., M.A. (University of California-Berkeley), B.A. (University of Michigan), Professor, 1987, 2010.
Starks, Trish, Ph.D., M.A. (The Ohio State University), B.A. (University of Missouri), Professor, 2000, 2018.
Totten, Eric P., Ph.D. (University of Arkansas), M.A., B.A. (University of Central Florida), Instructor, 2021.
Totten, Marie C., Ph.D. (University of Arkansas), M.A., B.A. (Arkansas Tech University), Instructor, 2021.
Ward, Arley R., Ph.D. (University of Arkansas), M.A. (University of Tulsa), B.A. (University of North Carolina at Greensboro), Instructor, 2021.

Whayne, Jeannie, Ph.D., M.A., B.A. (University of California-San Diego), University Professor, 1990, 2015.

White, Calvin, Ph.D. (University of Mississippi), M.A., B.A. (University of Central Arkansas), Associate Professor, 2007, 2013.
Williams, Patrick George, Ph.D., M.A. (Columbia University), B.A. (University of Texas at Austin), Professor, 1998, 2015.
Woods, Randall B., Ph.D., M.A., B.A. (University of Texas at Austin), Distinguished Professor, John A. Cooper Sr. Distinguished Professor of Diplomacy, 1971, 1995.

## Courses

HIST 1001. Perspectives in History. 1 Hour.
Introduction to the history major and to college life, emphasizing essential collegiate academic skills and the methods and techniques of the professional historian.
Designed for history majors, history minors, and those with an interest in learning skills relevant to history, other humanities, or other social sciences. (Typically offered: Irregular)

HIST 1001H. Honors Perspectives in History. 1 Hour.
Introduction to the history major and to college life, emphasizing essential collegiate academic skills and the methods and techniques of the professional historian.
Designed for history majors, history minors, and those with an interest in learning skills relevant to history, other humanities, or other social sciences. Prerequisite:
Honors standing. (Typically offered: Irregular)
This course is equivalent to HIST 1001.
HIST 1113. Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113). 3 Hours.
Introduces the major civilizations of the world in their historical context to 1500. (Typically offered: Fall and Spring)
HIST 1113H. Honors Institutions and Ideas of World Civilizations I. 3 Hours.
Study of Western and non-Western civilizations. (Typically offered: Irregular) This course is equivalent to HIST 1113.
HIST 1123. Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123). 3 Hours.
Introduces the major civilizations of the world in their historical context, since 1500. (Typically offered: Fall and Spring)

HIST 1123H. Honors Institutions and Ideas of World Civilizations II. 3 Hours.
Study of Western and non-Western civilizations. (Typically offered: Irregular) This course is equivalent to HIST 1123.

## HIST 1203. History of Football. 3 Hours.

Explores the history of football in America from its invention in the nineteenth century, through its meteoric growth in the twentieth century, to the most recent developments. Examines the ways that the game has both reflected broader social and economic trends in America, and catalyzed them. (Typically offered: Irregular)
HIST 1223. History of Business in America. 3 Hours.
Surveys the evolution of American business enterprises, with emphases on entrepreneurs, technology and corporate structures, the role of governments and markets, and the challenges these businesses faced. (Typically offered: Fall Odd Years)

## HIST 1233. History of Race and Medicine. 3 Hours.

Examines history of western biomedicine on the intersection of science, medicine, and race to trace origins of current racial disparities. Examples from the United States and other international developments. (Typically offered: Irregular) This course is cross-listed with AAST 1233.
HIST 2003. History of the American People to 1877 (ACTS Equivalency = HIST 2113). 3 Hours.

A history of American life encompassing constitutional, political, social, intellectual and economic development from prior to European colonization to 1877. (Typically offered: Fall, Spring and Summer)

HIST 2013. History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123). 3 Hours.
A history of American life encompassing constitutional, political, social, intellectual and economic development from Reconstruction to the present. (Typically offered: Fall, Spring and Summer)

## HIST 2093. Animals in World History. 3 Hours.

Survey of the interrelationship between human and nonhuman animals in comparative historical settings. The course is interdisciplinary by design and draws from social history, cultural studies, religious history, literature, film, and visual culture to gain a deeper sense of how animals have been integral to human societies. (Typically offered: Fall and Spring)

## HIST 2203. History of Tomorrow: Global Visions of the Future. 3 Hours.

 Survey of cultural visions of the distant future in the modern era as represented in architecture, art, literature, popular culture, and religious practice. Emphasis on the articulation of future vision in the context of cross-cultural encounters, conflict and war, globalization, modernization, and technological development. (Typically offered: Irregular)HIST 3003. History of Christianity. 3 Hours.
This course surveys the theological, political, and cultural history of Mediterranean Christianity, c. 30-600 CE. Special topics include patristics, Christianity and Empire, and the formation of Christian sacred space. (Typically offered: Irregular)

## HIST 3013. Ancient Historians. 3 Hours.

Survey of ancient historiography from Herodotus (5th c BCE) to Ammianus Marcellinus (4th c CE). Topics covered include the development of ancient history, historical causality, rhetoric and history, military history, historical biography, use of polemic, Roman adaptations of Greek models, and the portrayal of the "other" in history. (Typically offered: Fall)

## HIST 3033. Islamic Civilization. 3 Hours.

A survey of the foundation, evolution, and distinctive character of Islam, with attention to religion, literature, art, architecture, science, and political society. Particular attention given to the development of Islamic doctrines, sectarian movements, and systematic theology. Concludes with a look at Islamic resurgence movements and their place in the contemporary world. (Typically offered: Irregular)

## HIST 3043. History of the Modern Middle East. 3 Hours.

Examines the history of the Islamic Middle East from the rise of the Ottoman and Safavid Persian empires up to World War I and then concludes with the issues and patterns of 20th century Middle Eastern political and socio-economic life. Topics include Islam and politics, Arab nationalism, Western imperialism, the Arab-Zionist conflict, petroleum politics, and modernization vs. traditionalism. (Typically offered: Irregular)

## HIST 3063. Military History. 3 Hours.

Survey of the basic principles and problems of strategy, tactics, and military organization from Alexander the Great to the present. Special attention will be given to the operation of these factors in the American Revolution, the Napoleonic Wars, the American Civil War, and World War II. (Typically offered: Irregular)

## HIST 3093. Women in U.S. History. 3 Hours.

Examines women in U.S. History from the early encounters of North American colonization to the gendered experiences of American women in the present day. (Typically offered: Irregular)

## HIST 3103. European Integration and Globalization. 3 Hours.

Interdisciplinary study of the cultural, economic, and political processes of modern European integration in the context of a changing relationship between Europe and the wider world during the 20th and 21st centuries. (Typically offered: Fall Even Years)
This course is cross-listed with INST 3303.

## HIST 3133. History of Sports in Africa. 3 Hours.

This course considers the ways that Africans have strategically employed sports to confront and overcome both domestic and external challenges and how these approaches and the range of constituent strategies have changed over time.
(Typically offered: Irregular)
This course is cross-listed with AAST 3133.
HIST 3193. The Making of the Modern Caribbean. 3 Hours.
History of the Caribbean from pre-Columbian to present times focusing in particular on indigenous origins, colonialism, slavery, rebellion, independence, nationalism, and political integration in the making of the modern Caribbean region. (Typically offered: Fall)
This course is cross-listed with AAST 3193.
HIST 3203. Colonial Latin America. 3 Hours.
An introduction to the social, cultural, political and economic formation of Latin
America, during the period from 1492 to the movements for independence. (Typically offered: Fall Odd Years)
This course is cross-listed with LALS 3203.
HIST 3213. Modern Latin America. 3 Hours.
An investigation of the varying courses of modernization in Latin America, covering popular revolution, urban populism and military dictatorship. (Typically offered: Spring Even Years)
This course is cross-listed with LALS 3213.

## HIST 3233. African American History to 1877. 3 Hours.

History of the African American experience in North America emphasizing economic, social, and cultural perspectives. Topics include the African slave trade, the creation of race and racism, the institution of slavery, free community formation in North, and the impact of the Civil War and Reconstruction on African Americans. (Typically offered: Fall and Spring)
This course is cross-listed with AAST 3233.

## HIST 3243. African American History Since 1877. 3 Hours.

The course will study the major social, political, and economical issues relating to the African American experience beginning with the late post-Reconstruction period and will include, all of the major personalities and influences in the Civil Rights Movement, from 1877 to the present. (Typically offered: Fall and Spring)
This course is cross-listed with AAST 3243.

## HIST 3253. The History of Sub-Saharan Africa. 3 Hours.

Sub-Saharan African history from the 18th century to the present, with emphasis on the impact of the slave trade, colonization, Independence, and contemporary issues of the post-colonial period. Examination of the ways Africans experienced change in terms of culture, society, economics, gender, religion, politics, and labor. (Typically offered: Fall)
This course is cross-listed with AAST 3253.
HIST 3263. History of the American Indian. 3 Hours.
Survey of North American Indian history from their arrival include pre-Columbian Indian history, the interaction of Indian and white societies, U.S. Government policy, and the role of Indians in modern American culture. (Typically offered: Fall)

HIST 3273. Agricultural and Rural History of the United States. 3 Hours.
The history of U.S. agriculture from the pre-Columbian period through the twentyfirst century. Focuses on the social and economic implications of agricultural development and the changing nature of rural life in the late twentieth century. (Typically offered: Irregular)

## HIST 3283. U.S. Latinos and Latinas through Film. 3 Hours.

This course will examine the portrayal of U.S. Latinos and Latinas in Hollywood films and how those images have changed over time. While coverage will extend to the early years of the twentieth century, the chosen films will place particular emphasis on the century's second half, from the Cold War to the modern day. (Typically offered: Spring)
This course is cross-listed with COMM 3283, LALS 3283.

HIST 3293. History of Popular Culture. 3 Hours.
Historical survey of the popular arts in American with emphasis upon 20th century. Principal topics are the history of bestsellers, the theatre, popular music, movies, radio, television, and sports. (Typically offered: Irregular)

## HIST 3303. U.S. Immigration History. 3 Hours.

Examines the migration of ethnic groups into the United States from geographical areas that include Europe, Asia, Africa, and Latin America. Special emphasis will be given to cultural history, and will trace the impact of industrialization, urbanization, class formation, and popular culture on various ethnic groups. (Typically offered: Irregular)
This course is cross-listed with LALS 3303.

## HIST 3313. Latinos and Latinas in the U.S.. 3 Hours.

Examines the emergence and growth of the Latino population of the United States. A broad survey of the Latino experience will complement more specific case studies focusing on cultural identity and the generational process of acculturation into the American mainstream. (Typically offered: Fall)
This course is cross-listed with LALS 3313.
HIST 3323. The West of the Imagination. 3 Hours.
The changing image of the American West from the colonial period to the present and how popular impressions have reflected national attitudes and values. Special attention given to the West's portrayal in folklore, literature, art, films, and television. (Typically offered: Irregular)

## HIST 3333. LGBTQ+ Histories. 3 Hours.

How have gender and sexuality conceptions changed from the sixteenth century to the present? Who defined which sexual practices were deviant, when and why did those ideas transform? When and why did the terms lesbian, gay, bisexual, transgender, queer, and intersex arise, and become linked? (Typically offered: Irregular)

## HIST 3363. The Atlantic World, 1400-1850. 3 Hours.

Explores the political, economic, cultural, and social engagement of Africans, Europeans, and Native Americans across the Atlantic from 1400 to 1850. It uses a comparative lens to understand how interactions between Europe, Africa, and the Americas created enduring ties throughout the Atlantic Basin. (Typically offered: Irregular)

## HIST 3373. Rise of the American Empire: War, Migration and Expansion, 1789-1917. 3 Hours.

Explores the history of U.S. expansion and imperialism from the nation's founding to the start of World War I. It proceeds both chronologically and thematically, considering the evolution of U.S. imperialism and its various manifestations territorial, political, economic, and cultural. (Typically offered: Irregular) This course is cross-listed with LALS 3373.

## HIST 3383. Arkansas and the Southwest. 3 Hours.

Political, economic, social, and cultural development of Arkansas from the coming of the Indian to the 20th century, with special emphasis on Arkansas as a national and regional component. (Typically offered: Fall, Spring and Summer)

HIST 3393. The Ozarks: People, Place, and Time. 3 Hours.
Study of the histories, cultures, literature, and economics of the Ozark region of the United States from the late 18th century until the present. (Typically offered: Irregular)

## HIST 3423. British History, 1688-Present. 3 Hours.

A survey of British history from the Glorious Revolution of 1688 to the Present, covering the political, social, cultural, and military history of Britain during those years. (Typically offered: Irregular)
HIST 3433. Twentieth Century Britain through Film. 3 Hours. Explores 20th Century British History through the medium of film, analyzing how 20th Century British history has been represented/misrepresented in film, and investigating what these portrayals of Britain in the twentieth century reveal about British history. (Typically offered: Irregular)

HIST 3443. Modern Imperialism. 3 Hours.
Examines the causes, nature, and consequences of modern imperialism. The histories of five different empires are studied and compared to give an overview of the phenomenon. (Typically offered: Irregular)

## HIST 3453. Modern Terrorism. 3 Hours.

Examines the historical foundations and course of modern terrorism, from the French Revolution to the present. Special attention is given to the Irish Republican Army, Baader Meinhoff Gang (Red Army Faction), the American militia movement, and al-Qaeda. (Typically offered: Irregular)

HIST 3473. Palestine and Israel in Modern Times. 3 Hours.
History of 19th-20th Century Palestine, Zionism and the founding of modern Israel, and the Palestine-Israel conflict in local and regional perspective. (Typically offered: Irregular)

## HIST 3523. Modern China. 3 Hours.

Survey of Chinese culture, society, government and diplomacy between1644 and the present. (Typically offered: Spring)

## HIST 3533. World War II. 3 Hours.

Study of the causes, conduct and consequences of the Second World War.

## (Typically offered: Spring)

This course is cross-listed with AIST 3533.

## HIST 3543. Russia to 1861. 3 Hours.

Study of the political, social and cultural development of Russia from the Kievan era through the Napoleonic invasion. (Typically offered: Fall)

## HIST 3553. Russia Since 1861. 3 Hours.

Survey of political, cultural and intellectual trends in modern Russia with emphasis upon the Revolutions of 1917, the Soviet Union, and its successor states. (Typically offered: Spring)

## HIST 3573. World War I. 3 Hours.

Explores the Great War's origins, major and minor battles, the role of technology, and the experience of soldiers. Examines the internal conflicts the war created, the ideologies it spawned, and the social relationships it permanently altered. (Typically offered: Irregular)

## HIST 3583. The United States and Vietnam, 1945-1975. 3 Hours.

A survey and analysis of the Vietnam War with special emphasis on its impact on American and Indochinese society. (Typically offered: Fall)

## HIST 3593. The 1960s: A World Transformed. 3 Hours.

The tumultuous decade of the 1960s witnessed global political, social and cultural upheavals. We will study movements for change in the United States, as well as in Europe, China, Vietnam, and Latin American. Topics will include the New Left, the counterculture, and the student, civil rights, antiwar and women's movements. (Typically offered: Spring Odd Years)

## HIST 3603. Colonial and Revolutionary America, 1600-1789. 3 Hours.

Survey of colonial and revolutionary American history, emphasizing economic, social, and cultural perspectives. Topics include historical interpretations of Native American, French, Spanish, English, Dutch, and Russian interactions in North America as well as the causes of the American Revolution and formation of the new national government. (Typically offered: Irregular)

## HIST 3613. Early National and Antebellum America, 1789-1850. 3 Hours.

Survey of early national and antebellum America emphasizing economic, social, and cultural perspectives. Topics include the impact of westward expansion, slavery, religion, gender, the market economy, and political developments on the new nation. (Typically offered: Irregular)

## HIST 3623. Black Movements and Messiahs. 3 Hours.

This course will focus on global African history since the Age of Revolutions to the present with special attention to the movements and leaders in various fields who proposed strategies and led movements to advance Africa, Africans and the diaspora. (Typically offered: Irregular)

## HIST 3633. Modern Japan. 3 Hours.

Examines the dramatic changes in Japan from the nineteenth century to the twentyfirst century in a global, historical perspective. Through the lenses of imperialism and war, society and gender, and technology and environment, students will develop an understanding of Japan's place in our modern world. (Typically offered: Fall Odd Years)
This course is cross-listed with AIST 3633.
HIST 3683. Europe in the 19th Century. 3 Hours.
Examines the political, social, and cultural history of Europe during the "long" nineteenth century from the French Revolution of 1789 to the outbreak of the First World War in 1914. (Typically offered: Irregular)
HIST 3693. Europe in the 20th Century. 3 Hours.
Examines the political, social, and cultural history of Europe during the twentieth century from the outbreak of the First World War to the collapse of Communist states in Eastern Europe in 1989. (Typically offered: Irregular)

## HIST 3713. Issues in Public History. 3 Hours.

Contemporary theory and practice of public history. Discussion of the historian's role in the public sphere, the relationship between history and memory, and the professional opportunities in the field. (Typically offered: Irregular)

## HIST 3763. History of Central Asia. 3 Hours.

History of Central Asia from antiquity to modern age, including Alexander's conquests, the formation of the Silk Road, the rise of the pre-Islamic Turkic politics, the coming of Islam, the steppe empires of the Chinggisids and the Timurids, and modern age of Russian/Soviet and Chinese imperial and communist-era dominance. (Typically offered: Irregular)

## HIST 3883. Modern Italy and the World, 1861-Present. 3 Hours.

A survey analyzing Italy from unification (Risorgimento of the 1800s) to the present. While focusing on the history of the country in its multifaceted aspects, the course also offers a comparative approach, helping students analyze Italy in the context of European integration and major international developments. (Typically offered: Irregular)

## HIST 3923H. Honors Colloquium. 3 Hours.

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in history). (Typically offered: Irregular) May be repeated for degree credit.

## HIST 3973. Historical Methods. 3 Hours.

Practical introduction to historical research and writing. Examines research methods and current theories of interpreting and evaluating the past. Prepares students for thesis development and writing. Prerequisite: Students must be a history major. (Typically offered: Fall)

## HIST 3973H. Honors Historical Methods. 3 Hours.

Practical introduction to historical research and writing. Examines research methods and current theories of interpreting and evaluating the past. Prepares students for honors thesis development and writing. Prerequisite: Honors standing and a history major. (Typically offered: Fall)
This course is equivalent to HIST 3973.
HIST 398V. Special Topics. 1-6 Hour.
Historical topics which are not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## HIST 398VH. Honors Special Topics. 1-3 Hour.

Historical topics which are not usually presented in depth in regular courses. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to HIST 398 V .

HIST 4003. Democratic Athens. 3 Hours.
History of the Athens from the sixth century BCE to the end of the fourth. Topics include origins and evolution of democracy, the Persian wars, the rise and fall of the Athenian Empire, and the development of historiography, literature, art, and philosophy during the period. (Typically offered: Irregular)

## HIST 4013. Alexander the Great and the Hellenistic World. 3 Hours.

A survey of the achievements of Alexander and the culture of the new world he created. The personality and career of Alexander are examined as well as the rich diversity of the Hellenistic world: trade with India, religious syncretism, and the development of Hellenistic science and philosophy. (Typically offered: Irregular)

## HIST 4023. Roman Republic. 3 Hours.

History of Rome from its origins in the eighth century BCE to the fall of the Republic in the first century BCE. Topics include the sources for Roman history, the development, functioning, and ultimate failure of republican government, the Roman army, and Roman imperialism in Italy and the Mediterranean. (Typically offered: Irregular)

## HIST 4033. Roman Empire. 3 Hours.

History of Rome from the Emperor Augustus to Constantine, ca. 30 BCE - 337 CE. Topics include the sources for imperial Rome, the organization of imperial government, the provinces of Rome and provincial government, art and literature under the empire, the rise of Christianity, and the conversion of the Empire. (Typically offered: Irregular)

HIST 4043. Late Antiquity and the Early Middle Ages. 3 Hours.
This course examines the political, spiritual, intellectual, and social-economic developments of European history, c. 300-1000 CE. Special topics include the Christianization of the late Roman Empire and Byzantium, as well as the formation of Celtic and Germanic Kingdoms in the West. (Typically offered: Fall Even Years)

## HIST 4053. Late Middle Ages. 3 Hours.

This course examines the political, social-economic, intellectual, and spiritual developments of European history, c. 1000-1400 CE. Special topics include monasticism, sacral kingship, the crusades, and the medieval university. (Typically offered: Spring Odd Years)

HIST 406V. Independent Study. 1-6 Hour.
Study Abroad project; other special topics for independent study. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## HIST 4073. Renaissance and Reformation, 1300-1600. 3 Hours.

Examines the history of Europe from the end of the Middle Ages through the Renaissance to the Reformation and Counter-Reformation. Special attention is paid to changes in popular piety, political thought, religious representation, and the discovery of the New World. (Typically offered: Fall Odd Years)

## HIST 4083. Early Modern Europe, 1600-1800. 3 Hours.

Begins with the upheaval of the reformation, moves through the crisis of the 17th century and culminates with the democratic revolution of the 18th century. Examines the consolidation of the European state system, the propagation of modern science, discovery of overseas worlds, and the advent of the Industrial Revolution. (Typically offered: Spring Even Years)

## HIST 4103. Byzantine Empire. 3 Hours.

Examines the history and culture of the Byzantine Empire from the reign of Constantine I to the fall of Constantinople in 1453. Topics include the development of Christianity and the schism with the western church, the crusades, and Byzantine influence on Islam, Russia, the Ottomans, and the Renaissance. (Typically offered: Irregular)

HIST 4113. Archaic Greece. 3 Hours.
History of Greece from the late Bronze Age to the end of the Persian Wars. This class will focus particularly on the sources involved with reconstructing early Greek history, especially Herodotus and Homer, on the development of the Greek city-state or polis, and on the interaction between the Greeks and Near-eastern civilizations during this period, culminating in the wars between the Greeks and the Persian Empire. (Typically offered: Irregular)

## HIST 4123. Africa and the Trans-Atlantic Slave Trade. 3 Hours.

Examines the trans-Atlantic slave trade with a primary focus on the role of Africa and Africans in creating the unique economy and culture of the trans-Atlantic world. (Typically offered: Irregular)
This course is cross-listed with AAST 4123.
HIST 4133. Society and Gender in Modern Europe. 3 Hours.
Changing values and attitudes toward childhood, family life, sexuality, and gender roles in Europe from the Renaissance to the present. The social impact of the Industrial Revolution, urbanization, demographic change, and the two world wars. (Typically offered: Spring Odd Years)
HIST 4143. Intellectual History of Europe Since the Enlightenment. 3 Hours. A survey of the major developments in European thought and culture since the emergence of Romanticism. Topics include Romanticism, Darwinism, Marxism, and Modernism. (Typically offered: Fall Even Years)

## HIST 4163. Tudor-Stuart England, 1485-1714. 3 Hours.

Examines the history of the British Isles from the ascension of Henry VII and the Tudor dynasty until the close of the Stuart Era in 1714. Special attention is given to the English Reformation, the Elizabethan years, the 17th Century Revolutions, and the birth of an overseas Empire. (Typically offered: Fall Odd Years)

## HIST 4173. The Latin American City. 3 Hours.

This course examines the social, political, and cultural aspects of the modern Latin American city from an interdisciplinary perspective. The course includes an introduction to urban studies concepts, and each semester is organized around a specific set of case studies. (Typically offered: Irregular)

HIST 4183. Great Britain, 1707-1901. 3 Hours.
Examines the history of the British Isles from the 1707 Act of Union between Scotland and England until the death of Queen Victoria in 1901. Special attention is given to the spread of Empire, industrialization, and the political, social, and cultural aspects of the Georgian and Victorian Eras. (Typically offered: Fall Even Years)

## HIST 4193. Great Britain,1901-2001. 3 Hours.

Examines the history of the British Isles from the death of Queen Victoria in 1901 to the reelection of Prime Minister Tony Blair in 2001. Special attention is given to the collapse of the British Empire, the birth of the welfare state, and the challenges inherent in the decline of British world power. (Typically offered: Spring Odd Years)

## HIST 4203. History of the Holocaust. 3 Hours.

Examines the origins, history, and legacies of the European Holocaust. Traces the origins of anti-Semitism in Europe, the rise of Nazism in Germany, the path to genocide during World War II, and the role of victims, perpetrators, rescuers, and bystanders. Considers issues of memory and justice in the postwar era. (Typically offered: Irregular)

## HIST 4213. The Era of the French Revolution. 3 Hours.

France from the salons of the Enlightenment to the Napoleonic Wars. The French Revolution will be explored in terms of politics and personalities, ideas and symbols, class and gender relations, and violence and terror. (Typically offered: Fall Odd Years)

## HIST 4223. France Since 1815. 3 Hours.

Survey of French history from the overthrow of Napoleon to the 5th Republic, with emphasis on French politics, society, and culture. (Typically offered: Spring Even Years)

HIST 4253. Germany, 1918-1945. 3 Hours.
Study of German history from advent of the Weimar Republic to the end of the Third Reich with emphasis upon the failure of democratic government in the 1920s and the rise and fall of the National Socialist dictatorship. (Typically offered: Irregular)

## HIST 4263. Modern Africa. 3 Hours.

Examines the last half-century of Africa's history, focusing on the last few decades. Introduction of Africa's colonial past, revolutions and struggles for independence. Review of African development in the post-colonial and contemporary era, successes and failures of independent Africa, and the challenges the continent faces today. (Typically offered: Irregular)
This course is cross-listed with AAST 4263.

## HIST 4303. Transatlantic Relations, 1919-Present. 3 Hours.

US-Western European Relations, from the Wilsonian era to the present, covering strategic, economic, and cultural aspects. (Typically offered: Irregular)

HIST 4323. Wars of Religion: From the Crusades to 9/11. 3 Hours.
Examines the place of religion in combat across the centuries. A case study approach is used to explore different conflicts from the twelfth century crusades against Muslim forces to $9 / 11$. Investigates how religious motivations may or may not be related to other political, social, cultural, economic concerns. (Typically offered: Irregular)

## HIST 4333. Modern Islamic Thought. 3 Hours.

Main currents in Islamic theology and political philosophy from the Ottoman Empire to the end of the twentieth century. (Typically offered: Irregular)
HIST 4343. Golden Age Portugal and Spain. 3 Hours.
This course will examine the diverging and converging paths of Portugal and Spain during the early modern period (15th-17th centuries). We will chart their rise as global imperial powers and their initial declines. We'll explore the political, social, and religious contexts in which Golden Age Iberia flourished. (Typically offered: Spring Even Years)
HIST 4363. The Middle East since 1914. 3 Hours.
Middle East since 1914 addresses European colonialism, the rise of new social elites, independence, revolution, globalization, economic self-determination, persistent regional conflicts and ongoing battles over "cultural authenticity". (Typically offered: Irregular)

## HIST 4383. The American Civil Rights Movement. 3 Hours.

Introduction to the history and development of the civil rights movement in the United States. (Typically offered: Irregular)
This course is cross-listed with AAST 4383.

## HIST 4393. Early Modern Islamic Empires, 1300-1750. 3 Hours.

An examination of the historical development of the three great Islamic empires in the early modern period- the Ottomans, the Safavids of Iran, and the Mughals of India. Special attention given to imperial expansion, administrative structures, religious-legal establishment, and the formation of distinct traditions in political ideology, historiography, and the arts and sciences. (Typically offered: Spring Even Years)

## HIST 4403. Islam in Asia. 3 Hours.

Introduces students to the history of Islam in East and Southeast Asia over the past 1,200 years. It focuses on the 18th-21st centuries when Muslims were part of everyday life in Asia and participated in the formation of majority and minority identities in the region. (Typically offered: Irregular)
This course is cross-listed with AIST 4403.

## HIST 4413. New Women in the Middle East. 3 Hours.

This course covers the transformation of social and cultural roles of women in the Middle East since the 19th Century. Emphases include political emancipation, religious reformation, artistic representation, and gendered re-definition. (Typically offered: Irregular)

HIST 4433. Social and Cultural History of the Modern Middle East. 3 Hours. An analysis of Middle East history in the 17th-20th centuries which focuses on the social transformation of urban and rural life. Particular emphasis is given to the roles of economics, genealogy, art, and popular culture. (Typically offered: Irregular)

HIST 4443. Frontiers and Borderlands in Colonial Latin America. 3 Hours. This course examines frontiers and borderlands in colonial Latin America and focuses on the regions of California, New Mexico, Texas, Brazil, and the Río de la Plata. It demonstrates that frontiers and borderlands are defined by the absence of a hegemonic European power and associated with the prevalence of Indigenous norms. (Typically offered: Irregular)
This course is cross-listed with LALS 4443.
HIST 4463. The American Frontier. 3 Hours.
American westward expansion and its influence on national institutions and character. Emphasis on the pioneer family and the frontier's role in shaping American society, culture, economy, and politics. Topics include exploration, the fur trade, the cattle kingdom and the mining, farming, and military frontiers. (Typically offered: Fall Odd Years)

## HIST 4493. Religion in America to 1860. 3 Hours.

History of religion in early America, primarily from a social and cultural perspective. Topics will include region, social class, growth of institutions, slavery, print culture, and social reform in traditions including Protestantism, West African religion, Catholicism, Native American religion, and Judaism. (Typically offered: Irregular)

HIST 4503. History of Political Parties in the United States, 1789-1896. 3 Hours.
Origin and development of the American party system from the implementation of the constitution to the election of McKinley. (Typically offered: Fall Even Years) This course is cross-listed with PLSC 4303.

HIST 4513. History of Political Parties in the United States Since 1896. 3 Hours.
Response of the party system to America's emergence as an industrial nation and world power from the election of 1896 to present. (Typically offered: Spring Odd Years)
This course is cross-listed with PLSC 4313.
HIST 4563. The Old South, 1607-1865. 3 Hours.
Survey of the political, social, and economic development of the antebellum South. (Typically offered: Irregular)
This course is cross-listed with AAST 4563.
HIST 4573. The New South, 1860 to the Present. 3 Hours.
Survey of the development of the Civil War and postwar South to the present. (Typically offered: Irregular)
This course is cross-listed with AAST 4573.
HIST 4583. Arkansas in the Nation. 3 Hours.
Designed to provide advanced undergraduate and graduate students with a comprehensive understanding of the full sweep of Arkansas history. The focus will be on social, economic and political history, and historiography. (Typically offered: Irregular)

## HIST 4593. The Colonial French in the Mississippi Valley. 3 Hours.

This course focuses on the French Colonial Mississippi Valley from 1698 until 1763. Activities for both French and non-French speaking students provide a rich environment to discuss encounters, subsistence strategies, and warfare faced by native peoples, missionaries, explorers, and colonists alike. Students will examine primary handwritten, transcribed, or translated sources. (Typically offered: Spring)

## HIST 4603. U.S. Labor History to 1877. 3 Hours.

Examines the changing nature of work in U.S. history from 1607 until 1877 including the ways that workers--individually and collectively-- understand the meanings of their labor and to the ways that notions of class, gender, ethnicity, and race inform these understandings. (Typically offered: Irregular)

HIST 4613. Colonial America 1600-1763. 3 Hours.
History of colonial America from 1600 to the end of the Seven Years War emphasizing economic, social, and cultural perspectives. Topics include Native American, French, Spanish, English, Dutch, and Russian interactions in North America and the larger Atlantic World. (Typically offered: Irregular)

HIST 4623. Revolutionary America, 1763 to 1789. 3 Hours.
History of revolutionary America emphasizing economic, social, and cultural perspectives. Topics include historical interpretations of the causes of the war, the impact of war on African Americans, women, loyalists, elite, and poor Americans. The course also examines the formation of the new national government. (Typically offered: Irregular)

HIST 4643. Early American Republic, 1789-1828. 3 Hours.
History of the early United States emphasizing social and cultural perspectives.
Topics addressed will include westward expansion, slavery, religion, and economic change. (Typically offered: Irregular)

HIST 4653. Antebellum America, 1828-1850. 3 Hours.
History of antebellum U.S. emphasizing social and cultural perspectives. Topics addressed will include slavery, religion, gender, the market economy, regionalism, and political developments. (Typically offered: Irregular)

## HIST 4663. Rebellion to Reconstruction, 1850-1877. 3 Hours.

A survey of political, social, and economic issues from the late antebellum period through Reconstruction. Emphasis is placed on the causes of the Civil War and the problems of postwar America. A brief examination of the Civil War is included. (Typically offered: Irregular)

## HIST 4673. The American Civil War. 3 Hours.

An intensive study of the political, social, military, and economic aspects of the American Civil War period. (Typically offered: Fall)

## HIST 4693. Approaching Global History. 3 Hours.

Explores theoretical perspectives on global history through a treatment of the historiographical development of the field, readings of landmark texts, and selected case studies of global themes. (Typically offered: Irregular)
This course is cross-listed with INST 4693.

## HIST 4703. Emergence of Modern America, 1876-1917. 3 Hours.

A survey of the impact of the Industrial Revolution, Imperialism, and progressivism upon American life and institutions. (Typically offered: Fall Odd Years)

HIST 4713. Women, Gender, and Sexuality in Colonial Latin America. 3 Hours. This course examines women, gender, and sexuality in colonial Latin America. It explores the lives of indigenous, Spanish, African, and mixed-race women from all social ranks. A central question is: does the current status of women in Latin America stem from a colonial legacy of gender oppression and sexual repression? (Typically offered: Irregular)
This course is cross-listed with LALS 4713.
HIST 4723. America Between the Wars, 1917-1941. 3 Hours.
The impact of World War I, the 1920s, and the Great Depression upon American society and culture. (Typically offered: Spring Even Years)

## HIST 4733. Recent America, 1941 to the Present. 3 Hours.

A general survey of American history since World War II with emphasis upon the presidency, reform movements, the Cold War, and cultural developments. (Typically offered: Irregular)

HIST 4743. The Cold War in Latin America: Revolutions, Violence, and Politics. 3 Hours.
This course will trace the rise of the ideological and political struggles over social and economic development and the security regimes designed to thwart socialist revolution and political mobilization. The influence of the United States in Latin
American security regimes and "containment" activities will receive special attention. (Typically offered: Irregular)
This course is cross-listed with LALS 4743.

HIST 4763. Diplomatic History of the United States, 1900-1945. 3 Hours. America's development as a world power. The course examines U.S. relations with Europe, Latin America, and East Asia, plus America's first approach to the Middle East. Particular emphasis is placed on America's involvement in World War I and World War II. (Typically offered: Spring Odd Years)

HIST 4773. Diplomatic History of the US, 1945 to Present. 3 Hours.
U.S. involvement in world affairs since WWII. The Cold War from an international perspective, including strategies, nuclear deterrence, conflicts, economic developments, cultural relations among allies and adversaries. Post-Cold War scenarios, including war on terrorism. (Typically offered: Irregular)

## HIST 4783. History of Modern Mexico. 3 Hours.

This course examines the history of Mexico from the wars of independence to the present. Emphasis will be placed on the turbulent nineteenth century and the Mexican Revolution. Themes covered include colonial legacies, national identities, popular culture, emigration, and relations with the United States. (Typically offered: Irregular)

HIST 4793. Colonial India, 1758-1948. 3 Hours.
Examines the course of Indian history from the 1758 Battle of Plassey to eventual independence from Great Britain in 1948. Special attention is given to India's place within the British Empire, particularly the East Indian Company, the Indian Mutiny, the Raj, the rise of Gandhi, and India's independence movement. (Typically offered: Irregular)

## HIST 4803. Modern Scandinavia. 3 Hours.

Examines the history of the Nordic lands, including Denmark, Finland, Iceland, Norway, and Sweden, from 1500 to the present. (Typically offered: Irregular)

HIST 4813. Africans and Slavery in Colonial Latin America. 3 Hours.
Explores the diverse experiences of slaves and free Blacks in colonial Spanish and Portuguese America from 1500 to around 1888, demonstrating that bondage and the practice of African slavery was a pillar of political authority in colonial Latin America. (Typically offered: Irregular)
This course is cross-listed with AAST 4813, LALS 4813.
HIST 4823. Black Freedom in the Age of Emancipation. 3 Hours.
This course centers on the comparative study of Atlantic World freedom movements from the perspective of the African Diaspora. It focuses on the histories, meanings, legacies of the various types of black emancipation in the Atlantic World and the cultural technologies that enabled them. (Typically offered: Spring) This course is cross-listed with AAST 4823.

## HIST 4843. Global History of Soccer. 3 Hours.

Prompts students to explore the various historical processes related to the global diffusion of and engagement with soccer. Examines the ways soccer has reflected the broader, ongoing process of globalization, with players, ideas, tactics, and wealth circulating throughout the globe. (Typically offered: Irregular)

HIST 4863. From Hiroshima to Fukushima: Nuclear Security in Asia. 3 Hours. History of nuclear security in Asia from the end of World War II to the nuclear meltdown at Fukushima. Analyzes environmental and human aspects involved in the production and testing of nuclear weapons, the building of nuclear facilities, and the impact of nuclear disasters on the region. (Typically offered: Irregular)

## HIST 4873. Germany since 1945. 3 Hours.

Examines the history of Germany since the end of the Second World War including political division and economic recovery, dissident movements in East Germany and alternative cultures in West Germany, reunification in 1990, and the legacy of Nazism and the Holocaust. (Typically offered: Irregular)
HIST 4883. Health and Disease: 1500 to the Present. 3 Hours.
Explores the emergence of epidemics against the backdrop of the nation state and anxieties over women, the lower classes, and other marginalized groups. The rise of modern health programs illuminates the cultural construction of medicine, the biases of scientific inquiry, and the tensions among paternalism, liberty, and prejudice.
(Typically offered: Irregular)

HIST 4893. History Seminar. 3 Hours.
Advanced study of selected historical topics, with emphasis on the application of historical research methods and writing skills to produce a substantial research paper or thesis. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## HIST 4893H. Honors History Seminar. 3 Hours.

Advanced study of selected historical topics, with emphasis on the application of historical research methods and writing skills to produce a substantial research paper or thesis. Prerequisite: Honors Standing. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HIST 4893.
HIST 4901. Applying History. 1 Hour.
Study of the ways in which historians apply knowledge in their discipline to advance research, preserve the past, and address contemporary issues. Reflection on student learning in history and possibilities for post-baccalaureate study and employment. (Typically offered: Fall and Spring)

HIST 4901H. Honors Applying History. 1 Hour.
Study of the ways in which historians apply knowledge in their discipline to advance research, preserve the past, and address contemporary issues. Reflection on student learning in history and possibilities for post-baccalaureate study and employment. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to HIST 4901.

HIST 491V. Internship in History. 1-3 Hour.
Work experience related to history arranged by the student under the guidance of a faculty member. Paper required. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
HIST 4943. U.S. Labor History, from 1877-present. 3 Hours.
This course will examine the changing nature of work in U.S. history from 1877 until the present. It will pay particular attention to the ways that workers--individually and collectively--understand the meanings of their labor and to the ways that notions of class, gender, ethnicity, and race inform these understandings. (Typically offered: Irregular)

HIST 4953. The Global 1860s. 3 Hours.
Explores the pivotal decade of the 1860s, from its roots in the events revolving around the 1848 Revolutions in Europe to its developments up to the end of the 1870s. Shows the connections between the Americas, Europe, South Asia and parts of the Caribbean and the Pacific. (Typically offered: Irregular)
HIST 4963. Third World Underdevelopment and Modernization. 3 Hours. Examines key issues related to societal change in the Third World, including various views and theories of international development and modernization. Other major issues explored include social inequalities, food and hunger, population, environment, trade and globalization, international aid, and the roles of state, market, and civil society. (Typically offered: Irregular)
This course is cross-listed with AAST 4963.
HIST 4973. The Civilization of the Renaissance in Italy. 3 Hours.
Important trends in Italian culture between the 14th and 16th centuries, including the birth of humanism, new understandings of the past, "new" political ideologies, scientific innovation, and famous art produced in the Western tradition. (Typically offered: Irregular)

HIST 498V. History Thesis. 1-6 Hour.
Advanced research and writing supporting the development of a substantive research thesis in history. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## HIST 498VH. Honors History Thesis. 1-6 Hour.

Honors history thesis. Prerequisite: Junior standing and honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HIST 498V.

HIST 4993. History of the Ottoman Empire, 1300-1923. 3 Hours.
History of the Ottoman Empire from its emergence as frontier principality in Anatolia ca. 1300, through its heyday as a major imperial power on three continents in the fifteenth through the eighteenth centuries, ending with its encounter with western imperialism and nationalism in the nineteenth and early twentieth centuries. (Typically offered: Irregular)

## Humanities (HUMN)

Trish Starks
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The Humanities Program supports the Honors Humanities Project (H2P) and promotes humanistic scholarship and inquiry, innovative and interdisciplinary teaching, and humanities scholarship to the wider community.

## Courses

HUMN 1114H. Honors Roots of Culture to 500 C.E.. 4 Hours.
This course constitutes the first segment of a four-semester interdisciplinary study of the Egyptian Book of the Dead, the Torah, the Roman Colosseum, Hinduism, and Confucianism. Open to first-year Honors students by invitation only. Corequisite: Drill component. (Typically offered: Fall)

## HUMN 1124H. Honors Equilibrium of Cultures 500-1600. 4 Hours.

This course constitutes the second segment of a four-semester sequence focusing on world cultures. Semester 2 may include the interdisciplinary study of Islam, early Byzantium, Gothic architecture, Heian Japan, and the ancient Maya. Open to firstyear Honors students by invitation only. Corequisite: Drill component. (Typically offered: Spring)

## HUMN 2013. Introduction to Buddhism. 3 Hours.

Beginning with an analysis of the fundamental principles that underlie all Buddhist thought and practice, students will proceed through the major precepts that have historically distinguished the traditions of Southern and Northern Asia. Attention will also be given to Buddhism's spread through Europe and North America in the twentieth century. (Typically offered: Fall)

## HUMN 2114H. Honors Birth of Modern Culture 1600-1900. 4 Hours.

This course constitutes the third segment of a four-semester sequence focusing on world cultures. Semester 3 may include the interdisciplinary study of Renaissance Venice, feudal Japan, Moghul India, Jefferson's Monticello, and Darwinism. Open to second-year Honors students by invitation only. Corequisite: Drill component. (Typically offered: Fall)

## HUMN 2213. Introduction to World Religions. 3 Hours.

A survey of major religious traditions, including--but not limited to--Hinduism, Buddhism, Judaism, Christianity, and Islam. (Typically offered: Spring and Summer)

## HUMN 301V. Internship in Humanities. 1-3 Hour.

Work experience in the Arkansas Humanities Center or other humanities entity or organization. Project required. (Typically offered: Fall, Spring and Summer)

## HUMN 3083. Professional Topics. 3 Hours.

Specialized topics related to professional issues in the humanities, e.g. academic and alternative-academic job searches, publication workshops, public humanities, and/or teaching of humanities disciplines at various levels. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is cross-listed with ENGL 3083.

## HUMN 3923H. Honors Colloquium. 3 Hours.

Treats a special topic or issue offered as a part of the Honors Program. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit.

HUMN 425V. Colloquium. 1-6 Hour.
An interdisciplinary, value-oriented discussion course. (Typically offered:
Irregular) May be repeated for up to 6 hours of degree credit.
HUMN 425VH. Honors Colloquium. 1-6 Hour.
An interdisciplinary, value-oriented discussion course. (Typically offered:
Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HUMN 425V.

## Indigenous Studies (INDS)

## Sean Teuton

Director of Indigenous Studies
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The Indigenous Studies minor invites discovery of alternative world views, ecological relationships, societies, religions, arts, and governments of indigenous peoples in North America and beyond from antiquity to the present. Immersed in this inherently interdisciplinary field of study, students have the opportunity to master and employ its many theories and methodologies, debates and issues, in often comparative contexts. Such exposure and training prepares those who achieve the minor for graduate work in the humanities, business, law, and the sciences as they pertain to indigenous peoples, but also for any career that requires a supple knowledge of cultural difference between Arkansas and an increasingly global world.

## Requirements for a Minor in Indigenous Studies

Students seeking the minor in Indigenous Studies must complete three courses, one from each of three core groups: Culture, History and Literature. Students then complete two additional elective courses from the list below for a total of 15 credit hours. Other courses not listed below may serve the requirements, although only as approved by the Indigenous Studies program director. Only 6 credit hours can count toward requirements of other majors or minors.

| Culture |  |  |
| :--- | :--- | :--- |
| ANTH 3213 | Indigenous Peoples of North America: <br> Anthropological Perspectives | 3 |
| ANTH 3473 | North American Prehistory | 3 |
| ANTH 3533 | Medical Anthropology | 3 |
| ANTH 4143 | Ecological Anthropology | 3 |
| History |  | 3 |
| HIST 3263 | History of the American Indian |  |
| Literature |  | 3 |
| COMM 3983 | Special Topics | 3 |
| ENGL 3553 | Topics in Native American Literature and Culture | 3 |
| ENGL 4553 | Studies in Native American Literature and Culture | 3 |
| WLLC 4043 | The Early French in North America ${ }^{2}$ | 3 |
| WLLC 3053 | The Colonial French in the Mississippi Valley ${ }^{2}$ | 3 |

[^6]including the Arkansas area, respectively, combining ethnohistory and literary study of accounts found in original documents. Taught in English language.

## Interdisciplinary Studies (IDST)

Robert Brady

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The Interdisciplinary Studies Program is targeted toward highly motivated students whose interests, needs, and talents are not reflected or met by existing majors. It is a major in which students will pursue coursework from two or more traditional disciplines in sufficient depth and breadth to prepare them for employment or graduate/professional study. The major will lead to a Bachelor of Arts in interdisciplinary studies.

The Interdisciplinary Studies Program is targeted toward highly motivated students whose interests, needs, and talents are not reflected or met by existing majors. It is a major in which students will pursue coursework from two or more traditional disciplines in sufficient depth and breadth to prepare them for employment or graduate/professional study. The major will lead to a Bachelor of Arts in Interdisciplinary Studies.

There are three options for students who wish to pursue a B.A. in Interdisciplinary Studies:

- Option 1 - Construction of an Interdisciplinary Studies major consisting of three thematically linked minors, at least one of which from the Fulbright College of Arts and Sciences. Students will follow the specific program requirements as specified by each minor. For Option 1, Thematically Linked Coursework must contain a minimum of 45 credit hours with a maximum number of hours dependent on which group of three minors are selected.
- Option 2 - Construction of an Interdisciplinary Studies major consisting of a thematically linked set of coursework primarily selected from, but not limited to, courses in Fulbright College. For Option 2, Thematically Linked Coursework must contain a minimum of 45 credit hours with a maximum of 21 hours of course work from a single discipline. Thirty credit hours of the proposed coursework must be numbered at the 3000-level or higher. At least two-thirds of the advanced level coursework must be completed on the UA-Fayetteville campus.
- Option 3 - Construction of an Interdisciplinary Studies major consisting of three to five thematically linked minors, certificates and microcertificates, at least one of which from the Fulbright College of Arts and Sciences. Students will follow the specific program requirements as specified by each minor, certificate, and/or microcertificate. For Option 3, Thematically Linked Coursework must contain a minimum of 45 credit hours with a maximum number of hours dependent on which minors, certificates or microcertificates are selected.

In addition to the Plan of Study, students wishing to pursue the interdisciplinary studies major must also submit a narrative statement that (1) expresses how the proposed coursework (or group of minors) fit together thematically; (2) expresses why the student's interests and needs are not met by existing degree programs; and (3) expresses how the interdisciplinary studies major contributes to the student's career goals and post-graduate opportunities.

## Interdisciplinary Studies Program Requirements:

Students must maintain a GPA of 2.5 or better on coursework constituting the major (e.g., Options 1, 2, or 3) for continuation in the program and in order to graduate with an Interdisciplinary Studies major. Should a student's GPA in the major fall below 2.5 , he or she will have one semester to bring the GPA back to an acceptable level.

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| State Minimum Core | 35 |
| :--- | ---: |
| IDST Requirement | 6 |
| IDST $2003 \quad$ Introduction to Interdisciplinary Studies |  |
| IDST $4013 \quad$ Senior Capstone | $45-57$ |
| Thematically Linked Coursework ${ }^{1}$ |  |
| Option 1 - Three minors |  |
| Option 2 - Thematically linked set of coursework |  |
| Option 3 - Minors/certificates/microcertificates |  |
| General Electives ${ }^{2}$ | $\mathbf{2 2 - 3 4}$ |
| Total Hours | $\mathbf{1 2 0}$ |

${ }^{1}$ Thematically Linked Coursework approved by the IDST program is considered to meet College Residency and Major Residency requirements.
${ }^{2}$ Students must present for degree credit at least 40 credit hours of work in courses numbered 3000 and above. Included in these 40 hours can be courses numbered 2000 if each has a specific course designated as a prerequisite. If Thematically Linked Coursework is not sufficient to satisfy the 40 credit hour rule, general electives must be used as needed to meet this requirement.

Writing Requirement: To complete the Fulbright College writing requirement, students must submit one of the following:

1. Complete at least one upper-division course that satisfies the College Writing Requirement in one of the disciplines contributing to the student's course plan (Option 1 or Option 2).
2. Submit to the program director a research paper that is no less than 12 pages in length, includes 10 references, and is written in an upperdivision course in one of the disciplines contributing to the student's course plan (Option 1 or Option 2).

## Interdisciplinary Studies B.A. Eight-Semester Degree Plan

Students wishing to follow the eight-semester degree plan should see the Academic Regulations chapter for university requirements. University Core requirements may vary by individual, based on placement and previous credit granted. Once all University Core requirements are met, students may substitute a 3-hour (or more) general elective in place of a core area.

Students in the Interdisciplinary Studies Program develop individualized course plans. These courses are referred to in the plan below as IDST Course Plan hours.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher if appropriate for IDST individual plan)) | 3 |  |
| Approved science core lecture requirement with corequisite lab requirement. | 4 |  |
| Elementary II world language course (recommended) | 3 |  |
| Fine Arts core requirement | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) |  | 3 |
| Approved science core lecture with corequisite lab requirement |  | 4 |
| Intermediate I world language course (recommended) or other Humanities core course requirement |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency $=$ HIST 2113) or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123) or PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) |  | 3 |
| General Elective |  | 3 |
| Year Total: | 16 | 16 |


| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| Social Science core requirement | 3 |  |
| IDST Course Plan | 12 |  |
| Social Science core requirement |  | 3 |
| IDST Course Plan | 15 | 11 |
| Year Total: |  |  |
|  |  | Units |
| Third Year | Fall | Spring |
|  | 3 |  |
| Social Science core requirement | 12 |  |
| IDST Course Plan |  | 15 |
| IDST Course Plan | 15 | 15 |
| Year Total: |  |  |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| IDST Course Plan | 15 |  |
| IDST Course Plan |  | 14 |
| Year Total: | 15 | 14 |

# International and Global Studies (INST) 

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International and Global Studies Website (https://fulbright.uark.edu/area-studies/international-studies/)

The International Studies Program offers a major leading to a Bachelor of Arts degree. The program offers three concentrations:

- European and Transatlantic Affairs
- Peace, Security and Human Rights
- Global South

The Fulbright College of Arts and Sciences is strongly committed to the study of global interactions, and this program offers students a strong foundation for more advanced study as well as preparation for careers in an increasingly global economy and society. The degree offers a broad interdisciplinary course of study with a strong intercultural and international focus. Intensive language study and study abroad are especially encouraged.

Students who major in international and global studies are encouraged to pursue a minor or second major. Recommended fields include anthropology, economics, geography, history, political science, sociology, or world languages. Students may not earn both a major in International Studies and a minor in Global Studies.

## B.A. in International and Global Studies with European and Transatlantic Affairs Concentration

University and College Requirements for a Bachelor of Arts in International and Global Studies. In addition to the Fulbright College of Arts and Sciences graduation requirements (see under Degree Completion Program Policy), the following course requirements must be met.

| State minimum core |  | 35 |
| :---: | :---: | :---: |
| INST 2813 | Introduction to International Relations and Global Studies | 3 |
| or PLSC 2813 | Introduction to International Relations and Global Studies |  |
| ECON 2143 | Basic Economics: Theory and Practice (recommended) ${ }^{1}$ | 3 |
| or ECON 2013 | Principles of Macroeconomics (ACTS Equivalency = ECON 2103) |  |
| or ECON 2023 | Principles of Microeconomics (ACTS Equivalency = ECON 2203) |  |
| World Culture Requirement |  | 6 |
| Choose two courses from below: |  |  |
| AAST 1003 | Introduction to African and African American Studies |  |
| ANTH 1023 | Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013) |  |
| GEOS 2003 | World Regional Geography (ACTS Equivalency = GEOG 2103) |  |

HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
HUMN 2114H Honors Birth of Modern Culture 1600-1900
LALS 2013 Introduction to Latin American and Latino Studies
MEST 2013 Introduction to Middle East Studies
PLSC 2013 Introduction to Comparative Politics
World Language Requirement
Six credit hours of 3000-level or higher modern world language instruction in one of the following languages: Arabic, Chinese, French, German, Italian, Japanese, Russian, or Spanish. Students completing the European and Transatlantic Affairs Concentration must select a language from French, German, Italian, Russian, or Spanish. Students completing the Global South Concentration must select a language from Arabic, French, Portuguese, or Spanish. This requirement cannot be fulfilled with 3 credits in one language and three credits in another language. Students may need to fulfill prerequisites in a world language at the 1003, 1013, 2003, or 2013 levels, depending on placement in that language. Students may meet this requirement with the study of other languages with permission of the International and Global Studies director.
Applied Global Studies Requirement
Choose at least two different courses from the list below for a total of six credit hours. Selected courses may not apply to other parts of the major.
INST 300V Internship in International Studies
INST 3613 Research Methods
INST 399VH Honors Thesis
INST 4003 Special Topics in International and Global Studies or INST 4003\#bnors Special Topics in International and Global Studies
INST 4913 International Studies Seminar or INST 491‘Honors International Studies Seminar
INST 493V Global Changemakers: Social Innovation Abroad Note: With approval of the program director, students may apply up to 12 credit hours toward the major from any course related to International and Global Studies completed through a study abroad experience.
Concentration Requirements
Any 3000-level or higher credit hours or any 2000-level credit 10 hours which have a course prerequisite
General Electives
Total Hours 120

1 Students are encouraged to take ECON 2143, which will satisfy the prerequisite for most upper-level ECON courses. Students who select either ECON 2013 or ECON 2023 to meet the Economics Requirement for the major will have to complete both ECON 2013 and ECON 2023 if they wish to take upper-level ECON courses.

## Capstone Experience and Fulbright College Writing

Requirement: The Fulbright College writing requirement is fulfilled by completing at least one course satisfying the Applied Global Studies Requirement with a grade of $B$ or better, or by submitting an acceptable research /analytical paper from an advanced course in international and global studies to the program director for approval at least four weeks prior to graduation.

## Additional Requirements for the European and Transatlantic Concentration

| INST 3303 | European Integration and Globalization |
| :---: | :---: |
| Global Topics Requirement |  |
| Choose one course from the following: |  |
| ECON 3843 | Economics of the Developing World |
| GEOS 3043 | Sustaining Earth |
| GEOS 4113 | Global Change |
| GEOS 4243 | Political Geography |
| HIST 3453 | Modern Terrorism |
| HIST 4473 |  |
| HIST 4843 | Global History of Soccer |
| HIST 4963 | Third World Underdevelopment and Modernization |
| INST 3603 | Universal Human Rights: History and Practice since 1945 |
| INST 3673 | Social Entrepreneurship |
| INST 3903 | Crossing Borders: Transnationalism and Intercultural Transfer |
| INST 406V | Independent Study in International Studies |
| INST 4603 | Peace Studies: Approaches and Theory |
| INST 4653 | International Food Security and Food Sovereignty |
| $\begin{aligned} & \text { INST/HIST } \\ & 4693 \end{aligned}$ | Approaching Global History |
| INST 4793 | Eugenics in Global Perspective |
| INST/COMM $4873$ | International Communication and Globalization |
| INST 4893 | International Negotiation and Mediation |
| INST 493V | Global Changemakers: Social Innovation Abroad |
| PLSC 3683 | International Conflict and National Security Policy |
| PLSC 3803 | International Organization |
| PLSC 3813 | International Law |
| $\begin{aligned} & \text { PLSC/INST } \\ & 4893 \end{aligned}$ | International Negotiation and Mediation |

European and Transatlantic Topics Requirement
Chose four courses from below. With the exception of INST courses, no more than two courses may come from the same discipline.
ECON 4173 Nation Model United Nations
ECON 4633 International Trade
GEOS 4783 Geography of Europe
GERM 4013 Germany and the Holocaust: The Significance of the Holocaust in Differentiated Contexts
HIST 3363 The Atlantic World, 1400-1850
HIST 3423 British History, 1688-Present
HIST 3433 Twentieth Century Britain through Film
HIST 3533 World War II
HIST 3543 Russia to 1861
HIST 3553 Russia Since 1861
HIST 3573 World War I
HIST 3683 Europe in the 19th Century
HIST 3693 Europe in the 20th Century
HIST 3883 Modern Italy and the World, 1861-Present

| HIST 4133 | Society and Gender in Modern Europe |
| :--- | :--- |
| HIST 4143 | Intellectual History of Europe Since the <br> Enlightenment |
| HIST 4183 | Great Britain, 1707-1901 |
| HIST 4193 | Great Britain,1901-2001 |
| HIST 4203 | History of the Holocaust |
| HIST 4213 | The Era of the French Revolution |
| HIST 4223 | France Since 1815 |
| HIST 4243 |  |
| HIST 4253 | Germany, 1918-1945 |
| HIST 4303 | Transatlantic Relations, 1919-Present |
| HIST 4803 | Modern Scandinavia |
| HIST 4873 | Germany since 1945 |
| INST 300V | Internship in International Studies |
| INST 399VH | Honors Thesis |
| INST 406V | Independent Study in International Studies |
| PHIL 4033 | Modern Philosophy-17th and 18th Centuries |
| PHIL 4043 |  |
| PHIL 4063 |  |
| PLSC 3553 | Western European Politics |
| PLSC 4563 | Government and Politics of Russia |
| RUSS 4133 | Survey of Russian Literature Since the 1917 <br> Revolution |

## Total Hours

## B.A. in International and Global Studies with European and Transatlantic Concentration

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

State Minimum Core (p. 81) requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic adviser.

| First Year | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency <br> = ENGL 1013) (Satisfies General Education <br> Outcome 1.1) <br> Satisfies General Education Outcome 2.1: <br> MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency = MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency = MATH 1103) <br> or any MATH course numbered higher than <br> MATH 1203 | 3 |
| World language at the Elementary I level |  |
| U.S. History or Government State Minimum Core |  |
| (Satisfies General Education Outcome 4.2) |  |
| World Culture Requirement | 3 |

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)
INST 2813 Introduction to International Relations and Global Studies (Satisfies General Education Outcomes 3.3, 4.1, and 5.1)
World language at the Elementary II level
World Culture Requirement (choose one not taken yet)
General Elective
Year Total:

| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| World language at the Intermediate I level (Satisfies General Education Outcome 3.2) | 3 |  |
| Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| Science State Minimum Core with corequisite lab (Satisfies General Education Outcome 3.4) | 4 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| General Electives | 3 |  |
| World language at the Intermediate II level |  | 3 |
| ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3) |  | 3 |
| Science State Minimum Core with corequisite lab (Satisfies General Education Outcome 3.4) |  | 4 |
| General Electives ${ }^{1}$ |  | 6 |
| Year Total: | 16 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| World language at the 3000-level | 3 |  |
| INST 3303 European Integration and Globalization (Satisfies General Education Outcome 1.2) | 3 |  |
| European and Transatlantic Topics Requirement | 3 |  |
|  | 6 |  |

World language at the 3000-level
European and Transatlantic Topics Requirement
Global Topics Course
General Electives ${ }^{1}$
Year Total: 15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| Applied Global Studies Requirement (Satisfies | 3 |  |
| General Education Outcome 6.1) | 3 |  |
| European and Transatlantic Topics Requirement <br> Any 3000-level or higher credit hours or any 2000- <br> level credit hours which have a course prerequisite | 7 |  |
| General Electives |  |  |
| Applied Global Studies Requirement | 2 | 3 |

\%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWn \%7C1000\&sdata=r35av68n3oEQW9FsIlqBgmbsTnUENpJF7EoP4AD4Bks \%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

## B.A. in International and Global Studies with Global South Concentration

## University and College Requirements for a Bachelor of Arts in

 International and Global Studies. In addition to the Fulbright College of Arts and Sciences graduation requirements (see under Degree Completion Program Policy), the following course requirements must be met.State minimum core

| INST 2813 | Introduction to International Relations and Global <br> Studies | 3 |
| :---: | :--- | :---: |
| or PLSC 2813 | Introduction to International Relations and Global <br> ECON 2143 | Studies |
| Basic Economics: Theory and Practice <br> (recommended) $^{1}$ | 3 |  |

or ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)
or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)
World Culture Requirement 6
Choose two courses from below:
AAST 1003 Introduction to African and African American Studies
ANTH 1023 Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013)
GEOS 2003 World Regional Geography (ACTS Equivalency = GEOG 2103)
HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
HUMN 2114H Honors Birth of Modern Culture 1600-1900
LALS 2013 Introduction to Latin American and Latino Studies
MEST 2013 Introduction to Middle East Studies
PLSC 2013 Introduction to Comparative Politics
World Language Requirement 6

| European and Transatlantic Topics Requirement | 3 |  |
| :--- | ---: | ---: |
| Any 3000-level or higher credit hours or any 2000- | 3 |  |
| level credit hours which have a course prerequisite |  |  |
| General Electives ${ }^{1}$ | 4 |  |
| Year Total: | 15 | 13 |

1 Students must complete the State Minimum Core (p. 81) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http fulfill these requirement.

都



Six credit hours of 3000 -level or higher modern world language instruction in one of the following languages: Arabic, Chinese, French, German, Italian, Japanese, Russian, or Spanish. Students completing the European and Transatlantic Affairs Concentration must select a language from French, German, Italian, Russian, or Spanish. Students completing the Global South Concentration must select a language from Arabic, French, Portuguese, or Spanish. This requirement cannot be fulfilled with 3 credits in one language and three credits in another language. Students may need to fulfill prerequisites in a world language at the 1003, 1013, 2003, or 2013 levels, depending on placement in that language. Students may meet this requirement with the study of other languages with permission of the International and Global Studies director.

## Applied Global Studies Requirement

Choose at least two different courses from the list below for a total of six credit hours. Selected courses may not apply to other parts of the major.
INST 300V Internship in International Studies
INST 3613 Research Methods
INST 399VH Honors Thesis
INST 4003 Special Topics in International and Global Studies
or INST 4003Hbnors Special Topics in International and Global Studies
INST 4913 International Studies Seminar
or INST 491:Honors International Studies Seminar
INST 493V Global Changemakers: Social Innovation Abroad
Note: With approval of the program director, students may apply up to 12 credit hours toward the major from any course related to International and Global Studies completed through a study abroad experience.
Concentration Requirements ..... 18
Any 3000-level or higher credit hours or any 2000-level credit ..... 10
hours which have a course prerequisite
General Electives33
Total Hours ..... 120

1 Students are encouraged to take ECON 2143, which will satisfy the prerequisite for most upper-level ECON courses. Students who select either ECON 2013 or ECON 2023 to meet the Economics Requirement for the major will have to complete both ECON 2013 and ECON 2023 if they wish to take upper-level ECON courses.

## Additional Requirements for the Global South Concentration

Students complete 18 credit hours from the following:

| INST 3503 | Issues in the Global South | 3 |
| :--- | :--- | :--- |
| Global Topics Requirement | 3 |  |
| Choose one course from the following: |  |  |
| ECON 4173 | Nation Model United Nations |  |
| ECON 4633 | International Trade |  |
| ECON 3853 | Emerging Markets |  |
| ECON 3843 | Economics of the Developing World |  |
| GEOS 3043 | Sustaining Earth |  |
| GEOS 4113 | Global Change |  |


| GEOS 4233 | Geography of Religion \& Sacrality |
| :---: | :---: |
| GEOS 4243 | Political Geography |
| ENGL 3763 |  |
| HIST 3363 | The Atlantic World, 1400-1850 |
| HIST 3443 | Modern Imperialism |
| HIST 4473 |  |
| HIST 4963 | Third World Underdevelopment and Modernization |
| INST 3303 | European Integration and Globalization |
| INST 3603 | Universal Human Rights: History and Practice since 1945 |
| $\begin{aligned} & \text { INST/SEVI } \\ & 3673 \end{aligned}$ | Social Entrepreneurship |
| INST 3903 | Crossing Borders: Transnationalism and Intercultural Transfer |
| INST 406V | Independent Study in International Studies |
| INST 4103H | Honors Geography of Political Violence |
| INST 4603 | Peace Studies: Approaches and Theory |
| INST 4653 | International Food Security and Food Sovereignty |
| INST 4693 | Approaching Global History |
| INST 4793 | Eugenics in Global Perspective |
| INST 4873 | International Communication and Globalization |
| INST 4893 | International Negotiation and Mediation |
| INST 493V | Global Changemakers: Social Innovation Abroad |
| PLSC 3683 | International Conflict and National Security Policy |
| PLSC 3803 | International Organization |
| PLSC 3813 | International Law |
| PLSC 3853 | American Foreign Policy |

Area Studies Requirement
Four Area Studies courses at the 3000 level and higher chosen from the approved catalog of courses in African and AfricanAmerican Studies, Latin American and Latino Studies, and Middle East Studies. Students must choose courses from at least two area studies programs. Students are encouraged to choose courses with an international focus.

## Total Hours

## B.A. in International and Global Studies with Peace, Security and Human Rights Concentration

## University and College Requirements for a Bachelor of Arts in International and Global Studies. In addition to the Fulbright College of Arts and Sciences graduation requirements (see under Degree Completion Program Policy), the following course requirements must be met.

## State minimum core

INST 2813 Introduction to International Relations and Global 3 Studies
or PLSC 2813 Introduction to International Relations and Global Studies
ECON 2143 Basic Economics: Theory and Practice (recommended) ${ }^{1}$
or ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)
or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)

## World Culture Requirement

Choose two courses from below:
AAST 1003 Introduction to African and African American Studies
ANTH 1023 Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013)
GEOS 2003 World Regional Geography (ACTS Equivalency = GEOG 2103)
HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency $=$ HIST 1123)
HUMN 2114H Honors Birth of Modern Culture 1600-1900
LALS 2013 Introduction to Latin American and Latino Studies
MEST 2013 Introduction to Middle East Studies
PLSC 2013 Introduction to Comparative Politics

## World Language Requirement

Six credit hours of 3000-level or higher modern world language instruction in one of the following languages: Arabic, Chinese, French, German, Italian, Japanese, Russian, or Spanish. Students completing the European and Transatlantic Affairs Concentration must select a language from French, German, Italian, Russian, or Spanish. Students completing the Global South Concentration must select a language from Arabic, French, Portuguese, or Spanish. This requirement cannot be fulfilled with 3 credits in one language and three credits in another language. Students may need to fulfill prerequisites in a world language at the 1003, 1013, 2003 , or 2013 levels, depending on placement in that language. Students may meet this requirement with the study of other languages with permission of the International and Global Studies director.

## Applied Global Studies Requirement

Choose at least two different courses from the list below for a total of six credit hours. Selected courses may not apply to other parts of the major.
INST 300V Internship in International Studies
INST 3613 Research Methods
INST 399VH Honors Thesis
INST 4003 Special Topics in International and Global Studies
or INST 4003Hbnors Special Topics in International and Global Studies
INST 4913 International Studies Seminar
or INST 491'Honors International Studies Seminar
INST 493V Global Changemakers: Social Innovation Abroad
Note: With approval of the program director, students may apply up to 12 credit hours toward the major from any course related to International and Global Studies completed through a study abroad experience.
Concentration Requirements 18
Any 3000-level or higher credit hours or any 2000-level credit 10 hours which have a course prerequisite
General Electives 33

## Total Hours

1 Students are encouraged to take ECON 2143, which will satisfy the prerequisite for most upper-level ECON courses. Students who select either ECON 2013 or ECON 2023 to meet the Economics Requirement
for the major will have to complete both ECON 2013 and ECON 2023 if they wish to take upper-level ECON courses.

## Capstone Experience and Fulbright College Writing

Requirement: The Fulbright College writing requirement is fulfilled by completing at least one course satisfying the Applied Global Studies Requirement with a grade of $B$ or better, or by submitting an acceptable research /analytical paper from an advanced course in international and global studies to the program director for approval at least four weeks prior to graduation.

## Additional Requirements for the Peace, Security and Human Rights Concentration

Students complete 18 credit hours from the following:

| INST 3603 | Universal Human Rights: History and Practice <br> since 1945 |
| ---: | :--- |
| or INST 4603 | Peace Studies: Approaches and Theory |

Area Studies Requirement
Choose one course from the following:
INST 3303 European Integration and Globalization
INST 3503 Issues in the Global South
Any course at the 3000 level or higher chosen from the approved catalog of courses in African and African-American Studies, Asian Studies, Latin American and Latino Studies, Middle East Studies, or the European and Transatlantic Concentration in International Studies. Students are encouraged to choose courses with an international focus.

## Topical Requirement

Choose four topical courses from among the following. With the exception of INST courses, no more than two courses may come from the same discipline.
ECON 3843 Economics of the Developing World
ECON 3853 Emerging Markets
ECON 4173 Nation Model United Nations
ECON 4633 International Trade
GEOS 3043 Sustaining Earth
GEOS 4113 Global Change
GEOS 4243 Political Geography
HIST 3033 Islamic Civilization
HIST 3063 Military History
HIST 3443 Modern Imperialism
HIST 3453 Modern Terrorism
HIST 3533 World War II
HIST 3573 World War I
HIST 3583 The United States and Vietnam, 1945-1975
HIST 3593 The 1960s: A World Transformed
HIST 4203 History of the Holocaust
HIST 4303 Transatlantic Relations, 1919-Present
HIST 4323 Wars of Religion: From the Crusades to 9/11
HIST 4333 Modern Islamic Thought
HIST 4473
HIST 4753
HIST 4763 Diplomatic History of the United States, 1900-1945
HIST 4773 Diplomatic History of the US, 1945 to Present

World Culture Requirement 3

| INST 3673 | Social Entrepreneurship |
| :--- | :--- |
| INST 3903 | Crossing Borders: Transnationalism and <br> Intercultural Transfer |
| INST 399VH | Honors Thesis |
| INST 406V | Independent Study in International Studies |
| INST 4103H | Honors Geography of Political Violence |
| INST 4653 | International Food Security and Food Sovereignty |
| INST/HIST | Approaching Global History |
| 4693 |  |
| INST 4793 | Eugenics in Global Perspective |
| INST 4873 | International Communication and Globalization |
| INST 4893 | International Negotiation and Mediation |
| INST 493V | Global Changemakers: Social Innovation Abroad |
| JWST 4013 | Contemporary Jewish Thought |
| PLSC 3683 | International Conflict and National Security Policy |
| PLSC 3803 | International Organization |
| PLSC 3813 | International Law |
| PLSC 3823 | Theories of International Relations |
| PLSC 3853 | American Foreign Policy |
| PLSC 4513 | Creating Democracies |
| PLSC 4803 | Foreign Policy Analysis |
| PLSC 4833 | International Political Economy |
| PLSC 4853 | International Norms and Corporate Social |
| 4893 | Responsibility |

Total Hours

## B.A. in International and Global Studies with a Peace, Security and Human Rights Concentration

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

State Minimum Core (p.81) requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic adviser.

| First Year | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency <br> = ENGL 1013) (Satisfies General Education <br> Outcome 1.1) <br> Satisfies General Education Outcome 2.1: <br> MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency = MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency = MATH 1103) <br> or any MATH course numbered higher than <br> MATH 1203 | 3 |
| U.S. History or Government State Minimum Core <br> (Satisfies General Education Outcome 4.2) <br> World language at the Elementary I level |  |

ENGL 1013 Composition I (ACTS Equivalency

ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
INST 2813 Introduction to International Relations and Global Studies (Satisfies General Education Outcomes 3.3, 4.1, and 5.1)
World language at the Elementary II level
World Culture Requirement (choose one not taken
yet)
General Elective
Year Total:

| Second Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| World language at the Intermediate I level | 3 |  |
| (Satisfies General Education Outcome 3.2) |  |  |

Fine Arts State Minimum Core (Satisfies General
3

Education Outcome 3.1) ${ }^{1}$
Science State Minimum Core with corequisite lab 4
(Satisfies General Education Outcome 3.4)
Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3) ${ }^{1}$
General Elective
World language at the Intermediate II level 3
ECON 2143 Basic Economics: Theory and
Practice (Satisfies General Education Outcome
3.3)

Science State Minimum Core with corequisite lab
(Satisfies General Education Outcome 3.4)
General Electives ${ }^{1}$
Year Total: 16

Third Year | Units |
| ---: |
| Fall |

INST 3603 Universal Human Rights: History and 3
Practice since 1945
or INST 4603 Peace Studies: Approaches and Theory
Topical Requirement 3
General Electives ${ }^{1} \quad 6$
World language at the 3000-level 3
Topical Requirement 3
Area Studies Requirement 3
General Electives ${ }^{1} \quad 6$
Year Total: 15

| Fourth Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| Applied Global Studies Requirement (Satisfies | 3 |  |

INST 3603 Universal Human Rights: History and

General Education Outcome 6.1)
Topical Requirement

World language at the 3000-level 3
Satisfies General Education Outcome 1.2:

3

3

Any 3000-level or higher credit hours or any 2000level credit hours which have a course prerequisite

General Electives ${ }^{1}$

2
Applied Global Studies Requirement 3
Topical Requirement
Any 3000-level or higher credit hours or any 2000level credit hours which have a course prerequisite General Electives ${ }^{1}$
Year Total:

## Total Units in Sequence:

${ }^{1}$ Students must complete the State Minimum Core (p. 81) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (p. 72). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

Requirements for a minor in Global Studies: The minor in Global Studies requires 15 hours of coursework including the following:

| Global Issues (6 hours) |  |
| :--- | :--- | :--- |
| INST 2813 | Introduction to International Relations and Global <br> Studies |
| or PLSC 2813 |  |
| Introduction to International Relations and Global |  |
| Studies |  |

or INST 4913 4 bnors International Studies Seminar
PLSC 3803 International Organization
PLSC 3813 International Law
INST 493V Global Changemakers: Social Innovation Abroad PLSC/INST International Negotiation and Mediation 4893

## Intercultural Requirement

Choose from one of two options.

## Option 1

Three courses of language instruction in a single world language, including at least two courses at the 3000-level or higher taught in the target language.

## Option 2

Any combination of the following:
3 -hour course of language instruction in any world language at the 2003 level or higher.
Up to three Area Studies Electives listed in the undergraduate catalog as approved electives for one of the following: African and African-American Studies, Asian Studies, Latino and Latin American Studies, Middle East Studies, or the European and Transatlantic Concentration in International Studies. At least one course must be at the 3000-4000 level.
Six credit hours in an approved international experience, such as a study abroad program, international internship, or international research experience. The six credit hours may not be applied to other requirements of the minor.

## Total Hours

## Honors Requirements

Admission to the Fulbright Honors Program is open to majors in the international and global studies program who have a minimum cumulative grade-point average of 3.5 in all of their coursework. College and Departmental Honors candidates must complete a minimum of 12 hours in honors courses and complete an honors thesis.

To complete the required thesis, honors candidates should choose a faculty thesis director as early as possible but no later than the first semester of the student's junior year. Honors candidates must meet the college's requirements for an honors degree. Students graduating with honors typically graduate with the distinction cum laude. Higher distinctions (magna cum laude, summa cum laude) are awarded by the Honors Council in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Courses

INST 2813. Introduction to International Relations and Global Studies. 3 Hours.
An interdisciplinary survey of the state system, the role of non-state actors, and the processes and outcomes of globalization. Topics include theories of international conflict and peace, international norms and ethics, international law and organizations, global cultural interactions, and contemporary transnational challenges. (Typically offered: Fall and Spring)

INST 2813H. Honors Introduction to International Relations and Global Studies. 3 Hours.
An interdisciplinary survey of the state system, the role of non-state actors, and the processes and outcomes of globalization. Topics include theories of international conflict and peace, international norms and ethics, international law and organizations, global cultural interactions, and contemporary transnational challenges. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to INST 2813.

INST 300V. Internship in International Studies. 1-6 Hour.
Internship in international studies-related agency or organization, arranged by the student and/or faculty member, under the guidance of a faculty member. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

INST 3303. European Integration and Globalization. 3 Hours.
Interdisciplinary study of the cultural, economic, and political processes of modern European integration in the context of a changing relationship between Europe and the wider world during the 20th and 21st centuries. (Typically offered: Fall Even Years)
This course is cross-listed with HIST 3103.

## INST 3503. Issues in the Global South. 3 Hours.

Interdisciplinary study of salient historical and contemporary issues of the Global South, including the cultural, economic, and political forces that shape and/or emerge from societies or political subjects that historically experienced underdevelopment and colonialism. (Typically offered: Fall Odd Years)

INST 3603. Universal Human Rights: History and Practice since 1945. 3 Hours. Study of the development and growth of the universal human rights movement since the end of the Second World War. Emphasis on using human rights as a lens to understand and assess global affairs in the late 20th and early 21st centuries. Creates space for INST 3603 to be offered as part of a study abroad program. (Typically offered: Spring Even Years)

## INST 3613. Research Methods. 3 Hours.

Focuses on critical-thinking skills and information literacy needed for the interdisciplinary areas of study that comprise international and global studies: anthropology, economics, geography, history, and political science. Focuses on thesis-development, writing skills, methodological issues, and research strategies. Prerequisite: INST 2813. (Typically offered: Fall and Spring)

## INST 3673. Social Entrepreneurship. 3 Hours.

Explores notions of social entrepreneurship at both the global and local levels. Multiple case studies are analyzed to show the possibilities of participating in a market economy while promoting sustainable development. Students will undertake projects combining sound business practices with sustainable approaches to social challenges. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

## INST 3803. International Organization. 3 Hours.

Addresses how state and non-state actors try to organize the international system to help manage crucial issues such as the development and use of force, the efficiency and fairness of markets, and the realization and protection of human rights and environmental health. (Typically offered: Spring)
This course is cross-listed with PLSC 3803.
INST 3843. Economics of the Developing World. 3 Hours.
Examines theories and patterns of economic development in emerging economies, the role of the World Bank and IMF as multilateral lenders and examination of their success and failures in fostering development, and measures of poverty and inequality and their implications for economic development. Prerequisite: ECON 2143 or (ECON 2013 and ECON 2023). (Typically offered: Fall and Spring)

INST 3853. Emerging Markets. 3 Hours.
Analysis of the business and economic environment in emerging countries, focusing on Latin America, South East Asia and Transition Economies. Topics include market structure and market failures, financial and legal background, current institutions and political economy issues, and current business opportunities. Prerequisite: ECON 2143 or (ECON 2013 and ECON 2023). (Typically offered: Fall)

INST 3903. Crossing Borders: Transnationalism and Intercultural Transfer. 3 Hours.
Study of Transnational Theory and the concept of Intercultural Transfer Studies. Focuses on intercultural transfers of ideas, concepts, and models for political, social, economic, and cultural advancement. (Typically offered: Irregular)

INST 399VH. Honors Thesis. 1-6 Hour.
To be used for completing an International Studies Honors Thesis. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## INST 4003. Special Topics in International and Global Studies. 3 Hours.

Intensive study of key global issues or aspects of international affairs. Prerequisite: INST 2813 or PLSC 2813. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## INST 4003H. Honors Special Topics in International and Global Studies. 3

 Hours.Intensive study of key global issues or aspects of international affairs. Prerequisite: INST 2813 or PLSC 2813 and honors standing. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to INST 4003.
INST 406V. Independent Study in International Studies. 1-6 Hour. Independent study in international studies. Arranged in agreement and under the guidance of a faculty member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## INST 4103H. Honors Geography of Political Violence. 3 Hours.

This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextuallyinformed understanding of the international system and how it is shaped by civil war. Pre- or Corequisite: INST 2813. Prerequisite: Junior or senior standing and honors standing. (Typically offered: Fall Even Years)
This course is cross-listed with GEOS 4493.
INST 4603. Peace Studies: Approaches and Theory. 3 Hours.
Exploration of key theories, concepts, and methodological approaches within the interdisciplinary field of peace studies. Emphasis on historical and contemporary concepts of peace, conflict, violence, and justice; the institutions, legal frameworks, and intercultural norms facilitating peace; and the practical application of theory to strategic peace building. (Typically offered: Spring Odd Years)
INST 4653. International Food Security and Food Sovereignty. 3 Hours. Explores the concepts of food security and food sovereignty and the ways in which humans have addressed issues related to hunger. Focus on the contemporary international cultural, social, and political discussion of future problems and solutions. (Typically offered: Irregular)

INST 4693. Approaching Global History. 3 Hours.
Explores theoretical perspectives on global history through a treatment of the historiographical development of the field, readings of landmark texts, and selected case studies of global themes. (Typically offered: Irregular)
This course is cross-listed with HIST 4693.
INST 4793. Eugenics in Global Perspective. 3 Hours.
Exploration of Social Darwinist thought and eugenics policy as global phenomena in the nineteenth and twentieth centuries. (Typically offered: Irregular)

INST 4873. International Communication and Globalization. 3 Hours.
Examines aspects of international communication and the impact of globalization on the production, dissemination, and consumption of media technology and messages. (Typically offered: Irregular)

## INST 4893. International Negotiation and Mediation. 3 Hours.

This course examines international negotiations and mediation. International negotiation refers to the processes and methods by which state and non-state actors reach agreements through persuasion and similar non-violent means. This course analyzes the processes, methods, and mechanisms, and challenges of international negotiations and the growing use of mediation. (Typically offered: Irregular) This course is cross-listed with PLSC 4893.
INST 4913. International Studies Seminar. 3 Hours.
Intensive study of key global issues and aspects of international affairs, culminating in a research project. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

## INST 4913H. Honors International Studies Seminar. 3 Hours.

Intensive study of key global issues and aspects of international affairs, culminating in a research project. Prerequisite: Honors and junior standing. (Typically offered: Fall and Spring)
This course is equivalent to INST 4913.
INST 493V. Global Changemakers: Social Innovation Abroad. 3-6 Hour. Exploration of selected global issues and social innovation techniques through collaborative engagement with domestic and international entities. Focus on initiatives addressing global issues at the local or regional level. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

INST 493VH. Honors Global Changemakers: Social Innovation Abroad. 3-6 Hour.
Exploration of selected global issues and social innovation techniques through collaborative engagement with domestic and international entities. Focus on initiatives addressing global issues at the local or regional level. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to INST 493V.

## Jewish Studies (JWST)

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Jewish Studies Website (https://fulbright.uark.edu/programs/jewishstudies/)

The Jewish Studies minor introduces students to Jewish history, thought, and lifeways, through the millennia and around the globe. Students take courses introducing them to the basic tenets of Judaism, to fundamentals of Jewish languages (Aramaic, Biblical Hebrew, Modern Hebrew, and Yiddish), and to major strands in European, American, and Middle Eastern Jewish thought. Affiliated courses will cover Jewish literature; religious dialogue and history; current politics; ancient, medieval, early modern, and modern Jewish history; and discourse on gender, multiculturalism, and social justice. Jewish Studies offers a broad interdisciplinary context of coursework that can complement most programs of study.

Requirements for a Minor in Jewish Studies: Students who minor in Jewish Studies will take JWST 2003 Introduction to Judaism, a 3-credit hour introductory interdisciplinary course that lays out historical, religious, cultural, linguistic, and philosophical foundations and questions critical
to any exploration of any branch of Jewish Studies. Students must take an additional 12 hours of elective coursework from among options listed below. Other courses with significant Jewish Studies-related content and the possibility for an additional Jewish Studies project (for example Religious Studies courses, Middle East Studies courses, or appropriate literature or cinema courses), subject to approval by the chair of the Jewish Studies program, will also be considered.

| JWST 2003 | Introduction to Judaism | 3 |
| :--- | :--- | ---: |
| Choose 12 hours from the following: |  |  |
| GERM 4013 | Germany and the Holocaust: The Significance of <br> the Holocaust in Differentiated Contexts |  |
| GREK 4093 | Biblical and Patristic Greek |  |
| GREK 2003 | Intermediate Ancient Greek I |  |
| HIST 3043 | History of the Modern Middle East |  |
| HIST 3473 | Palestine and Israel in Modern Times |  |
| HIST 4143 | Intellectual History of Europe Since the |  |
| HIST 4203 | Enlightenment |  |
| HIST 4493 | Religion in America to 1860 the Holocaust |  |
| HUMN 425V | Colloquium (The Land of Israel in Jewish Thought) |  |
| HUMN 425V | Colloquium (Jewish-Christian Relations) |  |
| HUMN 425V | Colloquium (Intensive Biblical Hebrew) |  |
| JWST 3103 | Introduction to Jewish Languages |  |
| JWST 4003 | Modern Jewish Thought |  |
| JWST 4013 | Contemporary Jewish Thought |  |
| JWST 470V | Special Topics in Jewish Studies |  |
| JWST 475V | Independent Investigations in Jewish Studies |  |
| MRST 3013 | Special Topics in Medieval Studies |  |

Total Hours
15

## Courses

JWST 2003. Introduction to Judaism. 3 Hours.
An introduction to the practices, teachings, and scriptures of Judaism, focusing on the post-Biblical period up to the present. (Typically offered: Fall Odd Years)

## JWST 3103. Introduction to Jewish Languages. 3 Hours.

An introduction to the alphabet, grammar, syntax, and basic vocabulary of Hebrew, Jewish Aramaic and Yiddish. (Typically offered: Fall Even Years)

## JWST 4003. Modern Jewish Thought. 3 Hours.

A survey of the main trends in Jewish thought from the seventeenth through the nineteenth century. (Typically offered: Irregular)
This course is cross-listed with PHIL 4103.

## JWST 4013. Contemporary Jewish Thought. 3 Hours.

A survey of trends in Jewish thought in the twentieth and twenty-first centuries, focusing on the ways in which Jewish thinkers have responded to the events affecting Jews and the conditions of Jewish life in from approximately 1900 to the present. (Typically offered: Spring Odd Years)
This course is cross-listed with PHIL 4313.
JWST 470V. Special Topics in Jewish Studies. 1-3 Hour.
Irregular course offerings that focus on a specialized area of Jewish Studies not covered in depth in regular JWST or affiliated courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## JWST 475V. Independent Investigations in Jewish Studies. 1-3 Hour.

This course can be offered to allow a student to pursue reading and research on a topic of interest not covered in regular JWST courses. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## Journalism and Strategic Media (JOUR)

## New Location

The undergraduate program in journalism has moved to a new page (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/journalism-strategic-media/). Please update your bookmark.

# Latin American and Latino Studies (LALS) 

Yajaira M. Padilla
Director of Studies
723 Kimpel Hall
479-575-4301

Latin American and Latino Studies Website (https://fulbright.uark.edu/ area-studies/latin-american-and-latino-studies/)

Students interested in Latin America and wishing to maximize their potential for academic, business, professional, or government careers related to the area, may earn a second major or a minor in Latin American and Latino studies together with a primary major in another discipline in Fulbright College. Advice on appropriate combinations of Latin American and Latino studies with other primary majors as well as individual approval of such combinations may be obtained from the Latin American and Latino studies program director. New students in this program must officially declare both majors and notify the Latin American and Latino studies program director. Degree checks must also be cleared with the program director. Freshmen and sophomores considering this program are advised to begin their study of Spanish or Portuguese as early as possible.

## Requirements for a Second Major in Latin American and Latino Studies

In addition to the requirements of a primary departmental major, students pursuing a second major in Latin American and Latino Studies must complete the following:

Language Competence: The student must complete SPAN 2013, PORT 2013, or equivalent. Provisions are available for recognition of language skills gained by other means than formal course work taken at the University of Arkansas: See information under the entry in the department of world languages. Further functional work in Spanish or Portuguese as well as study and residence in a Latin American nation can serve to strengthen language competence and are encouraged.

Colloquium: The student must complete at least three hours in the interdepartmental colloquium, LALS 4003. The Colloquium may be repeated, with the adviser's approval, provided the topic is different.

Electives: The student must complete 18 hours, in addition to LALS 4003, in courses with specific Latin American or Latino content, or individualized study options under instructors teaching Latin American or Latino Studies. Students choosing to take individualized readings or
directed research courses must obtain the approval of the director of the area studies program. In the selection of the electives, the following conditions apply:

1. Courses must be selected from at least three different departments,
2. A maximum of nine hours may be submitted from courses taken in any one department.

The following courses and individualized study options may be taken in fulfillment of elective requirements:

Anthropology

| ANTH 2013 | Introduction to Latin American Studies | 3 |
| :--- | :--- | :--- |
| ANTH 3553 | Religion in Latin America | 3 |
| ANTH 4263 | Identity and Culture in the U.S.-Mexico | 3 |

Art History
ARHS 4563 Pre-Columbian Art 3

ARHS 4563H Honors Pre-Columbian Art 3
ARHS 4573 Artists of New Spain 3
ARHS 4573H Honors Artists of New Spain 3
Economics
ECON 3843 Economics of the Developing World 3
ECON 3853 Emerging Markets 3
English
ENGL 3543 Topics in U.S. Latino/Latina Literature and Culture 3 (English)
ENGL 4523 Studies in U.S. Latino/Latina Literature and Culture 3

## History

HIST 3073
HIST 3193 The Making of the Modern Caribbean 3
HIST 3203 Colonial Latin America 3
HIST 3213 Modern Latin America 3
HIST 3283 U.S. Latinos and Latinas through Film 3
HIST 3303 U.S. Immigration History 3
HIST 3313 Latinos and Latinas in the U.S. 3
HIST 4173 The Latin American City 3
HIST 3363 The Atlantic World, 1400-1850 3
HIST 4443 Frontiers and Borderlands in Colonial Latin 3
America
HIST 4743 The Cold War in Latin America: Revolutions, 3 Violence, and Politics
HIST $4783 \quad 3$
HIST 4813 Africans and Slavery in Colonial Latin America 3
HIST 4823 Black Freedom in the Age of Emancipation 3
Latin American and Latino Studies
LALS 2013 Introduction to Latin American and Latino Studies 3
LALS 399VH Honors Thesis 1-6
LALS 4003 Latin American Studies Colloquium 3
Music
MUHS 4253 Capstone Project Seminar (Latin American Music) 3
Political Science
PLSC 3263 Latino Politics 3
PLSC 3573 Governments and Politics of Latin America 3
PLSC 4793 Latino/Hispanic Political Thought 3

| Portuguese |  | 3 |
| :--- | :--- | ---: |
| PORT 3013 | Brazilian Cinema | 3 |
| PORT 3103 |  | 3 |
| PORT 3203 | Brazilian Cultural and Social Issues |  |
| Sociology |  | 3 |
| SOCI 3173 | Latinos, Migration, and the U.S. South |  |
| Spanish |  | 3 |
| SPAN 3103 | Cultural Readings | 3 |
| SPAN 3113 | Introduction to Literature | 3 |
| SPAN 3123 | Spanish for Heritage Speakers II | 3 |
| SPAN 4133 | Survey of Spanish-American Literature I | 3 |
| SPAN 4193 | Survey of Spanish-American Literature II | 3 |
| SPAN 4223 | Latin American Civilization | 3 |
| SPAN 4243 | Literature and Culture in the Hispanic United | 3 |
|  | States |  |
| SPAN 4253 | Latin American Cinema and Society | 3 |
| SPAN 475V | Special Investigations | $1-6$ |
| SPAN 5253 | Colonial Literature and Culture | 3 |
| SPAN 5393 | 19th Century Spanish American Literature | 3 |
| SPAN 5463 | 20th Century Spanish American Literature | 3 |
| SPAN 5703 | Special Topics | 3 |
| SPAN 5943 | U.S. Latino/a Literatures and Cultures | 3 |

## Requirements for a Minor in Latin American and Latino Studies:

Students wishing to minor in Latin American and Latino Studies must fulfill the Colloquium (LALS 4003) and the language requirements described in the combined major, and must complete at least 12 hours from among the electives listed in the combined major. Electives must include courses from at least two different academic departments. Included in the 12 hours may be 3 additional hours of LALS 4003, provided the topic is different.

Requirements for Honors in Latin American and Latino Studies: The Honors Program in Latin American and Latino Studies gives junior and senior students of high ability the opportunity to enroll in enriched courses and conduct independent research culminating in an honors thesis. In addition to satisfying the general Fulbright College requirements for graduation and the basic eligibility requirements for honors as established by the Honors Council, candidates for honors in Latin American and Latino Studies must complete 12 hours of honors credit in partial satisfaction of requirements for the co-major. One to six of these may be thesis hours (LALS 399VH). The preferred method for satisfying the remaining hours is to enroll in the colloquium at least once for honors credit (LALS 4003H) and to take relevant honors colloquia or graduate courses (with permission) in one of the departments contributing to this interdisciplinary area study. The thesis committee shall include a representative from the major discipline (in the case of multiple majors, from the discipline contributing most significantly to the topic). Successful completion of these requirements will be recognized by the award of the distinction "Latin American and Latino Studies Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Courses

LALS 2013. Introduction to Latin American and Latino Studies. 3 Hours.
Provides an interdisciplinary introduction to Latin America and the Latino United States. Drawing on Latin American and/or Latino literature, film, art, history, sociology, anthropology, and political science, this course examines the broad forces that have shaped the region and/or the U.S. Latino experience. (Typically offered: Fall and Spring)

LALS 3013. Special Topics in Latin American and Latino Studies. 3 Hours. Courses with a varying disciplinary focus on topics related to Latin American and Latino Studies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## LALS 3203. Colonial Latin America. 3 Hours.

An introduction to the social, cultural, political and economic formation of Latin America, during the period from 1492 to the movements for independence. (Typically offered: Fall Odd Years)
This course is cross-listed with HIST 3203.

## LALS 3213. Modern Latin America. 3 Hours.

An investigation of the varying courses of modernization in Latin America, covering popular revolution, urban populism and military dictatorship. (Typically offered: Spring Even Years)
This course is cross-listed with HIST 3213.
LALS 3253. The Latinx Image in Media. 3 Hours.
Exploration of the image and experience(s) of Latinx populations in the United States as represented in visual and print media, including film, television, news journalism, and art. Topics related to US Latinx history, culture, politics, and socioeconomics will be examined in the analyses of these mediated depictions. (Typically offered: Irregular)
This course is equivalent to ENGL 3253.

## LALS 3283. U.S. Latinos and Latinas through Film. 3 Hours.

This course will examine the portrayal of U.S. Latinos and Latinas in Hollywood films and how those images have changed over time. While coverage will extend to the early years of the twentieth century, the chosen films will place particular emphasis on the century's second half, from the Cold War to the modern day. (Typically offered: Spring)
This course is cross-listed with COMM 3283, HIST 3283.
LALS 3303. U.S. Immigration History. 3 Hours.
Examines the migration of ethnic groups into the United States from geographical areas that include Europe, Asia, Africa, and Latin America. Special emphasis will be given to cultural history, and will trace the impact of industrialization, urbanization, class formation, and popular culture on various ethnic groups. (Typically offered: Irregular)
This course is cross-listed with HIST 3303.
LALS 3313. Latinos and Latinas in the U.S.. 3 Hours.
Examines the emergence and growth of the Latino population of the United States. A broad survey of the Latino experience will complement more specific case studies focusing on cultural identity and the generational process of acculturation into the American mainstream. (Typically offered: Fall)
This course is cross-listed with HIST 3313.
LALS 3373. Rise of the American Empire: War, Migration and Expansion, 1789-1917. 3 Hours.
Explores the history of U.S. expansion and imperialism from the nation's founding to the start of World War I. It proceeds both chronologically and thematically, considering the evolution of U.S. imperialism and its various manifestations territorial, political, economic, and cultural. (Typically offered: Irregular)
This course is cross-listed with HIST 3373.

LALS 3543. Topics in U.S. Latino/Latina Literature and Culture. 3 Hours. The study of works of U.S. Latino/Latina literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to ENGL 3543.

## LALS 3553. Religion in Latin America. 3 Hours.

Examines contemporary implications of Latin America's unique religious heritage. An exploration of multiple Latin American religious traditions, with sustained focus on key theoretical concerns: conversion, vernacular vs. orthodox expressions, the blending of indigenous and European cosmologies, devotion and ritual, and the articulation of ethnic, gendered, and religious identities. (Typically offered: Irregular) This course is cross-listed with ANTH 3553.

LALS 399VH. Honors Thesis. 1-6 Hour.
Honors thesis research hours. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

LALS 4003. Latin American Studies Colloquium. 3 Hours.
An interdepartmental colloquium with an annual change in subject of investigation, required of all Latin American studies majors. Prerequisite: Sophomore standing for Latin American and Latino Studies majors. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

## LALS 4003H. Honors Latin American Studies Colloquium. 3 Hours.

An interdepartmental colloquium with an annual change in subject of investigation. Prerequisite: Sophomore standing and honors standing for Latin American and Latino Studies majors. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to LALS 4003.
LALS 4263. Identity and Culture in the U.S.-Mexico Borderlands. 3 Hours. An exploration of the interplay between Latino/a, Mexican, Anglo, and Native American identities and cultures along the U.S.-Mexico border. Course examines identity formation, hybridity, social tension, marginalization, race and gender, from an anthropological perspective, paying special attention to the border as theoretical construct as well as material reality. (Typically offered: Irregular)
This course is cross-listed with ANTH 4263.
LALS 4443. Frontiers and Borderlands in Colonial Latin America. 3 Hours. This course examines frontiers and borderlands in colonial Latin America and focuses on the regions of California, New Mexico, Texas, Brazil, and the Río de la Plata. It demonstrates that frontiers and borderlands are defined by the absence of a hegemonic European power and associated with the prevalence of Indigenous norms. (Typically offered: Irregular)
This course is cross-listed with HIST 4443.
LALS 4523. Studies in U.S. Latino/Latina Literature and Culture. 3 Hours. The study of works of U.S. Latino/a literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is equivalent to ENGL 4523.

LALS 4713. Women, Gender, and Sexuality in Colonial Latin America. 3 Hours. This course examines women, gender, and sexuality in colonial Latin America. It explores the lives of indigenous, Spanish, African, and mixed-race women from all social ranks. A central question is: does the current status of women in Latin America stem from a colonial legacy of gender oppression and sexual repression? (Typically offered: Irregular)
This course is cross-listed with HIST 4713.

LALS 4743. The Cold War in Latin America: Revolutions, Violence, and Politics. 3 Hours.
This course will trace the rise of the ideological and political struggles over social and economic development and the security regimes designed to thwart socialist revolution and political mobilization. The influence of the United States in Latin American security regimes and "containment" activities will receive special attention. (Typically offered: Irregular)
This course is cross-listed with HIST 4743.
LALS 4813. Africans and Slavery in Colonial Latin America. 3 Hours. Explores the diverse experiences of slaves and free Blacks in colonial Spanish and Portuguese America from 1500 to around 1888, demonstrating that bondage and the practice of African slavery was a pillar of political authority in colonial Latin America. (Typically offered: Irregular)
This course is cross-listed with AAST 4813, HIST 4813.

## LALS 4853. Latin American Landscapes. 3 Hours.

This course studies the shaping of urban Latin American Landscapes by investigating, problematizing, and analyzing their diverse social, cultural, economic, and environmental conditions as reflected in the built realm. The main scope of study is the conception, origins, meaning, function, and performance of public spaces and landscapes in the continent. (Typically offered: Spring)
This course is cross-listed with LARC 4853.

## Mathematical Sciences (MASC)

## Matt Clay

Chair of the Department
309 Science Engineering Building
479-575-5195
Department of Mathematical Sciences Website (http://fulbright.uark.edu/ departments/math/)

The Department of Mathematical Sciences is committed to high-level mathematics instruction, preparing students for careers in secondary education, actuarial science and industry, and for entrance into graduate studies in mathematics and statistics. The department offers two majors, one leading to a Bachelor of Arts degree and a second leading to a Bachelor Science degree.

The Bachelor of Arts degree is often sought by future secondary education majors or by students wishing a broader exposure to the humanities. The Bachelor of Science degree is sought by students who intend to go on to graduate studies or who would like a deeper and broader understanding of higher mathematics. The Department of Mathematical Sciences is committed to the values of a broad, interdisciplinary education, highlighting the utility and value of the mathematics degree in a wide variety of careers and disciplines.

Enrollment in or completion of any course at the level of MATH 2554 or higher is required to enter into the mathematics program.

Requirements for a Major in Mathematics, B.A. Degree: Students must complete 120 degree credit hours to include the minimum University Core requirements (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/), the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), and the following course requirements. Bolded courses from the list below may be applied to portions of the University Core requirements.

Eight hours from the following science courses:
ANTH 1013 Introduction to Biological Anthropology
\& ANTH 1011L and Introduction to Biological Anthropology Laboratory

| ASTR 2003 <br> \& ASTR 200 | Survey of the Universe (ACTS Equivalency = PHSC 1204 Lecture) <br> and Survey of the Universe Laboratory (ACTS <br> Equivalency = PHSC 1204 Lab) |
| :---: | :---: |
| BIOL 1543 <br> \& BIOL 1541L | Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS <br> Equivalency = BIOL 1014 Lab) |
| BIOL 1603 <br> \& BIOL 1601L | Principles of Zoology (ACTS Equivalency = BIOL 1054 Lecture) <br> and Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab) |
| BIOL 1613 <br> \& BIOL 1611L | ```Plant Biology (ACTS Equivalency = BIOL 1034 Lecture) and Plant Biology Laboratory (ACTS Equivalency = BIOL 1034 Lab)``` |
| BIOL 2013 <br> \& BIOL 2011L | General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) <br> and General Microbiology Laboratory (ACTS <br> Equivalency = BIOL 2004 Lab) |
| CHEM 1103 <br> \& CHEM 1101L | University Chemistry I (ACTS Equivalency = LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) |
| CHEM 1123 <br> \& CHEM 1121L | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |
| GEOS 1113 <br> \& GEOS 1111L | ```Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)``` |
| GEOS 1133 <br> \& GEOS 1131L | ```Earth Science (ACTS Equivalency = GEOL }112 LLecture) and Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)``` |
| PHYS 2054 | University Physics I (ACTS Equivalency = PHYS 2034) |
| PHYS 2074 | University Physics II (ACTS Equivalency = PHYS 2044 Lecture) |

An approved course with substantial programming experience, 3-4 typically satisfied by CSCE 2004. Other courses may be applied towards this requirement with prior departmental approval.
Completion of a minor other than in Mathematics or Statistics,15-30+ completion of the STEM Education minor, completion of an additional major or completion of the Four-Year Fulbright Honors Core for a Bachelor of Arts. Hours required will vary.
Major Course Requirements

| MATH 2574 | Calculus III (ACTS Equivalency = MATH 2603) <br> (MATH 2554 and MATH 2564 are prerequisites) | 4 |
| :--- | :--- | :--- |
| MATH 2803 | Transition to Advanced Mathematics | 3 |
| MATH 3093 | Abstract Linear Algebra | 3 |
| MATH 3113 | Introduction to Abstract Algebra I | 3 |
| MATH 3513 | Elementary Analysis | 3 |
| MATH 4933 | Mathematics Major Seminar ( ) | 3 |

Twelve semester hours of courses in mathematics selected from 12 MATH 2584, CSCE 4133 or MATH and STAT courses numbered at the 3000-level or higher.

The completion of a senior writing project under the direction of a faculty member. This is typically carried out in MATH 4933, or is satisfied by an honors thesis.
It is recommended that MATH 2803 be taken as early as possible in the program.

## Mathematics B.A.

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1,2}$ | 4 |  |
| Fine Arts or Humanities State Minimum Core requirement (Satisfies General Education Outcome 3.1 or 3.2$)^{3,4}$ | 3 |  |
| Social Science State Minimum Core requirement (Satisfies General Education Outcome 3.3) ${ }^{5}$ | 3 |  |
| General Elective or coursework to be applied towards minor (as needed) | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) ${ }^{1}$ |  | 4 |
| MATH 2803 Transition to Advanced Mathematics ${ }^{1}$ |  | 3 |
| General elective or coursework to be applied towards minor (as needed) |  | 4 |
| Year Total: | 16 | 14 |
| Second Year |  | Units |
|  | Fall | Spring |
| MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) ${ }^{1}$ | 4 |  |
| MATH 3093 Abstract Linear Algebra ${ }^{1,6}$ | 3 |  |
| Social Sciences State Minimum Core requirement (Select a course which satisfies General Education Outcomes 3.3 and 4.1) ${ }^{7}$ | 3 |  |
| U.S. History or Government State Minimum Core requirement (Satisfies General Education Outcome 4.2) | 3 |  |
| General Elective or coursework to be applied towards minor (as needed) | 3 |  |
| CSCE 2004 Programming Foundations I |  | 4 |
| MATH/STAT Elective above 3000 level ${ }^{1,6}$ |  | 3 |

Science State Minimum Core Lecture with Corequisite Lab requirement (Satisfies General Education Outcome 3.4)
Humanities or Fine Arts State Minimum Core requirement (as needed) (Satisfies General Education Outcome 3.2 or 3.1$)^{4,3}$
Year Total:
16

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 3113 Introduction to Abstract Algebra I ${ }^{1,6}$ | 3 |  |
| Social Sciences State Minimum Core requirement (Select a course which satisfies General Education Outcomes 3.3 and 5.1) ${ }^{8}$ | 3 |  |
| Science University/State Core Lecture with Corequisite Lab requirement (Satisfies General Education Outcome 3.4) | 4 |  |
| General Electives or coursework to be applied towards minor (as needed) | 6 |  |
| MATH 3513 Elementary Analysis ${ }^{1,6}$ |  | 3 |
| MATH/STAT Elective above 3000 Level ${ }^{1,6}$ |  | 3 |
| General Electives or coursework to be applied towards minor (as needed) |  | 9 |
| Year Total: | 16 | 15 |


| Fourth Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH/STAT Elective Above 3000 level ${ }^{1,6}$ | 6 |  |
| General Elective or coursework to be applied towards minor (as needed) | 3 |  |
| 3000-4000 Level Electives ${ }^{1}$ | 6 |  |
| MATH 4933 Mathematics Major Seminar (Satisfies General Education Outcomes 1.2 and 6.1$)^{1,6}$ |  | 3 |
| MATH/STAT Elective Above 3000 Level ${ }^{1,6}$ |  | 3 |
| General Electives As Needed |  | 8 |
| Year Total: | 15 | 14 |

## Total Units in Sequence:

120
${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273).
${ }^{2}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
${ }^{3}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013 H.
${ }^{4}$ The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations (p. 273).
7 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{8}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2813, or PLSC 2813H.

## Requirements for a Major in Mathematics, B.S. Degree:

Students must complete 120 degree credit hours to include the minimum University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/), the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), and the following liberal arts and major course requirements. Bolded courses from the list below may be applied to portions of the University Core requirements.

Eight total hours from one of the following natural science sequences:

## Biology:

BIOL 1543 Principles of Biology (ACTS Equivalency = \& BIOL 1541L BIOL 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
and choose one of the following:
BIOL 1603 Principles of Zoology (ACTS Equivalency = \& BIOL 1601L BIOL 1054 Lecture) and Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab)
BIOL 1613 Plant Biology (ACTS Equivalency = BIOL 1034
\& BIOL 1611L Lecture)
and Plant Biology Laboratory (ACTS
Equivalency = BIOL 1034 Lab)
BIOL 2013 General Microbiology (ACTS Equivalency = \& BIOL 2011L BIOL 2004 Lecture)
and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)
Chemistry:
CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture)
and University Chemistry I Laboratory (ACTS
Equivalency = CHEM 1414 Lab)
and

| CHEM 1123 <br> \& CHEM 1121 | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |
| :---: | :---: |
| Geology: |  |
| GEOS 1113 <br> \& GEOS 1111L | ```Physical Geology (ACTS Equivalency = GEOL L1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)``` |
| and |  |
| GEOS 1133 \& GEOS 1131L | ```Earth Science (ACTS Equivalency = GEOL 1124 LLecture) and Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)``` |
| Physics: |  |
| PHYS 2054 | University Physics I (ACTS Equivalency = PHYS 2034) |
| and |  |
| PHYS 2074 | University Physics II (ACTS Equivalency = PHYS 2044 Lecture) |

Completion of eight additional hours at the 3000-level or higher 8-30+ not in Mathematics or Statistics chosen with department approval, completion of the UAteach curriculum, or completion of the Fulbright Four Year Honors Core for a Bachelor of Science degree. (Hours required will vary.)

As a part of the requirements for a B.S. degree with a major in mathematics, the student must also complete the following 27 hours:


## Concentration 1 (Applied)

A program for the student who wishes to prepare for either applied work in mathematics or graduate work in mathematical sciences or some other field. Requirements:

| STAT 3013 | Introduction to Probability | 3 |
| :--- | :--- | :--- |
| MATH 4423 | Introduction to Partial Differential Equations | 3 |
| or MATH 3583 Foundations of Applied Mathematics |  |  |
| MATH 4353 | Numerical Linear Algebra | 3 |
| MATH 4363 | Numerical Analysis | 3 |

Two MATH or STAT electives numbered 3000 or higher (students 6 may also take CSCE 4133)

## Total Hours

## Mathematics, B.S., Concentration 1 (Applied) Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program.

Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 4 |  |
| MATH 2554 Calculus I (ACTS Equivalency |  |  |
| $=$ MATH 2405) (Satisfies General Education |  |  |
| Outcome 2.1), <br> U.S. History or Government State Minimum Core | 3 |  |

requirement (Satisfies General Education Outcome 3

## 4.2)

Social Sciences State Minimum Core requirement 3
(Satisfies General Education Outcome 3.3) ${ }^{3}$
General elective or coursework, as needed
3
ENGL 1023 Composition II (ACTS Equivalency 3
= ENGL 1023) (Satisfies General Education Outcome 1.1)
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) ${ }^{1}$
MATH 2803 Transition to Advanced Mathematics 3
Science State Minimum Core lecture with 4
corequisite lab requirement (Satisfies General
Education Outcome 3.4)
Year Total: 16

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 2574 Calculus III (ACTS Equivalency | 4 |  |
| MATH 2603) $^{1}$ |  |  |
| CSCE 2004 Programming Foundations I |  |  |
| Social Sciences State Minimum Core requirement | 4 |  |


| (Satisfies General Education Outcomes 3.3 and |  |
| :--- | :--- |
| $4.1)^{4}$ | 4 |
| Science State Minimum Core lecture with $^{\text {corequisite lab requirement (Satisfies General }}$ |  |
| Education Outcome 3.4) |  |
| MATH 2584 Elementary Differential Equations |  |
| MATH 3093 Abstract Linear Algebra |  |
| Social Sciences State Core requirement (Satisfies | 4 |
| General Education Outcomes 3.3 and 5.1) |  |

Fine Arts or Humanities State Minimum Core requirement, as needed (Satisfies General Education Outcome 3.1 or 3.2$)^{7,8}$
General Elective or coursework, as needed

Year Total:

15

Units
Fall Spring
3
3
3
MATH 4423 Introduction to Partial Differential
Equations
or MATH 3583 Foundations of Applied
Mathematics
General Electives or coursework, as needed MATH 4353 Numerical Linear Algebra ${ }^{1,5}$
MATH or STAT Electives numbered 3000 or higher, or CSCE 4133
Humanities or Fine Arts State Minimum Core requirement, as needed (Satisfies General Education Outcome 3.2 or 3.1$)^{7,8}$
General Electives or coursework, as needed Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 4513 Advanced Calculus ${ }^{1,5}$ | 3 |  |
| MATH 4363 Numerical Analysis ${ }^{1,5}$ | 3 |  |
| MATH or STAT Electives numbered 3000 or | 3 |  | higher, or CSCE 4133

General Electives or coursework, as needed
MATH 4933 Mathematics Major Seminar (Satisfies
General Education Outcomes 1.2 and 6.1) ${ }^{1,5}$
General Electives or coursework, as needed to
complete 120 degree credit hours
Year Total:
15

## Total Units in Sequence:

120
${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273).
${ }^{2}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
3 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H,

PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ Meets 24 -hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations (p. 273).
${ }^{6}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2813, or PLSC 2813H.
${ }^{7}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{8}$ The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Requirements for a Major in Mathematics, B.S. Degree:

Students must complete 120 degree credit hours to include the minimum University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/), the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), and the following liberal arts and major course requirements. Bolded courses from the list below may be applied to portions of the University Core requirements.

Eight total hours from one of the following natural science sequences: 8

## Biology:

BIOL 1543 Principles of Biology (ACTS Equivalency = \& BIOL 1541L BIOL 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
and choose one of the following:
BIOL 1603 Principles of Zoology (ACTS Equivalency =
\& BIOL 1601L BIOL 1054 Lecture)
and Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab)
BIOL 1613 Plant Biology (ACTS Equivalency = BIOL 1034
\& BIOL 1611L Lecture)
and Plant Biology Laboratory (ACTS
Equivalency = BIOL 1034 Lab)
BIOL 2013 General Microbiology (ACTS Equivalency = \& BIOL 2011L BIOL 2004 Lecture)
and General Microbiology Laboratory (ACTS
Equivalency = BIOL 2004 Lab)
Chemistry:
CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture)
and University Chemistry I Laboratory (ACTS
Equivalency = CHEM 1414 Lab)
and

| CHEM 1123 <br> \& CHEM 1121 | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |
| :---: | :---: |
| Geology: |  |
| GEOS 1113 <br> \& GEOS 1111L | ```Physical Geology (ACTS Equivalency = GEOL L1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)``` |
| and |  |
| GEOS 1133 <br> \& GEOS 1131 | ```Earth Science (ACTS Equivalency = GEOL 1124 LLecture) and Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)``` |
| Physics: |  |
| PHYS 2054 | University Physics I (ACTS Equivalency = PHYS 2034) |
| and |  |
| PHYS 2074 | University Physics II (ACTS Equivalency = PHYS 2044 Lecture) |

Completion of eight additional hours at the 3000-level or higher 8-30+ not in Mathematics or Statistics chosen with department approval, completion of the UAteach curriculum, or completion of the Fulbright Four Year Honors Core for a Bachelor of Science degree. (Hours required will vary.)

As a part of the requirements for a B.S. degree with a major in mathematics, the student must also complete the following 27 hours:

| MATH 2574 | Calculus III (ACTS Equivalency = MATH 2603) | 4 |
| :--- | :--- | :--- |
| MATH 2584 | Elementary Differential Equations | 4 |
| MATH 2803 | Transition to Advanced Mathematics | 3 |
| MATH 3093 | Abstract Linear Algebra | 3 |
| MATH 3113 | Introduction to Abstract Algebra I | 3 |
| MATH 4513 | Advanced Calculus I | 3 |
| MATH 4933 | Mathematics Major Seminar | 3 |
| CSCE 2004 | Programming Foundations I | 4 |
| And the completion of a senior writing project under the direction of a | 3 |  |
| faculty member. |  |  |

## Concentration 2 (Pure)

A program for the student who is seeking a broad background in mathematics or who wishes to study mathematics at the graduate level.
Requirements:
Students must select three courses for a total of nine hours from the

## following list:

| MATH 3203 | Number Theory |
| :--- | :--- |
| MATH 4113 | Introduction to Abstract Algebra II |
| MATH 4503 | Differential Geometry |
| MATH 4523 | Advanced Calculus II |


| MATH $4443 \quad$ Complex Variables | 3 |
| :--- | :--- | :--- |
| Two MATH or STAT electives numbered 3000 or higher (students | 6 |
| may also take CSCE 4133). |  |

Total Hours

## Mathematics, B.S., Concentration 2 (Pure) Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| MATH 2554 Calculus I (ACTS Equivalency | 4 |  |
| $=$ MATH 2405) (Satisfies General Education |  |  |
| Outcome 2.1) |  |  |
| Science State Minimum Core lecture with <br> corequisite lab requirement (Satisfies General | 4 |  |
| Education Outcome 3.4) |  |  |
| Social Sciences State Minimum Core requirement | 3 |  |

(Satisfies General Education Outcome 3.3)
ENGL 1023 Composition II (ACTS Equivalency 3
= ENGL 1023) (Satisfies General Education Outcome 1.1)
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) ${ }^{1}$
MATH 2803 Transition to Advanced Mathematics ${ }^{1} 3$
Science State Minimum Core lecture with 4
corequisite lab requirement (Satisfies General
Education Outcome 3.4)
Year Total: 14
14

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 2574 Calculus III (ACTS Equivalency = | 4 |  |
| MATH 2603) $^{1}$ |  |  |
| MATH 3093 Abstract Linear Algebra $^{1,4}$ | 3 |  |
| U.S. History or Government State Minimum Core | 3 |  |

3
requirement (Satisfies General Education Outcome 4.2)

Fine Arts or Humanities State Minimum Core 3
requirement, as needed (Satisfies General
Education Outcome 3.1 or 3.2) ${ }^{5,6}$
General elective or coursework, as needed
MATH 2584 Elementary Differential Equations ${ }^{1,4} 4$
MATH or STAT Elective numbered 3000 or 3
higher ${ }^{1,4}$
CSCE 2004 Programming Foundations I 4
General elective or coursework, as needed 4

Year Total:
Third Year
MATH 3113 Introduction to Abstract Algebra I,
MATH 4503 Differential Geometry (Or MATH/S
3000+ if not taking MATH 4503)
Humanities or Fine Arts State Minimum Core
requirement, as needed (Satisfies General
Education Outcome 3.2 or 3.1$)^{5,6}$
General Electives or coursework, as needed
MATH 4113 Introduction to Abstract Algebra II (
MATH/STAT 3000+ if not taking MATH 4113)
MATH or STAT Elective numbered 3000 or higher ${ }^{1,4}$
Social Sciences State Minimum Core requirement (Select a course which satisfies General Education Outcomes 3.3 and 4.1) ${ }^{7}$
General Electives or coursework, as needed Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 4443 Complex Variables ${ }^{1,4}$ | 3 |  |
| MATH 4513 Advanced Calculus 1,4 | 3 |  |
| MATH 3203 Number Theory | 3 |  |
| Social Sciences State Minimum Core requirement <br> (Select a course which satisfies General Education | 3 |  |
| Outcomes 3.3 and 5.1) |  |  |
| MATH 4933 Mathematics Major Seminar (Satisfies <br> General Education Outcomes 1.2 and 6.1), |  | 3 |
| MATH 4523 Advanced Calculus II (Or MATH/STAT <br> 3000+ if not taking MATH 4523) |  |  |
| General Electives or coursework, as needed to <br> meet 120-hour requirement |  | 3 |
| Year Total: | 12 | 16 |

## Total Units in Sequence:

1 Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273) of this chapter.
2 Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
3 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003,HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
4 Meets 24 -hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations (p. 273) of this chapter.
5 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003,

Units
Fall Spring 3 3 3

Students must complete 120 degree credit hours to include the minimum University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/), the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), and the following liberal arts and major course requirements. Bolded courses from the list below may be applied to portions of the University Core requirements.

Eight total hours from one of the following natural science sequences: 8

## Biology:

BIOL 1543 Principles of Biology (ACTS Equivalency = \& BIOL 1541L BIOL 1014 Lecture)
and Principles of Biology Laboratory (ACTS
Equivalency $=$ BIOL 1014 Lab)
and choose one of the following:
BIOL 1603 Principles of Zoology (ACTS Equivalency =
\& BIOL 1601L BIOL 1054 Lecture)
and Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab)
BIOL 1613 Plant Biology (ACTS Equivalency = BIOL 1034
\& BIOL 1611L Lecture)
and Plant Biology Laboratory (ACTS
Equivalency = BIOL 1034 Lab)
BIOL 2013 General Microbiology (ACTS Equivalency = \& BIOL 2011L BIOL 2004 Lecture)
and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)
Chemistry:
CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture)
and University Chemistry I Laboratory (ACTS
Equivalency = CHEM 1414 Lab)

## and

DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
6
General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003,PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
7 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
8 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2813, or PLSC 2813H.

Requirements for a Major in Mathematics, B.S. Degree:

| CHEM 1123 <br> \& CHEM 1121 | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |
| :---: | :---: |
| Geology: |  |
| \& GEOS 1111 L1114 Lecture) <br> and Physical Geology Laboratory (ACTS <br> Equivalency = GEOL 1114 Lab) |  |
| and |  |
| GEOS 1133 \& GEOS 1131 | Earth Science (ACTS Equivalency = GEOL 1124 LLecture) <br> and Earth Science Laboratory (ACTS <br> Equivalency = GEOL 1124 Lab) |
| Physics: |  |
| PHYS 2054 | University Physics I (ACTS Equivalency = PHYS 2034) |
| and |  |
| PHYS 2074 | University Physics II (ACTS Equivalency = PHYS 2044 Lecture) |

Completion of eight additional hours at the 3000-level or higher 8-30+ not in Mathematics or Statistics chosen with department approval, completion of the UAteach curriculum, or completion of the Fulbright Four Year Honors Core for a Bachelor of Science degree. (Hours required will vary.)

As a part of the requirements for a B.S. degree with a major in mathematics, the student must also complete the following 27 hours:

| MATH 2574 | Calculus III (ACTS Equivalency = MATH 2603) | 4 |
| :--- | :--- | :--- |
| MATH 2584 | Elementary Differential Equations | 4 |
| MATH 2803 | Transition to Advanced Mathematics | 3 |
| MATH 3093 | Abstract Linear Algebra | 3 |
| MATH 3113 | Introduction to Abstract Algebra I | 3 |
| MATH 4513 | Advanced Calculus I | 3 |
| MATH 4933 | Mathematics Major Seminar | 3 |
| CSCE 2004 | Programming Foundations I | 4 |
| And the completion of a senior writing project under the direction of a <br> faculty member. | 3 |  |
| It is recommended that MATH 2803 be taken as early as possible in  <br> the program.  |  |  |

1 This is typically carried out in MATH 4933 or satisfied with an honors senior thesis.

## Concentration 3 (Statistics)

A program for the student who wishes to emphasize statistics or who intends to study statistics at the graduate level. Requirements:

| STAT 3013 | Introduction to Probability | 3 |
| :--- | :--- | :---: |
| STAT 3113 | Introduction to Mathematical Statistics | 3 |
| STAT 3003 | Statistical Methods | 3 |
| STAT 3001L | Statistics Methods Laboratory | 1 |
| or STAT 4101 Lntroduction to R |  |  |
| STAT 4033 | Nonparametric Statistical Methods | 3 |

Two MATH or STAT electives numbered 3000 or higher (students 6 may also take CSCE 4133).

## Total Hours

A 2.00 cumulative grade-point average on all work completed in the department of mathematical sciences will be required for graduation with a B.A. or B.S. degree.

## Mathematics, B.S., Concentration 3 (Statistics)

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1,2}$ | 4 |  |
| Science State Minimum Core lecture with corequisite lab requirement (Satisfies General Education Outcome 3.4) | 4 |  |
| Social Sciences State Minimum Core requirement (Satisfies General Education Outcome 3.3) ${ }^{3}$ | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) ${ }^{1}$ |  | 4 |
| MATH 2803 Transition to Advanced Mathematics ${ }^{1}$ |  | 3 |
| Science State Minimum Core lecture with corequisite lab requirement (Satisfies General Education Outcome 3.4) |  | 4 |
| Year Total: | 14 | 14 |

Second Year | Units |
| ---: |
| Fall |

MATH 2574 Calculus III (ACTS Equivalency =
4

MATH 2603) ${ }^{1}$
MATH 3093 Abstract Linear Algebra ${ }^{1,4} 3$
CSCE 2004 Programming Foundations I 4
General elective or coursework, as needed 4

Fine Arts or Humanities State Minimum Core requirement, as needed (Satisfies General Education Outcome 3.1 or 3.2$)^{5,6}$
General elective or coursework, as needed Year Total:
Third Year
MATH 3113 Introduction
STAT 3001L Statistics M
or STAT 4101L Introduc
STAT 3003 Statistical M
Social Sciences State M
(Select a course which s
Outcomes 3.3 and 4.1)

General Electives or coursework, as needed
MATH or STAT Elective numbered 3000 or higher. ${ }^{1,4}$
STAT 3113 Introduction to Mathematical Statistics Social Sciences State Minimum Core requirement (Select a course which satisfies General Education Outcomes 3.3 and 5.1) ${ }^{8}$
General Electives or coursework, as needed Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 4513 Advanced Calculus ${ }^{1,4}$ | 3 |  |
| STAT 4033 Nonparametric Statistical Methods ${ }^{1,4}$ | 3 |  |
| Humanities or Fine Arts State Minimum Core | 3 |  |
| requirement, as needed (Satisfies General |  |  |
| Education Outcome 3.2 or 3.1) |  |  |
| General Electives or coursework to be applied | 6 |  | towards minor, as needed

MATH 4933 Mathematics Major Seminar (Satisfies
General Education Outcomes 1.2 and 6.1) ${ }^{1,4}$
MATH or STAT Elective numbered 3000 or
higher ${ }^{1,4}$
General Electives or coursework, as needed to meet 120 hour requirement
Year Total:
15

## Total Units in Sequence:

${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/).
${ }^{2}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
3 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003,

## Requirements for a Minor in Mathematics

A grade of C or better in the following courses:

| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| :---: | :---: | :---: |
| MATH 2603 <br> or MATH 2803 <br> or MATH 4423 <br> or MATH 3583 | Discrete Mathematics <br> Transition to Advanced Mathematics Introduction to Partial Differential Equations Foundations of Applied Mathematics | 3 |
| 3 courses select | d from the following: | 9-12 |
| MATH 2574 | Calculus III (ACTS Equivalency $=$ MATH 2603) |  |
| MATH 2584 | Elementary Differential Equations |  |
| Any MATH cou hours each. | urses at the 3000-level or higher of at least 3 credit |  |

## Total Hours

## Requirements for a Minor in Statistics:

Coursework used toward the mathematics major may not be applied toward a statistics minor.

| MATH $2554 \quad$ Calculus I (ACTS Equivalency $=$ MATH 2405) | 4 |
| :--- | ---: | ---: |
| 12 hours of STAT courses, including 9 hours in courses numbered | 12 |
| 3000 and above. |  |
| Total Hours | $\mathbf{1 6}$ |

Requirements for Departmental Honors in Mathematics: The
Departmental Honors Program in Mathematics is designed for the superior student and is intended to help the student develop a more comprehensive view of the nature of mathematics. The program provides
a vehicle for the recognition of the achievements of work beyond the usual course of study and earns the student the distinction "Mathematics Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

Graduation with honors: The candidate must satisfy the requirements set forth by the Honors Council. The candidate must also obtain at least a 3.50 grade-point average in CSCE 2004 and all 2000-level or higher MATH/STAT courses required for the degree. In addition, a grade of "D" or "F" in any other course offered by the department disqualifies a student for honors.

Candidates must take 2-4 hours of MATH 498V at least one semester before the student's graduating semester. This course will require significant progress toward an honors thesis to be presented and defended before the student's honors committee. The quality of this paper and its defense, along with the execution of the rest of the student's honors program and overall academic performance, will be used in determining the distinction between Honors and High Honors.

## Mathematics Teacher Licensure Requirements:

Students interested in pursuing a minor in STEM Education or Secondary Teacher Licensure in mathematics, biology, chemistry, physics, or computer science at the undergraduate level should consult with a STEM Education faculty adviser, teach@uark.edu. Another option to obtain secondary teacher licensure is to complete the one-year Master of Arts in Teaching (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/ mathematicalsciencesmasc/graduatecatalog/programsofstudy/ teachereducation/).

## Faculty

Arnold, Mark E., Ph.D., B.S. (Northern Illinois University), A.S. (Rock Valley College), Associate Professor, 1993, 1999.
Barton, Ariel, Ph.D., M.S. (University of Chicago), B.S. (Harvey Mudd College), Associate Professor, 2016, 2021.
Bergdall, Joohn, Ph.D. (Brandeis University), B.S. (University of Minnesota), Assistant Professor, 2022.
Bradshaw, Zachary, Ph.D. (University of Virginia), B.S. (Virginia
Commonwealth University), Associate Professor, 2017, 2022.
Brewer, Dennis W., Ph.D., M.A. (University of Wisconsin), B.A. (Sterling College), Professor, 1975, 1990.
Chakraborty, Avishek, Ph.D (Duke University), M.S., B.S. (Indian Statistical Institute), Associate Professor, 2014, 2020.
Clay, Matt, Ph.D., M.S. (University of Utah), B.S. (University of Oregon), Associate Professor, 2012, 2015.
Day, Matthew B., Ph.D., M.S. (University of Chicago), B.S. (University of Texas), Associate Professor, 2011, 2016.
Del Barco, Celia, M.S. (Georgia Institute of Technology), B.A. (Instituto Politecnio Nacional), Instructor, 2013.
Dick, Raymond, M.S. (Texas Tech University), B.S. (Bethany College), Instructor, 2014.
Dickerson, Elizabeth B., M.S. (University of Arkansas), B.S. (Mississippi State University), Instructor, 2013.
Dingman, Shannon Wayne, Ph.D., M.S. (University of MissouriColumbia), M.S. (Pittsburg State University), Professor, 2007, 2020.
Fatema, Jinat, M.S. (Sam Houston State University), B.S. (University of Dhaka), Instructor, 2014.
Feldman, William A., Ph.D. (Queen's University), M.S. (Northwestern University), B.S. (Tufts University), Professor, 1971.

Girshner, Joshua M., M.A., B.A. (University of Arkansas), Instructor, 2012.

Goodman-Strauss, Chaim, Ph.D., B.S. (University of Texas at Austin), Professor, 1994, 2006.
Harrington, Phil, Ph.D., M.S. (University of Notre Dame), B.S. (Whitworth College), Professor, 2009, 2019.
Harriss, Edmund O., Ph.D. (Imperial College, London), M.M. (University of Warwick), Assistant Professor, 2010, 2022.
Hood, Shanda, Ph.D. M.S. (University of Arkansas), B.S. (University of Arkansas-Fort Smith), Teaching Assistant Professor, 2013.
Johnson, Mark, Ph.D. (Michigan State University), M.S. (Purdue University), B.S. (City University of New York, Brooklyn College), Professor, 1995, 2015.
Kaman, Tulin, Ph.D. (Stony Brook University), M.S. (Istanbul Technical University), B.S. (Yildiz Technical University), Assistant Professor, 2017. Kruse, Audrey, M.S. (Arkansas State University), B.S. (Brigham Young University), Instructor, 2014.
Luecking, Daniel H., Ph.D., M.S., B.A. (University of Illinois-UrbanaChampaign), Professor, 1981, 1990.
Mantero, Paolo, Ph.D. (Purdue University), M.Sc., B.Sc. (University of Genova, Italy), Associate Professor, 2015, 2021.
Miller, Lance E., Ph.D. (University of Connecticut), M.S. (New Mexico State University), Associate Professor, 2013, 2019.
Namakshi, Nama, Ph.D., M.Ed. (Texas State University), B.S. (Angelo State University), Teaching Assistant Professor, 2016.
Niu, Wenbo, Ph.D. (University of Illinois at Chicago), M.S., B.S. (Fudan University, China), Associate Professor, 2015, 2021.
Padgett, Joshua, Ph.D. (Baylor University), B.S. (Gardner-Webb University), Assistant Professor, 2020.
Petris, Giovanni, Ph.D., M.S. (Duke University), B.S. (Universita degli Studi di Milano, Italy), Professor, 1999, 2015.
Plummer, Sean, Ph.D., M.S. (Texas A\&M University), B.S. (North Carolina State University), Assistant Professor, 2022.
Raich, Andrew Seth, Ph.D., M.A. (University of Wisconsin-Madison), B.A. (Williams College), Professor, 2008, 2018.

Raoux, Katherine, Ph.D. (Brandeis University), B.A. (New College of Florida), Assistant Professor, 2022.
Rickard, Brian, Ph.D., M.Ed., B.S. (University of Arkansas), Teaching Associate Professor, 2015.
Rieck, Yo'av, Ph.D. (University of Texas at Austin), B.A. (Israel Institute of Technology), Professor, 2000, 2010.
Robinson, Samantha, Ph.D., M.S., B.S. (University of Arkansas),
Teaching Associate Professor, Julia A. Hicks Chair, 2015, 2022.
Ryan, John, Ph.D. (University of York), M.Sc. (University of Warwick), B.A. (University of York, Britain), Distinguished Professor, 1990, 2019.

Ryburn, Tori, M.S. (University of Arkansas), B.S. (University of ArkansasMonticello), Instructor, 2013.
Schroeder, Melinda, M.A. (University of Arkansas), B.S. (Northeastern State University), Instructor, 2016.
Scroggin, Sloan, M.S. (University of Arkansas), B.B.A. (University of Arkansas-Little Rock), Instructor, 2013.
Stephenson, Barbara C., M.S. (West Virginia University), Instructor, 2004.

Tipton, John, Ph.D., M.S., B.S., (Colorado State University), Assistant Professor, 2017.
Tjani, Maria, Ph.D. (Michigan State University), M.S. (Purdue University), B.S. (University of Ioannina, Greece), Professor, 2003, 2020.

Van Horn-Morris, Jeremy, Ph.D. (University of Texas at Austin), B.S. (University of Oregon), Associate Professor, 2012, 2018.
Whitmire, Daniel, Ph.D. (University of Texas), M.S. (University of Texas at El Paso), B.S. (Midwestern State University), Instructor, 2013.

Woodland, Janet C., Ph.D., M.A. (State University of New York at Stony Brook), B.A. (King's College), Teaching Assistant Professor, 1993.
Zhang, Qingyang, Ph.D. (Northwestern University), M.S. (Loyola
University-Chicago), B.S. (Beijing Normal University), Associate Professor, 2015, 2021.

## Courses

## MATH 0001L. College Algebra Laboratory I. 1 Hour.

This course provides additional support and instruction for students enrolled in MATH 1203 who are required to take it based on the placement requirements stipulated for that course. Credit earned in this course will not be applied to the total hours required for a degree. One lab hour. (Typically offered: Fall, Spring and Summer)

## MATH 0002L. College Algebra Laboratory II. 2 Hours.

This course provides additional support and instruction for students enrolled in MATH 1203 who are required to take it based on the placement requirements stipulated for that course. Credit earned in this course will not be applied to the total hours required for a degree. Two lab hours. (Typically offered: Fall, Spring and Summer)
MATH 0131L. Quantitative Reasoning Laboratory. 1 Hour.
This course provides additional support and instruction for students enrolled in MATH 1313 who are required to take it based on the placement requirements stipulated for that course. Credit earned in this course will not be applied to the total hours required for a degree. One lab hour. (Typically offered: Fall, Spring and Summer)

MATH 1203. College Algebra (ACTS Equivalency = MATH 1103). 3 Hours.
Topics include the solution and application of linear and quadratic equations and inequalities; functions, graphs, and theory of equations; matrix solutions of systems of equations and basic properties of matrices. Prerequisite: A score of at least 46 on ALEKS, at least 22 on the math component of the ACT exam, at least 540 on the math component of the new SAT or old SAT, at least 63 on the Accuplacer Classic College Math, at least 263 on the Accuplacer Next Generation QAS, at least 254 on the Accuplacer NG AAF, or at least 66 on the Compass Algebra. Students who score at least 30 on ALEKS, at least 19 on the math component of the ACT exam, at least 510 on the math component of the new SAT or 460 on the math component of the old SAT, at least 42 on the Accuplacer Classic College Math, at least 255 on the Accuplacer Next Generation QAS, at least 235 on the Accuplacer NG AAF, or at least 41 on the Compass Algebra must also register for MATH 0001L as a corequisite. Students who score below 30 on ALEKS, below 19 on the math component of the ACT exam, below 510 on the math component of the new SAT or 460 on the math component of the old SAT, below 42 on the Accuplacer Classic College Math, below 255 on the Accuplacer Next Generation QAS, below 235 on the Accuplacer NG AAF, or below 41 on the Compass Algebra must also register for MATH 0002L as a corequisite. (Typically offered: Fall, Spring and Summer)

MATH 1213. Plane Trigonometry (ACTS Equivalency = MATH 1203). 3 Hours. Basic topics in trigonometry including identities, formulas, and polar coordinate system. Credit will be allowed for only one of either MATH 1213 or MATH 1284C. Prerequisite: MATH 1203 or MATH 1204 with a grade of C or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

MATH 1284C. Precalculus Mathematics (ACTS Equivalency = MATH 1305). 4 Hours.
Topics in algebra and trigonometry. To be taken by students who expect to take MATH 2554. Corequisite: Drill component. Prerequisite: MATH 1203 with a grade of $C$ or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

## MATH 1313. Quantitative Reasoning (ACTS Equivalency = MATH 1113). 3

 Hours.Reasoning about quantitative information, and the use of mathematical tools and models as citizens, consumers, entrepreneurs and employees in today's complex technological society. Topics include modeling with functions; quantity, measurement and indices; finance; counting, probability, odds and risk. Prerequisite: A score of at least 40 on ALEKS, at least 19 on the ACT exam, at least 510 on the math component of the newSAT, at least 460 on the math component of the old SAT, at least 42 on the Accuplacer Classic College Math, at least 255 on the Accuplacer Next Generation QAS, at least 235 on the Accuplacer Next Generation AAF, or at least 41 on Compass Algebra. Students who score below 40 on ALEKS, below 19 on the math component of the ACT exam, below 510 on the math component of the new SAT, below 460 on the math component of the old SAT, below 42 on the Accuplacer Classic College Math, below 255 on the Accuplacer Next Generation QAS, below 235 on the Accuplacer Next Generation AAF, or below 41 on Compass Algebra must also register for MATH 0131L as a corequisite. (Typically offered: Fall and Spring)

## MATH 1514. Calculus with Algebra and Trigonometry I. 4 Hours.

Topics in algebra, trigonometry and precalculus are integrated with elementary differential calculus. Part of a two semester sequence with MATH 2514; these two courses together are equivalent to MATH 1284C and MATH 2554C. MATH 1514 BY ITSELF NOT EQUIVALENT TO EITHER MATH 1284C OR MATH 2554C. This course must be taken with MATH 2514. Intended for students who place into MATH 1284C, but who would profit from an earlier exposure to calculus concepts. Closed to students with credit for MATH 2554C. Prerequisite: MATH 1203 with a grade of $C$ or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall)
MATH 2043. Survey of Calculus (ACTS Equivalency = MATH 2203). 3 Hours. Selected topics in elementary calculus and analytic geometry for students in business, agriculture, and social sciences. Credit will be allowed for only one of MATH 2043 and MATH 2554. Prerequisite: MATH 1203 or MATH 1204 or MATH 1213 or MATH 1284C or MATH 2053 with a grade of C or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

## MATH 2053. Finite Mathematics. 3 Hours.

Selected topics in probability and statistics, review of algebraic matrices, and graphic analysis of linear programming for students in business, agriculture, and social sciences. Prerequisite: MATH 1203 or MATH 1213 or MATH 1284C or MATH 2043 with a grade of $C$ or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

MATH 2183. Mathematical Reasoning in a Quantitative World. 3 Hours.
Mathematical and statistical reasoning are required in contexts of growing complexity and sophistication. The purpose of this course is to cause students to possess the power and habit of mind to search out quantitative information, critique it, reflect upon it, and apply it in their public, personal and professional lives. Prerequisite: MATH 1203, or MATH 1313, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall and Spring)

MATH 2213. Survey of Mathematical Structures I. 3 Hours.
Sets and logic, systems of numerations, number systems and operations, and elementary number theory. Prerequisite: $A$ grade of $C$ or better in any of MATH 1203, MATH 1213, MATH 1284C, MATH 1313, MATH 2043, MATH 2053, MATH 2183 or MATH 2554, or a score of at least $80 \%$ on the University of Arkansas Mastery of Algebra Exam, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)
MATH 2223. Survey of Mathematical Structures II. 3 Hours.
Geometry and measurement, and statistics and probability. Prerequisite: A grade of C or better in MATH 2213. (Typically offered: Fall, Spring and Summer)
MATH 2445. Calculus I with Review (ACTS Equivalency = MATH 2405). 5 Hours. Derivative of functions of one variable, applications of the derivative, introduction of the integral, and applications. Credit will be allowed for only one of MATH 2445, MATH 2554 or MATH 2043. Prerequisite: MATH 1213 with a grade of $C$ or better, or MATH 1284C with a grade of $C$ or better, or a score of at least 70 on the Math Placement Test, or a score of at least 28 on the math component of the ACT exam, or a score of at least 640 on the math component of the old SAT or 660 on the math component of the new SAT, or a score of at least 2 on the Calculus AB or BC Advanced Placement Exam. (Typically offered: Fall, Spring and Summer) This course is equivalent to MATH 2554.

## MATH 2514. Calculus with Algebra and Trigonometry II. 4 Hours.

Continuation of MATH 1514. Topics in algebra, trigonometry and precalculus are integrated with elementary differential and integral calculus. Completion of MATH 1514 and MATH 2514 is equivalent to completion of MATH 1284C and MATH 2554C. This course is meant exclusively for students who have previously taken MATH 1514. MATH 2514 BY ITSELF NOT EQUIVALENT TO EITHER MATH 1284C OR MATH 2554C. Closed to students with credit for MATH 2554C. Prerequisite: MATH 1514 with a grade of C or better. (Typically offered: Spring)
MATH 2554. Calculus I (ACTS Equivalency = MATH 2405). 4 Hours.
Derivative of functions of one variable, applications of the derivative, introduction of the integral, and applications. Credit will be allowed for only one of MATH 2554 and MATH 2043. Prerequisite: MATH 1213 with a grade of $C$ or better, or MATH 1284C with a grade of $C$ or better, or a score of at least 76 on the Math Placement Test, or a score of at least 28 on the math component of the ACT exam, or a score of at least 640 on the math component of the old SAT or 660 on the math component of the new SAT, or a score of at least 2 on the Calculus AB or BC Advanced Placement Exam. (Typically offered: Fall, Spring and Summer)

## MATH 2554C. Calculus I (ACTS Equivalency = MATH 2405). 4 Hours.

Derivative of functions of one variable, applications of the derivative, introduction of the integral, and applications. Credit will be allowed for only one of MATH 2554 and MATH 2043. Corequisite: Drill component. Prerequisite: MATH 1213 with a grade of $C$ or better, or MATH 1284C with a grade of $C$ or better, or a score of at least 76 on the Math Placement Test, or a score of at least 28 on the math component of the ACT exam, or a score of at least 640 on the math component of the old SAT or 660 on the math component of the new SAT, or a score of at least 2 on the Calculus AB or BC Advanced Placement Exam. (Typically offered: Fall, Spring and Summer) This course is equivalent to MATH 2554.

## MATH 2554H. Honors Calculus I. 4 Hours.

Topics in analytic geometry and calculus presented in a rigorous manner suitable for an honors student. Students may not receive credit for both MATH 2043 and MATH 2554. Prerequisite: Honors standing or departmental consent; and a score of at least 30 on the math component of the ACT exam, or a score of at least 680 on the math component of the old SAT or 710 on the math component of the new SAT. (Typically offered: Fall and Spring)
This course is equivalent to MATH 2554.

## MATH 2564. Calculus II (ACTS Equivalency = MATH 2505). 4 Hours.

Integral calculus of one variable and infinite series. Prerequisite: MATH 2554 with a grade of C or better. (Typically offered: Fall, Spring and Summer)

## MATH 2564C. Calculus II. 4 Hours.

Integral calculus of one variable and infinite series. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2554 with a grade of C or better. (Typically offered: Fall, Spring and Summer) This course is equivalent to MATH 2564.
MATH 2564H. Honors Calculus II. 4 Hours.
Integral calculus of one variable and infinite series. Prerequisite: MATH 2554 with a grade of A, or MATH 2554 H with a grade of A or B, or a score of 5 on the AP AB Calculus Exam. (Typically offered: Spring)
This course is equivalent to MATH 2564.
MATH 2574. Calculus III (ACTS Equivalency = MATH 2603). 4 Hours.
Differential and integral calculus of several variables, and vector calculus. Prerequisite: MATH 2564 with a grade of $C$ or better. (Typically offered: Fall, Spring and Summer)

## MATH 2574C. Calculus III. 4 Hours.

Differential and integral calculus of several variables, and vector calculus. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2564 with a grade of C or better. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MATH 2574.

## MATH 2574H. Honors Calculus III. 4 Hours.

Differential and integral calculus of several variables, and vector calculus. Prerequisite: MATH 2564 with a grade of A, or MATH 2564 H with a grade of A or B, or a score of 5 on the AP BC Calculus exam. (Typically offered: Fall and Spring) This course is equivalent to MATH 2574.

## MATH 2584. Elementary Differential Equations. 4 Hours.

First and second order ordinary differential equations, the Laplace transform, and matrix systems of ordinary differential equations. Prerequisite: MATH 2564 or MATH 2564C with a grade of C or better. (Typically offered: Fall, Spring and Summer)

## MATH 2584C. Elementary Differential Equations. 4 Hours.

First and second order ordinary differential equations, the Laplace transform, and matrix systems of ordinary differential equations. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2564 or MATH 2564C with a grade C or better. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MATH 2584.

## MATH 2584H. Honors Elementary Differential Equations. 4 Hours.

Topics in ordinary differential equations, systems of differential equations and the Laplace transform presented with an emphasis on modeling. Prerequisite: MATH 2564 with a grade of A, or MATH 2564 H with a grade of A or B, or a score of 5 on the AP BC Calculus exam. (Typically offered: Irregular)
This course is equivalent to MATH 2584.
MATH 2603. Discrete Mathematics. 3 Hours.
Introductory study of sets, relations, logic, proofs, algorithms, counting methods, graph theory, trees, and Boolean algebras. Prerequisite: MATH 2554 with a grade of C or better or the equivalent. (Typically offered: Fall, Spring and Summer)

MATH 2801L. Transition to Advanced Mathematics Laboratory. 1 Hour. Introduction to mathematical software and application to career opportunities in mathematics. Pre- or corequisite: MATH 2803. (Typically offered: Fall and Spring)

MATH 2803. Transition to Advanced Mathematics. 3 Hours.
An introduction to concepts encountered in advanced mathematics. Emphasis is placed on developing the student's problem solving skills and ability to correctly communicate abstract concepts. Topics to include set theory, logic, relations, functions and mathematical induction presented in the context of intriguing mathematical problems. Pre- or Corequisite: MATH 2801L and (MATH 2554 or MATH 2554C). (Typically offered: Fall and Spring)
MATH 2903. Functions, Foundations and Models. 3 Hours.
An in-depth study of topics from secondary school mathematics, emphasizing the development of the concept function, function patterns in data sets, connections among the main topics associated with a secondary school curriculum, and the appropriate use of technology. Pre- or Corequisite: MATH 2564 or MATH 2564C. (Typically offered: Fall and Spring)

MATH 3013. Introduction to Probability. 3 Hours.
A calculus-based introduction to probability. Discrete probability spaces and counting techniques, discrete and continuous probability distributions, random variables, random samples, law of large numbers, central limit theorem. Prerequisite: MATH 2564 or MATH 2564C. (Typically offered: Fall, Spring and Summer) This course is cross-listed with STAT 3013.

## MATH 3083. Linear Algebra. 3 Hours.

Systems of linear equations, vector spaces, linear transformations, matrices, and determinants. Only one of MATH 3083 and MATH 3093 will count for credit. Prerequisite: MATH 2554 or MATH 2043, with a grade of C or better. (Typically offered: Fall, Spring and Summer)

## MATH 3093. Abstract Linear Algebra. 3 Hours.

A proof-based course on vector spaces, linear transformations, matrices, determinants, eigenspaces and eigenvalues, with applications. Recommended for mathematics majors. Only one of MATH 3083 and MATH 3093 may be counted for credit. Pre- or Corequisite: MATH 2564 with a C or better. Prerequisite: MATH 2803 with a C or better. (Typically offered: Fall and Spring)
MATH 3103. Combinatorics. 3 Hours.
Basic combinatorial techniques including the study of the principle of inclusion and exclusion and generating functions. Additional topics may include modular arithmetic, algebraic coding theory, Polya's method of enumeration, and an introduction to abstract algebraic structures. Prerequisite: MATH 2603 or MATH 2803. Pre- or Corequisite: MATH 3083 or MATH 3093. (Typically offered: Fall and Spring)
MATH 3113. Introduction to Abstract Algebra I. 3 Hours.
Introduction to algebraic structures with emphasis on rigorous justification of results. Prerequisite: MATH 2803 with a grade of C or better; and MATH 3083 or MATH 3093 with a grade of C or better. (Typically offered: Fall and Spring)

## MATH 3133. History of Mathematics. 3 Hours.

Survey of the development of mathematical ideas from the ancient to the modern times. Prerequisite: MATH 2554, and MATH 2603 or MATH 2803, both with a grade of $C$ or better. (Typically offered: Spring)

## MATH 3203. Number Theory. 3 Hours.

Topics in elementary number theory. Prerequisite: MATH 2554, and MATH 2603 or MATH 2803, both with a grade of C or better. (Typically offered: Irregular)

MATH 3513. Elementary Analysis. 3 Hours.
A first rigorous course in analysis. The formal basis of the real number system, sequences and series, the Bolzano-Weierstrass Theorem, limits and continuity, the Intermediate Value Theorem, Rolle's Theorem, differentiation, the Mean Value Theorem and its consequences, Taylor's Theorem, L'Hopital's rules, convexity, Riemann integration, the Fundamental Theorem of Calculus. Only one of MATH 3513 and MATH 4513 may be counted for credit toward the major. Prerequisite: A grade of C or better in each of MATH 2554 or MATH 2554C, MATH 2564 or MATH 2564C, MATH 2574 or MATH 2574C, MATH 3083 or MATH 3093, and MATH 2803. (Typically offered: Fall)

## MATH 3583. Foundations of Applied Mathematics. 3 Hours.

Introduction to the derivation and analysis of physical models. Topics include dimensional analysis, perturbation methods, the method of characteristics, continuum mechanics, and elastic, material and fluid equations. Case studies come from biology, fluid dynamics, engineering, chemistry and other areas. Prerequisite: MATH 2574 and MATH 2584. (Typically offered: Fall)

MATH 3773. Foundations of Geometry I. 3 Hours.
Axiomatic method; Euclidean geometry; non-Euclidean geometry. Prerequisite: MATH 2554, and MATH 2603 or MATH 2803, each with a grade of $C$ or better. (Typically offered: Fall)

MATH 399VH. Honors Mathematics Course. 1-6 Hour.
Honors thesis research and writing under the direction of a faculty member in the department. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.
MATH 400V. Directed Readings. 1-7 Hour.
Directed readings. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 7 hours of degree credit.

## MATH 405V. Internship in Professional Practice. 1-3 Hour.

Professional work experience involving significant use of mathematics or statistics in business, industry or government. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## MATH 4103. Advanced Linear Algebra. 3 Hours.

Linear functionals, matrix representation of linear transformations, scalar product, and spectral representation of linear transformations. Prerequisite: MATH 3083 or MATH 3093. (Typically offered: Irregular)
MATH 4113. Introduction to Abstract Algebra II. 3 Hours.
Topics in abstract algebra including finite abelian groups, linear groups, factorization in commutative rings and Galois theory. Prerequisite: MATH 3113. (Typically offered: Spring)

## MATH 4153. Mathematical Modeling. 3 Hours.

Mathematical techniques for formulating, analyzing, and criticizing deterministic models taken from the biological, social, and physical sciences. Techniques include graphical methods, stability, optimization, and phase plane analysis. Prerequisite: MATH 2584. (Typically offered: Irregular)
MATH 4163. Dynamic Models in Biology. 3 Hours.
Mathematical and computational techniques for developing, executing, and analyzing dynamic models arising in the biological sciences. Both discrete and continuous time models are studied. Applications include population dynamics, cellular dynamics, and the spread of infectious diseases. Prerequisite: MATH 2554. (Typically offered: Irregular)
This course is cross-listed with BIOL 4163.

## MATH 4253. Symbolic Logic I. 3 Hours.

Rigorous analyses of the concepts of proof, consistency, equivalence, validity, implication, and truth. Full coverage of truth-functional logic and quantification theory (predicate calculus). Discussion of the nature and limits of mechanical procedures (algorithms) for proving theorems in logic and mathematics. Informal accounts of the basic facts about infinite sets. Prerequisite: MATH 2603, MATH 2803, or PHIL 2203. (Typically offered: Fall)
This course is cross-listed with PHIL 4253.

## MATH 4303. Ordinary Differential Equations. 3 Hours.

Existence, uniqueness, stability, qualitative behavior, and numerical solutions.
Prerequisite: MATH 2584 and (MATH 4513 or MATH 3513). (Typically offered: Fall)

## MATH 4343. Introduction to Scientific Computing. 3 Hours.

Provides an understanding of a diverse set of problems, as well as algorithms for solving them and implementing the algorithms using high performance computing resources and environments. The emphasis is on problem solving and offers multiple projects concerning applications in science and engineering. Prerequisite: MATH 3083 or MATH 3093. (Typically offered: Spring)
MATH 4353. Numerical Linear Algebra. 3 Hours.
Numerical methods for problems of linear algebra, including the solution of very large systems, eigenvalues, and eigenvectors. Prerequisite: MATH 3083 or MATH 3093. (Typically offered: Spring)

MATH 4363. Numerical Analysis. 3 Hours.
General iterative techniques, error analysis, root finding, interpolation, approximation, numerical integration, and numerical solution of differential equations. Prerequisite: MATH 2584. (Typically offered: Fall)

MATH 4373. Finite Element Methods and Solution of Sparse Linear Systems. 3 Hours.
Provides an in-depth understanding of numerical methods for the solution of partial differential equations using Finite Element Methods, Direct and Iterative Methods for the Sparse Linear Systems. Prerequisite: MATH 4353. (Typically offered: Spring)

## MATH 4403. Numerical Linear Algebra II. 3 Hours.

Provides an in-depth understanding of numerical methods for the solution of large scale eigenvalue problems arising in science and engineering applications including theory, implementation and applications. Prerequisite: MATH 4353. (Typically offered: Fall)

MATH 4423. Introduction to Partial Differential Equations. 3 Hours.
Separation of variables, Fourier transform, and Laplace transform methods for the solution of partial differential equations. Topics include Fourier series, Fourier-Bessel series, orthogonal expansions, and the error function. Prerequisite: MATH 2584 or MATH 2584C with a grade of C or better; and MATH 2574 with a grade of C or better. (Typically offered: Fall, Spring and Summer)

## MATH 4443. Complex Variables. 3 Hours.

Complex analysis, series, and conformal mapping. Additional applications for graduate credit. Prerequisite: MATH 2603 or MATH 2803, and MATH 2584 or MATH 2584C. (Typically offered: Fall)
MATH 4503. Differential Geometry. 3 Hours.
Topics include: classical differential geometry of curves and surfaces in 3-space, differential forms and vector fields. Prerequisite: MATH 2574 or MATH 2574C. (Typically offered: Irregular)

## MATH 4513. Advanced Calculus I. 3 Hours.

The real and complex number systems, basic set theory and topology, sequences and series, continuity, differentiation, and Taylor's theorem. Emphasis is placed on careful mathematical reasoning. Only one of MATH 3513 and MATH 4513 may be counted for credit toward the major. Prerequisite: MATH 2574, MATH 2803 and MATH 3083 or MATH 3093. (Typically offered: Fall and Spring)

MATH 4523. Advanced Calculus II. 3 Hours.
The Riemann-Stieltjes integral, uniform convergence of functions, Fourier series, implicit function theorem, Jacobians, and derivatives of higher order. Prerequisite: MATH 4513. (Typically offered: Spring)

## MATH 4703. Introduction to Point-Set Topology. 3 Hours.

A study of topological spaces including continuous transformations, connectedness and compactness. Prerequisite: MATH 4513. (Typically offered: Irregular)

## MATH 4933. Mathematics Major Seminar. 3 Hours.

Weekly seminars on topics of historical or cross-disciplinary interest, designed to address students' mathematical knowledge, problem-solving and communication skills, in which student presentations play a part. Also serves as a forum for sharing information about career opportunities and preparation for employment. Prerequisite: Senior standing and a mathematics major, or departmental consent. (Typically offered: Spring)
MATH 498V. Senior Thesis. 1-6 Hour.
Senior thesis. (Typically offered: Fall, Spring and Summer)
MATH 499V. Research Topics in Mathematics. 1-3 Hour.
Current research interests in mathematics, at an advanced undergraduate or beginning graduate level. Prerequisite: Departmental consent. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

## Medical Humanities (MEDH)

Casey Kayser, program director
ckayser@uark.edu
479-575-2512
Kimpel Hall 707
The medical humanities minor is designed to give students an overview of the ways in which various disciplines in the humanities inform, intersect with, and apply to understandings of the medical arts and sciences. The medical humanities minor is beneficial for students preparing for careers in health care, social services, and health-related fields, especially those who wish to understand how cultural, social, ethical, religious, literary, artistic, and other such perspectives can enrich conceptualizations and approaches to patient care.

Approaching medicine from a humanistic perspective will help future health care and social service practitioners view patients and individuals with greater empathy and awareness, as well as provide them with the tools to critically analyze their own experiences. The minor is also appropriate for students from disciplines within the humanities and social sciences interested in researching and practicing in such areas related to the historical, social, and cultural dynamics that have informed medical institutions and treatment; patient advocacy; medical law and ethics; narrative medicine; and art, music, or narrative therapies.

## Requirements for Minor in Medical Humanities

A minimum of 18 hours consisting of the following:
Choose one introductory course:
ANTH 1023 Introduction to Cultural Anthropology (ACTS
Equivalency = ANTH 2013)
COMM 1023 Communication in a Diverse World
HIST 1123 Institutions and Ideas of World Civilizations II
(ACTS Equivalency = HIST 1123)
PHIL 2103 Introduction to Ethics (ACTS Equivalency = PHIL 1003)

PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)

| SOCI 2013 | General Sociology (ACTS Equivalency $=$ SOCI 1013) |
| :---: | :---: |
| SOCI 2033 | Social Problems (ACTS Equivalency = SOCI 2013) |
| GNST 2003 | Introduction to Gender Studies |
| PBHL 1303 | Introduction to Human Sexuality |
| Nine credit hours from the following core courses or committeeapproved special topics courses (taken from two different departments) |  |
| ANTH 3533 | Medical Anthropology |
| ANTH 3563 | Culture and Medicine |
| CHLP 310V | Health Coaches I |
| CHLP 320V | Health Coaches II |
| CHLP 330V | Health Coaches III |
| CIED 3023 | Survey of Exceptionalities |
| COMM 3763 | Health Communication |
| COMM 3923H | Honors Colloquium (Topic: Patient-Provider Communication) |
| ENGL 3873 | Seminar in Medical Humanities |
| GNST 2123 | Gender, Bodies, and Technologies |
| HIST 1233 or AAST 123 | History of Race and Medicine Blistory of Race and Medicine |
| HIST 3923H | Honors Colloquium (Topic: History of Addiction) |
| HIST 4883 | Health and Disease: 1500 to the Present |
| PBHL 2663 | Terminology for the Health Professions |
| PBHL 4643 | Multicultural Health |
| PHIL 3123 | Bioethics |
| SCWK 3163 | On Death and Dying |
| SOCI 3413 | Special Topics (Topic: Sociology of Medicine) |
| SOCI 4013 | Special Topics in Sociology (Topic: Mental Health \& Illness) |
| SPAN 4583 | Advanced Spanish for Health Professions |
| Study Abroad: or Belize. Only toward the min | Health-focused trips to Puebla, Ireland, Sweden, three credit hours from study abroad may count or. |

Six credit hours from the elective courses list below. Core courses listed above may also count toward this requirement if not already being used.

| ANTH 3583 | Body and Identity |
| :--- | :--- |
| COMM 2323 | Interpersonal Communication |
| COMM 4343 | Intercultural Communication |
| COMM 4763 | Health Communication Campaigns |
| HDFS 1403 | Life Span Development |
| HDFS 2413 | Family Relations |
| HDFS 2433 | Child Development |
| HDFS 3463 | The Hospitalized Child: Child Life Programming |
| HDFS 3423 | Adolescent Development |
| HDFS 3443 | Families in Crisis |
| HDFS 3453 | Parenting and Family Dynamics |
| HDFS 4423 | Adult Development |
| HIST 3333 | LGBTQ+ Histories |
| PHIL 3103 | Ethics and the Professions |
| PHIL 4093 | Special Topics in Philosophy (Topic: Philosophy of |
| PHIL 4213 | Race and Gender) |


| PSYC 3013 | Social Psychology |
| :--- | :--- |
| PSYC 3023 | Abnormal Psychology |
| PSYC 3093 | Developmental Psychology (ACTS Equivalency = <br> PSYC 2103) |
| PSYC 3103 | Cognitive Psychology |
| SCWK 4143 | Addiction and the Family |
| SOCI 3193 | Race, Class, Gender, and Sexuality |
| SOCI 3723 | Deviant Behavior |
| SOCI 4153 | Race and Society |
| Total Hours |  |

At least nine credit hours must be in courses numbered 3000 or higher. A maximum of six credit hours will be allowed from any one department.

Students may petition the Medical Humanities Steering Committee to have other courses accepted as requirements for the minor. Additionally, the committee intends to update these elective options if and when relevant new courses become available.

## Courses

MEDH 3223. Special Topics in Medical Humanities. 3 Hours.
Examines the intersections between medical and health topics with humanities or social science fields. (Typically offered: Spring Odd Years) May be repeated for degree credit.

## Medical Sciences and Dentistry

See under Combined Academic and Medical or Dental Degree (p. 273) and also the discussion of the pre-medical programs and the pre-dental program under the section on Health Related Professions (p. 276).

## Medieval and Renaissance Studies (MRST)

Joshua Byron Smith, Director

Timothy Nelson, Assistant Director
333 Kimpel Hall
479-575-4301

Medieval and Renaissance Studies Website (https://fulbright.uark.edu/ programs/medieval-and-renaissance-studies/)

The Medieval and Renaissance studies program is administered by the Humanities program. This program offers a minor that encourages undergraduate students to pursue an interdisciplinary study of all aspects of the Middle Ages and Renaissance as a complement to their major field of study.

Requirements for a Minor in Medieval and Renaissance Studies (MRST): (15-16 credit hours) Students must take MRST 2013 or HIST 1113 or HIST 1113H, or HUMN 1124H and complete at least 12 additional credit hours selected from the courses listed below. Other courses covering the chronological period between 500 C.E. and 1700 C.E. may also be accepted if approved by the program director or codirector. A maximum of 6 hours may be presented from courses taken in the student's designated major.

## Required Core Course

Select one of the following:
MRST 2013 Introduction to Medieval and Renaissance Studies
or HIST 1113nstitutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113)
or HIST 1113 Hbnors Institutions and Ideas of World Civilizations I
or HUMN 1124dthors Equilibrium of Cultures 500-1600
Twelve hours to be chosen from the following (a maximum of
six hours may be presented from courses taken in the student's
major department):
MRST 2013 Introduction to Medieval and Renaissance Studies (Note: MRST 2013/2013H may only satisfy either the MRST core course requirement or 3 credits of the additional MRST-approved coursework requirement, but not both.)
MRST 3013 Special Topics in Medieval Studies
or MRST 30 Honors Special Topics in Medieval Studies
MRST 3023 Special Topics in Early Modern Studies
MRST 4003 Medieval and Renaissance Studies Colloquium
ARHS 4843 Medieval Art
ARHS 4853 Italian Renaissance Art
ARHS 4863 Northern Renaissance Art
ARCH 2233 History of Architecture I
ARCH 4023 Advanced Architectural Studies
ENGL 3433 Introduction to Chaucer
ENGL 4303 Introduction to Shakespeare
ENGL 4713 Studies in Medieval Literature and Culture
SPAN 5203 Medieval Spanish Literature
HIST 3033 Islamic Civilization
HIST 4043 Late Antiquity and the Early Middle Ages
HIST 4053 Late Middle Ages
HIST 4073 Renaissance and Reformation, 1300-1600
HIST 4163 Tudor-Stuart England, 1485-1714
HIST 4393 Early Modern Islamic Empires, 1300-1750
HUMN 3923H Honors Colloquium (when offered as an approved MRST course)
HUMN 425V Colloquium (when offered as an approved MRST course)
MUHS 3703 Music in Western Civilization
PHIL 4023
Total Hours
15-16

## Courses

MRST 2013. Introduction to Medieval and Renaissance Studies. 3 Hours.
An interdisciplinary introduction to the major historical and cultural developments in northern Europe and the Mediterranean basin from approximately 500 to 1600 C.E. (Typically offered: Fall Even Years)

## MRST 3013. Special Topics in Medieval Studies. 3 Hours.

In-depth study of some topic or period of medieval literature, art, history and philosophy. Prerequisite: Sophomore standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

## MRST 3013H. Honors Special Topics in Medieval Studies. 3 Hours.

In-depth study of some topic or period of medieval literature, art, history and philosophy. Prerequisite: Sophomore standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to MRST 3013.

MRST 3023. Special Topics in Early Modern Studies. 3 Hours.
In-depth study of some topic or period of Early Modern literature, art, history and philosophy. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
MRST 4003. Medieval and Renaissance Studies Colloquium. 3 Hours.
Advanced study of some more narrowly focused aspect of medieval and/or Renaissance studies. Prerequisite: Sophomore standing. (Typically offered: Spring Odd Years) May be repeated for up to 6 hours of degree credit.

MRST 4113. Italian Fairy Tales in Literature, Visual Arts, and Cinema. 3 Hours. Explores different typologies of fables and examines the evolution of the genre from the Middle Ages to contemporary times. Taught in Italian. Prerequisite: ITAL 3113 or ITAL 3123 or instructor's consent. (Typically offered: Spring Even Years) This course is cross-listed with ITAL 4113.
MRST 4133. The Power of Women: Representations of from Italian Women from Middle Ages to Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with GNST 4133, ITAL 4133.

## Middle East Studies (MEST)

Shirin Saeidi
Director, King Fahd Center for Middle East Studies
202 Old Main
479-575-2175
mest@uark.edu
Middle East Studies Website (https://fulbright.uark.edu/area-studies/ middle-east-studies/)

Students interested in the Middle East and North Africa and wishing to maximize their potential for academic, business, professional, or government careers related to the area, may earn a second major in Middle East studies with a required primary major in an approved area in Fulbright College such as anthropology, economics, world languages, geography, history, journalism, and political science. New students entering the program are required to notify both the major adviser and the MEST director of their intention to participate. Freshmen and sophomores considering this program are advised to begin their study of a Middle East language as early as possible. Students may also earn a minor in Middle East studies.

Requirements for a Combined Major in Middle East Studies: In order to add a combined major in Middle East Studies, students are required to select a primary major in one of the following approved fields: anthropology, Arabic, communication, economics (B.A.), French, geography, history, international studies, journalism, political science, sociology, or Spanish. Up to nine credit hours in the primary major may count toward the combined major in Middle East Studies with the permission of the program director.

| MEST 2013 | Introduction to Middle East Studies | 3 |
| :---: | :---: | :---: |
| $\begin{gathered} \text { MEST } 4003 \\ \text { or MEST } \end{gathered}$ | Middle East Studies Colloquium Honors Middle East Studies Colloquium | 3 |
| Six credit hou <br> Arabic II. Oth including cou study-abroad for all or part | Arabic language beyond ARAB 2016 Immersive abic courses approved by the program director, completed in a summer intensive Arabic program or ram in an Arabic-speaking country, may substitute is requirement. | 6 |

18 credit hours in additional Middle East Studies (MEST) or related courses from the list below, to be chosen from at least two disciplines, with no fewer than nine credit hours from one discipline. MEST 4003/ MEST 4003 H may be repeated for up to six credit hours and count toward this requirement.

| ANTH 3903 | Topics in Anthropology (Topic must be related to <br> Middle East Studies and approved by the program |
| :--- | :--- |
|  | director.) |
| ANTH 3923H |  | | Honors Colloquium (Topic must be related to |
| :--- |
|  |
|  |
| Middle East Studies and approved by the program |
| director.) |

or MEST 420VH
PLSC 3523 Politics of the Middle East
PLSC 390V Special Topics (Topic must be related to Middle East Studies and approved by the program director.)
PLSC 400V Special Topics (Topic must be related to Middle East Studies and approved by the program director.)
PLSC 4523 Introduction to Gender and Politics in the Middle East
PLSC 4593 Islam and Politics
PLSC 4633 Citizenship in the Middle East
PLSC 4843 The Middle East in World Affairs
WLIT 3523 The Quran as Literature
WLIT 3713 Literature of Spain
WLIT 3983 Special Studies (Topic must be related to Middle East Studies and approved by the program director.)
or other courses such as individualized readings, directed research courses, or courses in a second Middle Eastern language with the approval of the program director.

Total Hours

## Requirements for a Minor in Middle East Studies:

Students must complete 18 hours:

## Required Courses

MEST 2013 Introduction to Middle East Studies 3
MEST 4003 Middle East Studies Colloquium 3

ARAB 1016 Immersive Arabic I (or its equivalent) 6
Middle East Studies Core Courses 6
Students must complete an additional 6 hours of MEST core courses supervised by faculty participating in the program. Students choosing to take individualized reading or directed research courses as a part of the minor must obtain the approval of the Middle East Studies director and their major adviser.

## Total Hours

## Requirements for Honors in MEST:

The Honors Program in Middle East Studies gives junior and senior students of high ability the opportunity to enroll in enriched courses and conduct independent research culminating in an honors thesis. In addition to satisfying the general Fulbright College requirements for graduation and the basic eligibility requirements for honors as established by the Honors Council, candidates for honors in Middle East Studies must complete 12 hours of honors credit in partial satisfaction of requirements for the co-major. One to 6 of these hours may be thesis hours (MEST 399V).

The preferred method for satisfying the remaining hours is to enroll in the colloquium at least once for honors credit (MEST 4003H) and to take relevant honors colloquia or graduate courses (with permission) in one of the departments contributing to this interdisciplinary area study. The thesis committee shall include a representative from the major discipline (in the case of multiple majors, from the discipline contributing most significantly to the topic). Successful completion of these requirements will be recognized by the award of the distinction "Middle East Studies

Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Faculty

Antov, Nikolay Atanasov, Ph.D. (University of Chicago), M.A. (Bilkent University, Turkey), B.A. (American University in Bulgaria), Associate Professor, Department of History, 2011, 2017.
Ghadbian, Najib, Ph.D. (City University of New York), M.A. (City University of New York), M.A. (Rutgers University), B.Sc. (United Arab Emirates University), Associate Professor, Department of Political Science, 1999, 2005.
Gordon, Joel Samuel, Ph.D. (University of Michigan-Ann Arbor), B.A. (University of Illinois), Professor, Department of History, 1999, 2007.
Haydar, Adnan Fuad, Ph.D. (University of California-San Diego), M.A., B.A. (American University of Beirut), Professor, Department of World Languages, Literatures and Cultures, 1993.
Haydar, Paula Marie, Ph.D., M.F.A. (University of Arkansas), M.Ed., B.S. (University of Massachusetts), Associate Professor, Department of World Languages, Literatures and Cultures, 2006, 2023.
Kahf, Mohja, Ph.D., B.A. (Rutgers State University-New Brunswick), Professor, Department of English, 1995, 2019.
Mahmoud, Rania, Ph.D. (University of Washington), M.A. (Old Dominion University), B.A., (University of Alexandria, Egypt), Assistant Professor, Department of World Languages, Literatures and Cultures, 2017.
Paradise, Thomas R., Ph.D. (Arizona State University), M.Sc. (Georgia State University), F.G.A. (Goldsmith Hall Gem-A, London), G.G. (Gemological Institute of America), B.S. (University of Nevada), University Professor, Department of Geosciences, 2000, 2016.
Saeidi, Shirin, Ph.D. (University of Cambridge, United Kingdom), M.A. (George Mason University), B.A. (University of Maryland-College Park), Assistant Professor, Department of Political Science, 2018.

## Courses

MEST 2003. Introduction to Islam. 3 Hours.
This course introduces Islam as a global religion and world civilization, including study of the Qur'an, prophet Muhammad, ritual and community practices, metaphysics, mysticism, art, literature, and sacred and critical history. (Typically offered: Irregular)

## MEST 2003H. Honors Introduction to Islam. 3 Hours.

This course introduces Islam as a global religion and world civilization, including study of the Qur'an, prophet Muhammad, ritual and community practices, metaphysics, mysticism, art, literature, and sacred and critical history. (Typically offered: Irregular)
This course is equivalent to MEST 2003.
MEST 2013. Introduction to Middle East Studies. 3 Hours.
This course is designed to provide students with fundamental building blocks for understanding the contemporary Middle East/Islamic World. Students will be introduced to a variety of disciplinary approaches to the study of the geo-cultural region, including history, politics, arts and literature, religions and cultures, social geography, and economics. (Typically offered: Fall)

MEST 3003. Islam: Beliefs and Practices. 3 Hours.
Explores the relationship between teachings, norms, customary practices and Muslim perception of Islam. Examines theoretical concepts and practices, such as war and peace, democracy, pluralism, modernity, human rights, environment, gender, Islamic law, nation-state, and citizenship in addition to the basic tenets of Islam. (Typically offered: Spring)

MEST 3003H. Honors Islam: Beliefs and Practices. 3 Hours.
Explores the relationship between teachings, norms, customary practices and Muslim perception of Islam. Examines theoretical concepts and practices, such as war and peace, democracy, pluralism, modernity, human rights, environment, gender, Islamic law, nation-state, and citizenship in addition to the basic tenets of Islam. Prerequisite: Honors standing. (Typically offered: Spring) This course is equivalent to MEST 3003.
MEST 340V. MEST Independent Study. 1-3 Hour.
An exploration of varied topics related to the Middle East and North Africa studied independently with the supervision of a faculty member. Credit arranged with instructor. Prerequisite: Instructor consent and junior standing (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

## MEST 340VH. Honors MEST Independent Study. 1-3 Hour.

An exploration of varied topics related to the Middle East and North Africa studied independently with the supervision of a faculty member. Credit arranged with instructor. Prerequisite: Instructor consent, junior standing and honors standing. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.
This course is equivalent to MEST 340 V .

## MEST 399V. MEST: Honors Thesis. 1-6 Hour.

Middle East Studies Honors research, readings and thesis. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## MEST 4003. Middle East Studies Colloquium. 3 Hours.

An interdepartmental colloquium with an annual change in subject required of all students in the Middle East studies program. Prerequisite: Sophomore standing. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

## MEST 4003H. Honors Middle East Studies Colloquium. 3 Hours.

Honors colloquium. (Typically offered: Spring) May be repeated for up to 3 hours of degree credit.
This course is equivalent to MEST 4003.
MEST 4103. Special Topics in Middle East Studies. 3 Hours.
Courses in lecture or seminar format to be offered in a variety of disciplines relating to the history, culture, politics, geography, languages, literature, arts, and religions of the Middle East, North Africa, and/or Islamic world. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

## Music (MUSC)

Lia Uribe
Department Chair
201 Music Building
479-575-4138
Email: luribe@uark.edu
music@uark.edu
Department of Music Website (https://fulbright.uark.edu/departments/ music/)

The Department of Music offers three majors, one music major leading to a Bachelor of Music and a second leading to a Bachelor of Arts, and a third, music education, leading to a Bachelor of Music degree. The department also offers a minor in music. The Bachelor of Music offers a variety of concentrations as well as a program with elective studies in business.

The music department strives to enrich and inspire the human mind and spirit through the pursuit of excellence in creative activity, research, teaching, and service. The University of Arkansas is an accredited institutional member of the National Association of Schools of Music. The
requirements for entrance and for graduation as set forth in this catalog are in accordance with the published regulations of that Association.

## General Music Requirements

To achieve junior standing in the curriculum leading to the Bachelor of Arts degree with a major in music and the Bachelor of Music degree, the student must have completed 56 hours and must have maintained a cumulative grade average of " C " in all music courses, with the exception of ensemble, by the end of the fourth semester. The student must also have earned a grade average of not less than " B " in the major applied field of study during the sophomore year. This standing is prerequisite to all 3000-level courses and above in music.

Pursuant to enrolling in applied music courses, all music majors must audition for the music department faculty. Private study of the primary voice/instrument for music majors requires the successful completion of an audition for the instructor and consent of the Department of Music. Music majors are expected to own their own instruments. Some instruments are provided for student use only in certain circumstances and at the discretion of the music department.

All music majors, with exceptions noted below, are required to enroll in MUEN 1411 Razorback Chorus I or MUEN 1591 Treble Chorus I during the first year of residence. Exceptions to the requirement would include all students pursuing the Bachelor of Music (B.M.) degree for whom voice or piano is the major applied area.

Piano Proficiency Requirement: Students pursuing a Bachelor of Music degree must pass a piano proficiency examination upon entering the University of Arkansas or must register in piano classes until this requirement is met. Students with previous piano training may take a piano placement exam and be advised to omit one or more semesters of Class Piano (MUAC 1221, MUAC 1231, MUAC 2221). Students will receive college credit for the omitted class piano courses if they validate their higher placement by passing an advanced piano course with a grade of " $B$ " or better.

On the basis of prior study in music, a student may be advised to omit one or more semesters of Aural Perception (MUTH 1621, MUTH 1631, MUTH 2621). Students will receive college credit for the omitted aural perception courses when they have validated their higher placement by passing the course in which they are placed with a grade of " B "or better.

Writing Requirement: Students can meet the Fulbright College writing requirement by submission of a satisfactory term paper for MUED 4112 (music education majors) or MUHS 4253 (all other music majors).

## Requirements for a Major in Music leading to a Bachelor of Arts Degree

This program is for undergraduates who wish to major in music as part of a liberal arts program. In addition to the state minimum core (p. 81) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met.

| State Minimum Core Requirements including: | 35 |
| :--- | ---: | ---: |
| MLIT 1013 Music and Society |  |
| A World Language Course at the 1013 Elementary II Level. | 3 |
| MUEN 1411 $\quad$ Razorback Chorus I |  |
| or MUEN   <br> Music Theory Treble Chorus I 1 <br> MUTH 1603 Music Theory I 3 |  |


| MUTH 2603 Music Theory II | 3 |
| :--- | :--- |
| Select one of the following: | 3 |

MUTH 3613 Form and 20th Century Techniques or MUTH 360@Bth Century Counterpoint or MUTH 372ßazzz Analysis

## Aural Perception

MUTH 1621 Aural Perception I 1

MUTH 1631 Aural Perception II 1
MUTH 2621 Aural Perception III 1
Class Piano
MUAC 1221 Piano Class for Music Majors I 1
MUAC 1231 Piano Class for Music Majors II 1
Musicology
MUHS 3703 Music in Western Civilization 3
MUHS 3713 Topics in Musicology 3
MUHS 4253 Capstone Project Seminar 3
Applied Lessons (2-credit courses) 8
MUAP 110V Applied Major Voice/Instrument I or MUAP 211Applied Major Voice/Instrument II or MUAP 101Applied Secondary-Level Voice/Instrument I or MUAP 201Applied Secondary-Level Voice/Instrument II
Ensemble Electives (consult with adviser for selections) 4
Any Music Department credit hours 3000-level or higher 6
Any Fulbright College offered credit hours 3000-level or higher 6
Any UA offered credit hours 3000-level or higher 6
Any 3000-level or higher credit hours or any 2000-level credit hours 10
which have a course prerequisite
General Electives 18
Total Hours 120

## Music B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program, and should consult their music adviser for an eight-semester plan that is specific to their vocal, instrumental or theoretical emphasis area in music. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Units <br> Spring |  |
| :--- | :---: | ---: |
| UNIV 1001 University Perspectives | 3 |  |
| MUTH 1003 Basic Musicianship (or Elective) <br> World Language at 1013 Elementary II level <br> Satisfies General Education Outcome 2.1: <br> MATH 1313 Quantitative Reasoning (ACTS | 3 |  |

MUAP 110V Applied Major Voice/Instrument I or MUAP 100V Applied Secondary-Level Voice/ Instrument I
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)
MUTH 1603 Music Theory I
MUTH 1621 Aural Perception I
MUAC 1221 Piano Class for Music Majors I
MLIT 1013 Music and Society (Satisfies General Education Outcomes 1.2 and 3.1$)^{1}$
or MATH 1313 Quantitative Reasoning (ACTS
Equivalency = MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency $=$ MATH 1103)
MUAP 110V Applied Major Voice/Instrument I
or MUAP 100V Applied Secondary-Level Voice/ Instrument I
MUEN Music Ensemble I (see adviser)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
Year Total:
Second Year Fall

MUTH 2603 Music Theory II
MUTH 1631 Aural Perception II
MUAC 1231 Piano Class for Music Majors II
MUAP 210V Applied Major Voice/Instrument II or MUAP 200V Applied Secondary-Level Voice/ Instrument II
or MUAP 110V Applied Major Voice/Instrument I or MUAP 100V Applied Secondary-Level Voice/ Instrument I
MUEN Music Ensemble II (see adviser)
Science Lecture/Lab State Minimum Core Course
(Satisfies General Education Outcome 3.4)
Social Sciences State Minimum Core (Satisfies
General Education Outcomes 3.3 and 4.1) ${ }^{2}$
Select one of the following MUTH courses
MUTH 3603 18th Century Counterpoint
MUTH 3613 Form and 20th Century Techniques
MUTH 3723 Jazz Analysis
MUTH 477V Special Topics in Music Theory
MUTH 2621 Aural Perception III
MUAP 210V Applied Major Voice/Instrument II
or MUAP 200V Applied Secondary-Level Voice/ Instrument II
or MUAP 110V Applied Major Voice/Instrument I or MUAP 100V Applied Secondary-Level Voice/ Instrument I
MUEN Music Ensemble II (see adviser)

## General Electives

U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2)

Sciences State Minimum Core (Satisfies

MUHS 3713 Topics in Musicology 3
Fulbright College Elective 3
General Electives 5
Science Lecture/Lab State Minimum Core Course 4
2 (Satisfies General Education Outcome 3.4)
Year Total: 15

Units
Spring
General Education Outcome 6.1)
Music Elective 3000-level or higher 3
Electives 5
MUEN Music Ensemble IV (see adviser) 1

Humanities state minimum core (Satisfies General 3
Education Outcome 3.2) ${ }^{4}$
General Electives 12
Social Sciences state minimum core (different 3
field of study from other Social Science courses if necessary) (Satisfies General Education Outcome
3.3)

Year Total: $\quad 15$

Total Units in Sequence: 120
B.A. students must complete one of the following courses focused on music from outside the western art tradition. Credits taken in this category may be used to satisfy other degree requirements (for example, MUSY 2003 Music in World Cultures also satisfies a
3 core requirement, MUTH 3723 Jazz Analysis also satisfies a theory requirement, etc.)

BA World Music Requirement Options (* refers to 1, 2, 3, or 4 depending on level)
MUSY 2003 Music in World Cultures
MUAC 3401 Jazz Improvisation I
MUEN *421 Inspirational Chorale
MUEN *471 Jazz Orchestra
MUEN *211 Latin American Ensemble
MUEN *261 Intermediate Jazz Combo
MUEN *271 Advanced Jazz Combo
MUEN *241 Beginning Jazz Combo
1 MUEN *221 World Music Ensemble
6 MUEN *251 Arkansas Soul Band
3 MUEN *231 Songwriters' Ensemble
MUTH 3723 Jazz Analysis
MUTH 3733 Functional Jazz Piano

MUTH 3742 Jazz Arranging
MUHS 3503 Jazz History
MUHS 3713 Topics in Musicology
MLIT 1333 Popular Music
${ }^{1}$ If students select MLIT 1013H, it satisfies General Education Outcomes 1.2 and 3.1. If students select MATH 1313 or MATH 1203, it satisfies General Education Outcome 2.1.
${ }^{2}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{3}$ The Social Sciences Elective courses that satisfy General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H,HUMN 2114H, INST 2013, INST 2813, INST 2813H,PLSC 2813, or PLSC 2813H.
${ }^{4}$ The Humanities Elective courses that satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Requirements for B.M. with Composition Concentration

| Composition Concentration |
| :--- |
| University Core Requirements including: |
| MLIT 1013 | Music and Society

A World Language Course at the 1013 Elementary II Level.

## Music Theory

MUTH 1003 Basic Musicianship (if required based on placement test, see adviser)

| MUTH 1603 | Music Theory I $^{1}$ | 3 |
| :--- | :--- | :--- |
| MUTH 2603 | Music Theory II $^{1}$ | 3 |
| Select two of the following: | 6 |  |


| MUTH 3603 18th Century Counterpoint |  |
| :---: | :---: |
| or MUTH 3623 |  |
| or MUTH 372ひazz Analysis |  |
| or MUTH | FSpecial Topics in Music Theory |
| MUTH 3613 | Form and 20th Century Techniques ${ }^{1}$ |

## Aural Perception

| MUTH 1621 | Aural Perception I | 1 |
| :--- | :--- | :--- |
| MUTH 1631 | Aural Perception II | 1 |
| MUTH 2621 | Aural Perception III | 1 |

MUTH 2631 Aural Perception IV 1
Music History
MUHS 3703 Music in Western Civilization ..... 3
MUHS 3713 Topics in Musicology ..... 3
MUHS 4253 Capstone Project Seminar ..... 3
Music Technology and Conducting
MUAC 2112 Music Technology ..... 2
MUPD 3801 Conducting I ..... 1
Piano
MUAC 1221 Piano Class for Music Majors I ${ }^{2} \quad 1$
MUAC 1231 Piano Class for Music Majors II ${ }^{2}$ ..... 1
MUAC 2221 Piano Class for Music Majors III ${ }^{2}$ ..... 1
MUAC 2231 Piano Class for Music Major IV (Concentration ..... 1
Ensemble
Ensemble (7 hours; See adviser for ensemble selections) ..... 7
Vocal/Diction
MUEN 1411 Razorback Chorus I ..... 1
or MUEN 1591 Treble Chorus I
Applied Major-Level Courses ( 16 credits count as B.M. core and ..... 17
1 is concentration credit)
MUAP 110V Applied Major Voice/Instrument I (2 credits persemester)
or MUAP 130Applied Skills Voice/Instrument I
MUAP 210V Applied Major Voice/Instrument II (2 credits persemester)
or MUAP 231Applied Skills Voice/Instrument II
MUAP 310V Applied Major Voice/Instrument III (2 credits persemester)
or MUAP 330Applied Skills Voice/Instrument III
MUAP 410V Applied Major Voice/Instrument IV (2 credits persemester)
or MUAP 41!Applied Skills Voice/Instrument IV
MUAP 4201 Applied Recital II
or MUAP 43@omposition Recital
Additional Concentration Credits22
Students must select a track that specifies their instrument.
MUTH 4612 Orchestration
Electives ( 6 credits)
Composition Courses (14 hours)
MUTH 164V Composition I
MUTH 264V Composition II
MUTH 364V Composition III
MUTH 464V Composition IV
Total Hours120
${ }^{1}$ Students majoring in Composition must receive a grade of "B" or higherin MUTH 1603, MUTH 2603, and MUTH 3613.
${ }^{2}$ Demonstration of piano skills appropriate for a composer; see Piano Proficiency Requirement above.

## Music B.M., Music Composition Concentration

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program, and should consult with their music adviser about the requirements in their concentration's eight-semester plan. Music core requirement hours may vary, based on placement and previous credit granted. If a music core requirement is met without taking a class, students will substitute an elective for the core class.

| First Year |  |
| :---: | :---: |
|  | Fall |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |
| 1013 Elementary II world language course | 3 |
| MUTH 1003 Basic Musicianship (if required or Elective) | 3 |
| MUAP 110V Applied Major Voice/Instrument I | 2 |
| MUEN 1411 Razorback Chorus I or MUEN 1591 Treble Chorus I | 1 |
| MUEN Ensemble I (see adviser) | 1 |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  |
| MLIT 1013 Music and Society (Satisfies General Education Outcomes 1.2 and 3.1) |  |
| MUTH 1603 Music Theory I (grade of B or better) |  |
| MUTH 1621 Aural Perception I |  |
| MUAC 1221 Piano Class for Music Majors I |  |
| MUAP 110V Applied Major Voice/Instrument I |  |
| MUEN Music Ensemble I (see adviser) |  |
| Year Total: | 13 |
| Second Year |  |
|  | Fall |
| HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) (Satisfies General Education Outcomes 3.2, 3.3 and 4.1 ) | 3 |
| Science Lecture/Lab State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |
| MUTH 2603 Music Theory II (grade B or better) ${ }^{1}$ | 3 |
| MUTH 1631 Aural Perception II | 1 |
| MUAC 1231 Piano Class for Music Majors II | 1 |
| MUAC 2112 Music Technology | 2 |
| MUAP 210V Applied Major Voice/Instrument II | 2 |
| MUEN Music Ensemble II (see adviser) | 1 |
| HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123) (Satisfies General Education Outcomes 3.2, 3.3, and 4.1) |  |

Satisfies General Education Outcome 2.1:

MATH 1313 Quantitative Reasoning (ACTS
Equivalency $=$ MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency = MATH 1103)
or any MATH course numbered higher than MATH 1203
Select one of the following: ${ }^{2}$
MUTH 3603 18th Century Counterpoint ${ }^{2}$
or MUTH 3623
or MUTH 3723 Jazz Analysis
or MUTH 477V Special Topics in Music Theory
MUTH 2621 Aural Perception III ${ }^{1} 1$
MUAC 2221 Piano Class for Music Majors III 1
MUAP 210V Applied Major Voice/Instrument II 2
MUTH 164V Composition I 2
or MUTH 264V Composition II
MUEN Music Ensemble II (see adviser) 1
$\begin{array}{lll}\text { Year Total: } & 17 & 16\end{array}$

MUSY 2003 Music in World Cultures
or WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113)
Satisfies General Education Outcome 3.2:
Select one of the following as needed: ${ }^{2}$
MUTH 3603 18th Century Counterpoint
or MUTH 3623
or MUTH 3723 Jazz Analysis
or MUTH 477V Special Topics in Music Theory
MUHS 3713 Topics in Musicology ${ }^{1,2}$
MUAP 310V Applied Major Voice/Instrument III 2
or MUAP 130V Applied Skills Voice/Instrument I
MUTH 364V Composition III ${ }^{2}$
MUEN Music Ensemble III (see adviser) ${ }^{2}$ 1
Year Total: 15
15

| Fourth Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| U.S. History or Government State Minimum Core <br> (Satisfies General Education Outcome 4.2) | 3 |  |
| Science Lecture/Lab State Minimum Core <br> (Satisfies General Education Outcome 3.4) | 4 |  |
| MUHS 4253 Capstone Project Seminar (Satisfies <br> General Education Outcome 6.1) | 3 |  |


| MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$ or MUAP 230V Applied Skills Voice/Instrument II | 2 |  |
| :---: | :---: | :---: |
| MUTH 464V Composition IV ${ }^{2}$ | 3 |  |
| MUEN Music Ensemble IV (see adviser) ${ }^{2}$ | 1 |  |
| Social Sciences Course (non-HIST) State Minimum Core (Satisfies General Education Outcomes 3.3 and 5.1$)^{3}$ |  | 3 |
| MUTH 4612 Orchestration ${ }^{2}$ |  | 2 |
| MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$ or MUAP 230V Applied Skills Voice/Instrument II |  | 2 |
| MUTH 464V Composition IV ${ }^{2}$ |  | 3 |
| MUAP 4301 Composition Recital ${ }^{2}$ or MUAP 4201 Applied Recital II |  | 1 |
| Elective (MUEN Music Ensemble IV recommended as part of this, see adviser) |  | 3 |
| Year Total: | 16 | 14 |
| Total Units in Sequence: |  | 120 |
| ${ }^{1}$ Meets 40-hour advanced credit hour requirement. |  |  |
| ${ }^{2}$ Meets 24 -hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. |  |  |
| ${ }^{3}$ The Social Sciences Elective that satisfies General Outcomes 3.3 and 5.1 include: CLST 1003, CLST HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003 PHIL 2103 C . | ation | 013, |

## Requirements for a Major in Music leading to a Bachelor of Music Degree with Elective Studies in Business

In addition to the University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met.

And all of the following:

| HIST 1113 | Institutions and Ideas of World Civilizations I <br> (ACTS Equivalency = HIST 1113) | $\mathbf{3}$ |
| :--- | :--- | :--- |
| HIST 1123 | Institutions and Ideas of World Civilizations II <br> (ACTS Equivalency = HIST 1123) | $\mathbf{3}$ |
| MUSY 2003 | Music in World Cultures <br> or WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS <br> Equivalency = ENGL 2113) |
| Students must complete a World Language course at the 1013 |  |  |


| MUAC 1231 | Piano Class for Music Majors II | 1 |
| :---: | :---: | :---: |
| MUAC 2221 | Piano Class for Music Majors III | 1 |
| MUAC 2231 | Piano Class for Music Major IV | 1 |
| MUAC 2112 | Music Technology | 2 |
| MUHS 3703 | Music in Western Civilization | 3 |
| MUHS 3713 | Topics in Musicology | 3 |
| MUHS 4253 CAP | STONE PROJECT SEMINAR | 3 |
| Applied Instrume | nt/Voice | 14 |
| MUAP 110 V | Applied Major Voice/Instrument I (4 Hours) ${ }^{1}$ |  |
| MUAP 210 V | Applied Major Voice/Instrument II (4 Hours) ${ }^{1}$ |  |
| MUAP 310V | Applied Major Voice/Instrument III (4 Hours) ${ }^{2}$ |  |
| MUAP 410V | Applied Major Voice/Instrument IV (1 Hour) |  |
| MUAP 3201 | Applied Recital I |  |
| MUPD 3801 | Conducting I | 1 |
| MUEN 1411 or MUEN 1591 | Razorback Chorus I Treble Chorus I | 1 |
| 7 MUEN to be sel | ected with the consent of the student's adviser. | 7 |
| Student must dec Minor for Non-Bus declared minor. | lare one concentration for a Business Administration siness Students and fulfill all requirements for that | 21 |

## Total Hours

${ }^{1}$ All students must complete two semesters of MUAP 110 V with a grade of "A" or "B" and two semesters of MUAP 210 V with a grade of "A" or " B " before enrolling in MUAP 310V.

## Music B.M., with Elective Studies in Business Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program, and should consult their music adviser for an eight-semester plan that is specific to their vocal, instrumental or theoretical emphasis area in music. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 3 |  |
| MUTH 1003 Basic Musicianship (if required) | 2 |  |
| MUAP 110V Applied Major Voice/Instrument I | 1 |  |
| MUEN 1411 Razorback Chorus I |  |  |
| or MUEN 1591 Treble Chorus I | 3 |  |

or HIST 1113 Institutions and Ideas of World
Civilizations I (ACTS Equivalency = HIST 1113)
or HIST 1123 Institutions and Ideas of World
Civilizations II (ACTS Equivalency = HIST 1123)
ISYS 1120
0
MATH 2053 Finite Mathematics (Satisfies General 3
Education Outcome 2.1)

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)
MUTH 1603 Music Theory I
MUTH 1621 Aural Perception I
MUAC 1221 Piano Class for Music Majors I
MUAP 110V Applied Major Voice/Instrument I
MUEN Music Ensemble I (see adviser)
MLIT 1013 Music and Society (as needed) ${ }^{1}$ or HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) or HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
ACCT 2013 Accounting Principles
Year Total:

| Second Year | Fall |
| :--- | ---: |
| MUTH 2603 Music Theory II |  |
| MUTH 1631 Aural Perception II | 3 |
| MUAC 1231 Piano Class for Music Majors II | 1 |
| MUAC 2112 Music Technology | 1 |
| MUAP 210V Applied Major Voice/Instrument II | 2 |
| MUEN Music Ensemble II (see adviser) | 2 |
| MLIT 1013 Music and Society (as needed) | 1 |
| or HIST 1113 Institutions and Ideas of World | 3 |
| Civilizations I (ACTS Equivalency = HIST 1113) |  |
| or HIST 1123 Institutions and Ideas of World |  |
| Civilizations II (ACTS Equivalency = HIST 1123) |  |
| COMM 1313 Public Speaking (ACTS Equivalency | 3 |
| = SPCH 1003) (prerequisite for WCOB 1033; |  |
| grade "C"or better required) |  |
| Upper Level Elective ${ }^{3}$ |  |
| MUTH 2621 Aural Perception III ${ }^{3}$ |  |
| MUAC 2221 Piano Class for Music Majors III |  |
| MUAP 210V Applied Major Voice/Instrument II |  |
| MUEN Music Ensemble II (see adviser) |  |
| WCOB 1033 |  |
| MUSY 2003 or WLIT 1113, or University/state core |  |
| non-HIST social science ${ }^{2}$ |  |
| Year Total: | 16 |

Third Year Fall

MUTH 3613 Form and 20th Century Techniques ${ }^{3,4}$ 3
MUTH 2631 Aural Perception IV ${ }^{3,4}$
MUAC 2231 Piano Class for Music Major IV
MUHS 3703 Music in Western Civilization ${ }^{3,4}$
MUAP 310V Applied Major Voice/Instrument IIII
MUEN Music Ensemble (see adviser) ${ }^{3,4}$

ECON 2143 Basic Economics: Theory and

Practice (Satisfies General Education Outcome 3.3)

3 MUTH 4612 Orchestration $^{3,4} 2$
MUHS 3713 Topics in Musicology ${ }^{3,4} 3$
MUAP 310V Applied Major Voice/Instrument III ${ }^{3,4} 2$
MUEN Music Ensemble III (see adviser) ${ }^{3,4} 1$
Satisfies General Education Outcome 4.2:
HIST 2003 History of the American People to 1877
(ACTS Equivalency $=$ HIST 2113)
or HIST 2013 History of the American People,
1877 to Present (ACTS Equivalency = HIST 2123)
or PLSC 2003 American National Government
(ACTS Equivalency $=$ PLSC 2003)
Select course from Business Administration Minor 3
Concentration requirement ${ }^{5}$
3 General Elective 1
17 Year Total: 15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MUAP 410V Applied Major Voice/Instrument IV ${ }^{3,4}$ | 1 |  |
| MUAP 3201 Applied Recital I | 1 |  |
| MUEN Music Ensemble IV (see adviser) ${ }^{3,4}$ | 1 |  |
| Science State Minimum Core lecture and <br> corequisite lab (Satisfies General Education | 4 |  |
| Outcome 3.4) <br> MUSY 2003 or WLIT 1113, or non-HIST social | 3 |  |

MUSY 2003 or WLIT 1113, or non-HIST social
3

3
Select course from Business Administration Minor

1
General Elective
(Satisfies General Education Outcome 6.1) ${ }^{3,4}$
MUEN Music Ensemble (see adviser) ${ }^{3,4}$
Science State Minimum Core lecture and
corequisite lab (Satisfies General Education
Outcome 3.4)
Select two courses from Business Administration 6
Minor Concentration requirement ${ }^{5}$
Year Total:
14

Total Units in Sequence: 120
${ }^{1}$ Students must complete all 11 learning outcomes within the General Education Curriculum. MLIT 1013 satisfies General Education Outcomes 1.2 and 3.1. HIST 1113 and HIST 1123 satisfy General Education Outcomes 3.2, 3.3, and 4.1.
${ }^{2}$ MUSY 2003 and WLIT 1113 satisfy the General Education Outcomes 3.2 and 4.1. If students select a non-HIST Social Sciences requirement, they must select courses that satisfy General Education Outcomes 3.3 and 5.1 including: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
${ }^{3}$ Meets 40 -hour advanced credit hour requirement
${ }^{4}$ Meets 24 -hour ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule.
${ }^{5}$ Choose one concentration for Business Administration Minor for NonBusiness Students (p. 695).

## Guitar Performance Concentration



A World Language Course at the 1013 Elementary II Level. 3

## Music Theory

MUTH 1003 Basic Musicianship (if required based on placement test, see adviser)
MUTH 1603 Music Theory I 3

MUTH 2603 Music Theory II 3
Select two of the following: 6
MUTH 3603 18th Century Counterpoint
or MUTH 36:
or MUTH 37:Jazz Analysis
or MUTH 47 Special Topics in Music Theory
MUTH 3613 Form and 20th Century Techniques

| Aural Perception |  |  |
| :--- | :--- | :--- |
| MUTH 1621 | Aural Perception I | 1 |
| MUTH 1631 | Aural Perception II | 1 |
| MUTH 2621 | Aural Perception III | 1 |
| MUTH 2631 | Aural Perception IV | 1 |

Music History
MUHS 3703 Music in Western Civilization 3
MUHS 3713 Topics in Musicology 3
MUHS 4253 Capstone Project Seminar 3
Music Technology and Conducting
MUAC $2112 \quad$ Music Technology
MUPD 3801 Conducting I 1

## Piano

MUAC 1221 Piano Class for Music Majors I
MUAC 1231 Piano Class for Music Majors II 1
MUAC 2221 Piano Class for Music Majors III 1

MUAC $2231 \quad$| Piano Class for Music Major IV (Concentration |
| :--- |
| credit) |

Applied Guitar ( 16 credits count as B.M. core and 12 are 28 concentration credits)
MUAP 110V Applied Major Voice/Instrument I (3 credits each

MUAP 210V Applied Major Voice/Instrument II (3 credits each semester)
MUAP 310V Applied Major Voice/Instrument III (4 credits one semester and then 3 credits when taking MUAP 3201)

MUAP 410V Applied Major Voice/Instrument IV (4 credits one semester and then 3 credits when taking MUAP 4201)

MUAP 3201 Applied Recital I
MUAP 4201 Applied Recital II

## Ensemble

Ensemble (7 hour
MUEN 1411 Razorback Chorus I ..... 1
or MUEN 1591 Treble Chorus I
Additional Concentration Credits ..... 11

Students must select a track that specifies their instrument.

| MUTH 4612 | Orchestration |
| :--- | :--- |
| MUHS 4703 | Survey of String Literature |

Electives (6 credits)
Total Hours120

## Music B.M., Guitar Performance Concentration Eight Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program, and should consult with their music adviser about the requirements in their concentration's eight-semester plan. Music core requirement hours may vary, based on placement and previous credit granted. If a music core requirement is met without taking a class, students will substitute an elective for the core class.

| First Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| 1013 Elementary II world language course | 3 |  |
| MUTH 1003 Basic Musicianship (if required, or | 3 |  |
| Elective) |  |  |
| MUAP 110V Applied Major Voice/Instrument I | 3 |  |
| MUEN 1411 Razorback Chorus I | 1 |  |
| or MUEN 1591 Treble Chorus I |  |  |
| MUEN Music Ensemble I (see adviser) | 1 |  |
| ENGL 1023 Composition II (ACTS Equivalency |  | 3 |
| = ENGL 1023) (Satisfies General Education |  |  |
| Outcome 1.1) |  | 3 |
| MLIT 1013 Music and Society (Satisfies General |  | 3 |
| Education Outcomes 1.2 and 3.1) |  | 3 |
| MUTH 1603 Music Theory I |  | 1 |
| MUTH 1621 Aural Perception I |  | 1 |
| MUAC 1221 Piano Class for Music Majors I |  | 3 |
| MUAP 110V Applied Major Voice/Instrument I |  | 1 |
| MUEN Music Ensemble I (see adviser) | 14 | 15 |
| Year Total: |  |  |

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

HIST 1113 Institutions and Ideas of World
(Satisfies General Education Outcomes 3.2, 3.3, and 4.1)
MUTH 2603 Music Theory II ${ }^{1}$
MUTH 1631 Aural Perception II 1

| MUAC 1231 Piano Class for Music Majors II | 1 |  |
| :---: | :---: | :---: |
| MUAC 2112 Music Technology | 2 |  |
| MUAP 210V Applied Major Voice/Instrument II | 3 |  |
| MUEN Music Ensemble II (see adviser) | 1 |  |
| HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123) (Satisfies General Education Outcomes 3.2, 3.3, and 4.1 ) |  | 3 |
| Satisfies General Education Outcome 2.1: |  |  |
| MATH 1313 Quantitative Reasoning (ACTS Equivalency = MATH 1113) or MATH 1203 College Algebra (ACTS |  | 3 |
| Equivalency $=$ MATH 1103) or any MATH course numbered higher than MATH 1203 |  |  |
| Select one of the following: ${ }^{2}$ |  | 3 |
| MUTH 3603 18th Century Counterpoint <br> or MUTH 3623 <br> or MUTH 3723 Jazz Analysis <br> or MUTH 477V Special Topics in Music Theory |  |  |
| MUTH 2621 Aural Perception III ${ }^{1}$ |  | 1 |
| MUAC 2221 Piano Class for Music Majors III |  | 1 |
| MUAP 210V Applied Major Voice/Instrument II |  | 3 |
| MUEN Music Ensemble II (see adviser) |  | 1 |
| Year Total: | 14 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| MUTH 3613 Form and 20th Century Techniques ${ }^{2}$ | 3 |  |
| MUTH 2631 Aural Perception IV ${ }^{1}$ | 1 |  |
| MUHS 3703 Music in Western Civilization ${ }^{2}$ | 3 |  |
| MUHS 4703 Survey of String Literature | 3 |  |
| MUAC 2231 Piano Class for Music Major IV ${ }^{1}$ | 1 |  |
| MUAP 310V Applied Major Voice/Instrument III (4 hours) ${ }^{2}$ | 4 |  |
| MUEN Ensemble III (1 hour) | 1 |  |
| MUPD 3801 Conducting I ${ }^{2}$ | 1 |  |

Satisfies General Education Outcome 3.2:
MUSY 2003 Music in World Cultures or WLIT 1113 World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113)
Select one of the following not selected previously: ${ }^{2}$

MUTH 3603 18th Century Counterpoint or MUTH 3623 or MUTH 3723 Jazz Analysis or MUTH 477V Special Topics in Music Theory
MUHS 3713 Topics in Musicology ${ }^{2}$
MUAP 310V Applied Major Voice/Instrument III (3
hours) ${ }^{2}$
MUAP 3201 Applied Recital I ${ }^{2}$
MUEN Music Ensemble III (see adviser)
Year Total:

Units
Spring
${ }^{2}$ Meets 24 -hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule.
${ }^{3}$ The Social Sciences Elective that satisfies General Education Outcomes 3.3 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.

## Requirements for B.M. with Jazz Studies Concentration

## Requirements for a Major in Music leading to a Bachelor of Music Degree

In addition to the University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the University Core requirements.

Students must complete:

University Core \begin{tabular}{ll}
Requirements including: \& 35 <br>

\hline MLIT 1013 \& | Music and Society (Also counts as supporting |
| :--- |
| music course.) | <br>


\hline MUSY 2003 \& | Music in World Cultures |
| :--- |
| or WLIT 111 SVorld Literature: Beginnings to 1650 CE (ACTS |
| Equivalency = ENGL 2113) | <br>


\hline HIST 1113 \& | Institutions and Ideas of World Civilizations I |
| :--- |
| (ACTS Equivalency = HIST 1113) | <br>


\hline HIST 1123 \& | Institutions and Ideas of World Civilizations II |
| :--- |
| (ACTS Equivalency = HIST 1123) | <br>

\hline
\end{tabular}

| A World Language Course at the 1013 Elementary II Level. |  | 3 |
| :---: | :---: | :---: |
| Music Theory |  |  |
| MUTH 1603 | Music Theory I | 3 |
| MUTH 2603 | Music Theory II | 3 |
| Select two of the following (Jazz Concentration students must include MUTH 3723 in their selections.): ${ }^{1}$ |  |  |
| MUTH 3603 18th Century Counterpoint <br> or MUTH 3623 <br> or MUTH 372ßảzz Analysis <br> or MUTH 47TSpecial Topics in Music Theory |  |  |
| MUTH 3613 | Form and 20th Century Techniques | 3 |
| Aural Perception |  |  |
| MUTH 1621 | Aural Perception I | 1 |
| MUTH 1631 | Aural Perception II | 1 |
| MUTH 2621 | Aural Perception III | 1 |
| MUTH 2631 | Aural Perception IV | 1 |
| Music History |  |  |
| MUHS 3703 | Music in Western Civilization | 3 |
| MUHS 3713 | Topics in Musicology (Students completing the Jazz Concentration substitute MUHS 3503 Jazz History for MUHS 3713.) | 3 |
| MUHS 4253 | Capstone Project Seminar | 3 |
| Music Technology and Conducting |  |  |
| MUAC 2112 | Music Technology (Music Technology) | 2 |
| MUPD 3801 | Conducting I | 1 |

## Ensemble/Accompanying

Ensemble (See adviser for ensemble selections.) (Students with a Concentration in Piano Performance select 6 credits from MUEN 1541, MUEN 2541, MUEN 3541, MUEN 4541 and MUEN 4841 and one additional credit of Men's Chorus or Women's Chorus.)
Piano (Students completing the Piano Concentration substitute MUPD 4863 Piano Pedagogy.)

| MUAC 1221 | Piano Class for Music Majors I | 1 |
| :--- | :--- | :--- |
| MUAC 1231 | Piano Class for Music Majors II | 1 |
| MUAC 2221 | Piano Class for Music Majors III | 1 |

Vocal/Diction (Students in the Voice Concentration substitute
MUAC 1121 for this credit of MUEN 1411 or MUEN 1591.)
MUEN $1411 \quad$ Razorback Chorus I
or MUEN 1591 Treble Chorus I

Applied Lessons (Students in the Theory or Composition 16

Concentrations may include MUAP 130V, MUAP 230V,
MUAP 330 V , and MUAP 415 V to fulfill this category.) ${ }^{2}$
MUAP 110V Applied Major Voice/Instrument I
MUAP 210V Applied Major Voice/Instrument II
MUAP 310V Applied Major Voice/Instrument III
MUAP 3201 Applied Recital I
MUAP 410V Applied Major Voice/Instrument IV
MUAP 4201 Applied Recital II
And all of the specific requirements for the following concentration. 24
Total Hours
120

[^7]${ }^{2}$ All students must complete two semesters of MUAP 110 V with a grade of "A" or "B" and two semesters of MUAP 210 V with a grade of " A " or "B" before enrolling in MUAP 310V.

## Jazz Studies Concentration

Students completing the Jazz Studies Concentration will complete the following requirements. Students must also select a track that specifies their instrument.

| MUTH 3742 | Jazz Arranging | 2 |
| :--- | :--- | ---: |
| MUAC 2231 | Piano Class for Music Major IV | 1 |
| Applied Jazz |  | 1 |
| MUAC 3401 | Jazz Improvisation I | 1 |
| MUAC 3411 | Jazz Improvisation II | 1 |
| MUAC 4401 | Jazz Improvisation III | 1 |
| MUAC 4411 | Jazz Improvisation IV | 3 |
| Select 3 hours from the following: |  |  |
| MUHS 4253 | Capstone Project Seminar |  |
| MUPD 3883 | Jazz Pedagogy | $\mathbf{6}$ |
| MUTH 3733 | Functional Jazz Piano | $\mathbf{1 6}$ |
| Electives |  |  |
| Total Hours |  |  |

${ }^{1}$ Meets 40-hour advanced credit hour requirement.
${ }^{2}$ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule.

## Music B.M. with Jazz Studies Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program, and should consult their music adviser for an eight-semester plan that is specific to their vocal, instrumental or theoretical emphasis area in music. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency <br> = ENGL 1013) (Satisfies General Education <br> Outcome 1.1) <br> 1013 Elementary II world language course | 3 |  |
| MUTH 1003 Basic Musicianship (if required or as |  |  |
| elective) | 3 |  |
| MUAP 110V Applied Major Voice/Instrument I <br> MUEN 1411 Razorback Chorus I <br> or MUEN 1591 Treble Chorus I <br> MUEN Music Ensemble (see adviser) <br> ENGL 1023 Composition II (ACTS Equivalency <br> = ENGL 1023) (Satisfies General Education <br> Outcome 1.1) <br> MLIT 1013 Music and Society (Satisfies General <br> Education Outcomes 1.2 and 3.1) <br> MUTH 1603 Music Theory I | 3 |  |


| MUTH 1621 Aural Perception I |  |  |
| :---: | :---: | :---: |
| MUAC 1221 Piano Class for Music Majors I |  |  |
| MUAP 110V Applied Major Voice/Instrument I 3 |  |  |
| MUEN Music Ensemble I (see adviser) |  |  |
| Year Total: | 14 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| HIST 1113 Institutions and Ideas of World | 3 |  |
| Civilizations I (ACTS Equivalency = HIST 1113) (Satisfies General Education Outcome 3.3) |  |  |
| MUTH 2603 Music Theory II ${ }^{1}$ | 3 |  |
| MUTH 1631 Aural Perception II | 1 |  |
| MUAC 1231 Piano Class for Music Majors II | 1 |  |
| MUAC 2112 Music Technology | 2 |  |
| MUAP 210V Applied Major Voice/Instrument II ${ }^{1}$ | 3 |  |
| MUEN Music Ensemble II (see adviser) | 1 |  |
| HIST 1123 Institutions and Ideas of World |  | 3 |
| Civilizations II (ACTS Equivalency = HIST 1123) (Satisfies General Education Outcome 3.3) |  |  |
| Satisfies General Education Outcome 2.1: |  |  |
| MATH 1313 Quantitative Reasoning (ACTS |  | 3 |
| Equivalency = MATH 1113) |  |  |
| or MATH 1203 College Algebra (ACTS |  |  |
| Equivalency = MATH 1103) |  |  |
| or any MATH course numbered higher than MATH 1203 |  |  |
| MUTH 3723 Jazz Analysis ${ }^{2}$ 3 |  |  |
| MUTH 2621 Aural Perception III ${ }^{1}$ |  |  |
| MUAC 2221 Piano Class for Music Majors III ${ }^{1}$ |  |  |
| MUAP 210V Applied Major Voice/Instrument II ${ }^{1}$ ( 3 |  |  |
| MUEN Music Ensemble II (see adviser) 1 |  |  |
| Year Total: | 14 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| MUTH 3613 Form and 20th Century Techniques ${ }^{\text {1,2 }}$ | 3 |  |
| MUTH 2631 Aural Perception IV ${ }^{1}$ | 1 |  |
| MUHS 3503 Jazz History ${ }^{2}$ | 3 |  |
| MUAC 3401 Jazz Improvisation $\mathrm{I}^{2}$ | 1 |  |
| MUAC 2231 Piano Class for Music Major IV ${ }^{1}$ | 1 |  |
| MUAP 310V Applied Major Voice/Instrument III ${ }^{2}$ | 3 |  |
| MUEN Music Ensemble III (see adviser) ${ }^{2}$ | 1 |  |
| MUPD 3801 Conducting I | 1 |  |
| MUSY 2003 Music in World Cultures (Satisfies |  | 3 |
| General Education Outcomes 3.2 and 4.1) |  |  |
| Select one of the following: |  | 3 |
| MUTH 3603 18th Century Counterpoint or MUTH 3623 <br> or MUTH 477V Special Topics in Music Theory |  |  |
| MUAC 3411 Jazz Improvisation II |  | 1 |
| MUHS 3703 Music in Western Civilization |  | 3 |
| MUAP 310V Applied Major Voice/Instrument III |  | 2 |
| MUAP 3201 Applied Recital ${ }^{1,2}$ |  | 1 |

1 Students completing the Jazz Concentration must select MUTH 3723.
2 All students must complete two semesters of MUAP 110 V with a grade of "A" or "B" and two semesters of MUAP 210 V with a grade of "A" or "B" before enrolling in MUAP 310V.
3 The Social Sciences Elective that satisfies General Education
Outcomes 3.3 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.

## Requirements for B.M. with Piano Performance Concentration

3 University and College Requirements: In addition to the Fulbright College of Arts and Sciences Graduation

| MUEN Music Ensemble III (see adviser) |  |  |
| :---: | :---: | :---: |
| Electives |  | 2 |
| Year Total: | 14 | 16 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| U.S. History or Government State Minimum Core | 3 |  |
| Course (Satisfies General Education Outcome 4.2) |  |  |
| Science Lecture/Lab State Minimum Core Course (Satisfies General Education Outcome 3.4) | 4 |  |
| MUHS 4253 Capstone Project Seminar (Satisfies | 3 |  |
| General Education Outcome 6.1) |  |  |
| MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$ | 3 |  |
| MUEN Music Ensemble IV (see adviser) | 1 |  |
| MUTH 3742 Jazz Arranging ${ }^{2}$ | 2 |  |
| MUAC 4401 Jazz Improvisation III ${ }^{2}$ | 1 |  |

MUAP 4201 Applied Recital $I^{2}$ ..... 1
MUAC 4411 Jazz Improvisation IV ..... 1MUHS 4253 Capstone Project Seminar
MUPD 3883 Jazz Pedagogy
MUTH 3733 Functional Jazz Piano
Year Total: 17Total Units in Sequence:120
HIST) (Satisfies General Education Outcomes 3.3
and 5.1$)^{3}$
Science Lecture/Lab State Minimum Core Course

MUHS 4253 Capstone Project Seminar
MUPD 3883 Jazz Pedagogy
MUTH 3733 Functional Jazz Piano
Year Total: 17

Total Units in Sequence: 20 Requirements (see under Degree Completion Program Policy (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/)), the following course requirements must be met.

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| MLIT 1013 | Music and Society (Counts as supporting music course.) |  |
| :---: | :---: | :---: |
| MUSY 2003 or WLIT 1 | Music in World Cultures <br> 3Norld Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) |  |
| HIST 1113 | Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) |  |
| HIST 1123 | Institutions and Ideas of World Civilizations II (ACTS Equivalency $=$ HIST 1123) |  |
| World language up to the Elementary II level or higher (number of credit hours depending on placement) |  | 3-6 |
| Music Theory |  | 15-18 |
| MUTH 1003 | Basic Musicianship (if required based on placement test, see adviser) |  |
| MUTH 1603 | Music Theory I |  |
| MUTH 2603 | Music Theory II |  |
| MUTH 3613 | Form and 20th Century Techniques |  |
| Select two courses from the following: |  |  |
| MUTH 3603 or MUTH 3 or MUTH 3 or MUTH | 18th Century Counterpoint <br> 23 <br> 2ßazz Analysis <br> TSpecial Topics in Music Theory |  |
| Aural Perceptio |  | 4 |
| MUTH 1621 | Aural Perception I |  |
| MUTH 1631 | Aural Perception II |  |
| MUTH 2621 | Aural Perception III |  |
| MUTH 2631 | Aural Perception IV |  |
| Music History |  | 9 |
| MUHS 3703 | Music in Western Civilization |  |
| MUHS 3713 | Topics in Musicology |  |
| MUHS 4253 | Capstone Project Seminar |  |
| Music Technology and Conducting |  | 3 |
| MUAC 2112 | Music Technology |  |
| MUPD 3801 | Conducting I |  |
| Piano |  | 3 |
| MUPD 4863 | Piano Pedagogy |  |
| Applied Lessons ( 16 credits count as B.M. core and 12 are concentration credits) |  |  |
| MUAP 110V | Applied Major Voice/Instrument I (three credit hours each semester) |  |
| MUAP 210V | Applied Major Voice/Instrument II (three credit hours each semester) |  |
| MUAP 310V | Applied Major Voice/Instrument III (Four credit hours one semester and then three credit hours when taking MUAP 3201) |  |
| MUAP 410V | Applied Major Voice/Instrument IV (Four credit hours one semester and then three credit hours when taking MUAP 4201) |  |
| MUAP 3201 | Applied Recital I |  |
| MUAP 4201 | Applied Recital II |  |

## Ensemble/Accompanying

| MUEN 2541 | Accompanying II |  |
| :---: | :---: | :---: |
| MUEN 3541 | Accompanying III |  |
| MUEN 4541 | Accompanying IV |  |
| MUEN 1411 or MUEN 1591 | Razorback Chorus I (Any level) Treble Chorus I | 1 |
| Vocal/Diction |  | 1 |
| MUEN 1411 <br> or MUEN 15 | Razorback Chorus I (In addition to the semester taken as part of the Ensemble/Accompanying Category) <br> 597reble Chorus I |  |
| Additional Conce | entration Credits | 12 |
| Students must select a track that specifies their instrument. |  |  |
| MUTH 4322 | Score Reading |  |
| MUHS 4803 | Survey of Keyboard Literature I |  |
| MUHS 4813 | Survey of Keyboard Literature II |  |
| Applied Secondary MUAP or MUAC (two credit hours) |  |  |
| General Electives (two credit hours) |  |  |
| Tota |  | 120 |

## B.M. in Music with Piano Performance Concentration <br> Eight-Semester Degree Plan

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| World language at the Elementary II level or higher | 3 |  |
| MUAP 110V Applied Major Voice/Instrument I | 3 |  |
| 2 Credits of General Electives or MUTH 1003 Basic Musicianship (if required) | 2-3 |  |
| MUEN 1411 Razorback Chorus I or MUEN 1591 Treble Chorus I | 1 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ |  | 3 |
| MLIT 1013 Music and Society (as needed (Satisfies General Education Outcomes 1.2 and $3.1)^{1}$ |  | 3 |
| MUTH 1603 Music Theory I |  | 3 |
| MUTH 1621 Aural Perception I |  | 1 |
| MUAP 110V Applied Major Voice/Instrument I |  | 3 |
| MUEN 1411 Razorback Chorus I or MUEN 1591 Treble Chorus I |  | 1 |
| Year Total: | 12 | 14 |

Select 6 hours from the following:
MUEN 1541 Accompanying I
Second Year
Fall
HIST 1113 Institutions and Ideas of World
Civilizations I (ACTS Equivalency = HIST 1113)


HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123) (Satisfies General Education Outcomes 3.2, 3.3, and 4.1)
Satisfies General Education Outcome 2.1:
MATH 1313 Quantitative Reasoning (ACTS
Equivalency = MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency = MATH 1103)
or any MATH course numbered higher than MATH 1203
Select one of the following: ${ }^{2}$
MUTH 3603 18th Century Counterpoint or MUTH 3623
or MUTH 3723 Jazz Analysis
or MUTH 477V Special Topics in Music Theory
MUTH 2621 Aural Perception III ${ }^{1}$
MUAC 2221 Piano Class for Music Majors III
MUAP 210V Applied Major Voice/Instrument II
MUEN Ensemble II (see adviser)
Year Total:
Third Year
Fall

MUTH 3613 Form and 20th Century Techniques ${ }^{2}$
MUTH 2631 Aural Perception IV ${ }^{1}$
MUHS 3703 Music in Western Civilization ${ }^{2}$
MUAC 2231 Piano Class for Music Major IV ${ }^{1}$
MUHS 4703 Survey of String Literature (or U.S.
history course (University Core, U.S. History)) ${ }^{2}$
MUAP 310V Applied Major Voice/Instrument III ${ }^{2}$
MUEN Ensemble III (see adviser) ${ }^{2}$
MUEN 3501 Chamber Music III ${ }^{2}$
Satisfies General Education Outcomes 3.2 and 4.1:
MUSY 2003 Music in World Cultures
or WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113)
Science Lecture/Lab State Minimum Core
(Satisfies General Education Outcome 3.4)
MUHS 3713 Topics in Musicology ${ }^{2}$
MUAP 310V Applied Major Voice/Instrument III ${ }^{2}$
MUAP 3201 Applied Recital I ${ }^{2}$
MUEN Ensemble III (see adviser)
MUEN 3501 Chamber Music III ${ }^{2}$
Year Total:

| Fourth Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| U.S. History or Government Course State Minimum | 3 |  |

U.

Core (Satisfies General Education Outcome 4.2) or MUHS 4703 Survey of String Literature
Science Lecture/Lab State Minimum Core
4
(Satisfies General Education Outcome 3.4)
MUHS 4253 Capstone Project Seminar (Satisfies 3

MUPD 3801 Conducting $I^{2} 1$
MUAP 410V Applied Major Voice/Instrument IV ${ }^{2} 4$
MUEN Ensemble IV (see adviser) ${ }^{2}$ 1
MUEN 4501 Chamber Music IV² 1
Social Sciences Course (non-HIST) State Minimum 3
Core (Satisfies General Education Outcomes 3.3
and 5.1) ${ }^{3}$
Select one of the following: ${ }^{2}$
MUTH 3603 18th Century Counterpoint
or MUTH 3623
or MUTH 3723 Jazz Analysis
or MUTH 477V Special Topics in Music Theory
MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$
MUAP 4201 Applied Recital II ${ }^{2}$ 1
Elective (MUEN Music Ensemble IV 1
recommended; see adviser)
MUEN 4501 Chamber Music $\mathrm{IV}^{2} \quad 1$
$\begin{array}{lll}\text { Year Total: } & 17 & 12\end{array}$

| Total Units in Sequence: | 120 |
| :--- | :--- |

1 Meets 40-hour advanced credit hour requirement.
2 Meets 24-hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule.
3 The Social Sciences Elective that satisfies General Education Outcomes 3.3 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C

## Requirements for B.M. with Theory Concentration

Theory Concentration
University Core Requirements including: 35

MLIT 1013 Music and Society (Also counts as supporting music course.)
MUSY 2003 Music in World Cultures
or WLIT 111:World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113)
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113)
HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
A World Language Course at the 1013 Elementary II Level.

## Music Theory

MUTH 1003 Basic Musicianship (if required based on placement test, see adviser)

| MUTH 1603 | Music Theory I $^{1}$ | 3 |
| :--- | :--- | :--- |
| MUTH 2603 | Music Theory II |  |

Select two of the following: 6
MUTH 3603 18th Century Counterpoint
MUTH 3623
MUTH 3723 Jazz Analysis
MUTH 477V Special Topics in Music Theory
MUTH 3613 Form and 20th Century Techniques ${ }^{1}$
3
Aural Perception

| MUTH 1621 | Aural Perception I | 1 |
| :--- | :--- | ---: |
| MUTH 1631 | Aural Perception II | 1 |
| MUTH 2621 | Aural Perception III | 1 |
| MUTH 2631 | Aural Perception IV | 1 |
| Music History |  |  |
| MUHS 3703 | Music in Western Civilization | 3 |
| MUHS 3713 | Topics in Musicology | 3 |
| MUHS 4253 | Capstone Project Seminar | 3 |
| Music Technology and Conducting |  |  |
| MUAC 2112 | Music Technology | 2 |
| MUPD 3801 | Conducting I | 1 |
| Piano |  |  |
| MUAC 1221 | Piano Class for Music Majors I ${ }^{2}$ | 1 |
| MUAC 1231 | Piano Class for Music Majors II |  |

Applied Major-Level Courses ..... 16

MUAP 110V Applied Major Voice/Instrument I (2 credits per semester)
or MUAP 131Applied Skills Voice/Instrument I
MUAP 210V Applied Major Voice/Instrument II (2 credits per semester)
or MUAP 230Applied Skills Voice/Instrument II
MUAP 310V Applied Major Voice/Instrument III (2 credits per semester)
or MUAP 33IApplied Skills Voice/Instrument III
MUAP 410V Applied Major Voice/Instrument IV (2 credits per semester)
or MUAP 415Applied Skills Voice/Instrument IV
Ensemble
Ensemble (7 Hours; See adviser for ensemble selections) 7

## Voice/Diction

MUEN 1411 Razorback Chorus I 1
or MUEN 1591 Treble Chorus I
Additional Concentration Credits
Students must select a track that specifies their instrument.

## MUTH 4612 Orchestration

MUTH Upper-level Electives (6 Hours)
MUTH 498V Senior Thesis (3 Hours)
Music Electives (determined in consultation with adviser) (5 credits)
Electives (7 credits)
Total Hours

1 Students majoring in Theory must receive a grade of "B" or higher in MUTH 1603, MUTH 2603, and MUTH 3613.
2 Demonstration of piano skills appropriate for a composer; see Piano Proficiency Requirement above.

## Music B.M., Music Theory Concentration Eight Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements
of the program, and should consult with their music adviser about the requirements in their concentration's eight-semester plan. Music core requirement hours may vary, based on placement and previous credit granted. If a music core requirement is met without taking a class, students will substitute an elective for the core class.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 3 |  |
| 1013 Elementary II world language course | 3 |  |
| MUTH 1003 Basic Musicianship (if required or | 2 |  |
| Elective) | 1 |  |
| MUAP 110V Applied Major Voice/Instrument I |  |  |
| MUEN 1411 Razorback Chorus I | 1 |  |
| or MUEN 1591 Treble Chorus I |  | 3 |
| MUEN Music Ensemble I, see adviser) |  |  |
| ENGL 1023 Composition II (ACTS Equivalency |  | 3 |
| = ENGL 1023) (Satisfies General Education |  |  |
| Outcome 1.1) |  | 3 |
| MLIT 1013 Music and Society (Satisfies General |  | 1 |
| Education Outcomes 1.2 and 3.1) |  | 1 |
| MUTH 1603 Music Theory I (grade of B or better) |  | 2 |
| MUTH 1621 Aural Perception I |  | 1 |
| MUAC 1221 Piano Class for Music Majors I |  | 1 |
| MUAP 110V Applied Major Voice/Instrument I |  | 15 |
| MUEN Music Ensemble I (see adviser) |  | 15 |
| Elective |  |  |
| Year Total: |  |  |

Second Year Fall | Units |
| ---: |
| Spring |

HIST 1113 Institutions and Ideas of World ..... 3
Civilizations I (ACTS Equivalency $=$ HIST 1113)(Satisfies General Education Outcomes 3.2, 3.3,and 4.1)
Science Lecture/Lab State Minimum Core ..... 4
(Satisfies General Education Outcome 3.4)
MUTH 2603 Music Theory II (grade of B or better) ${ }^{1}$ ..... 3
MUTH 1631 Aural Perception II ..... 1
MUAC 1231 Piano Class for Music Majors II ..... 1
MUAC 2112 Music Technology ..... 2
MUAP 210V Applied Major Voice/Instrument II ..... 2
MUEN Music Ensemble II (see adviser) ..... 1

HIST 1123 Institutions and Ideas of World
Civilizations II (ACTS Equivalency = HIST 1123)
(Satisfies General Education Outcomes 3.2, 3.3, and 4.1)
Satisfies General Education Outcome 2.1:
MATH 1313 Quantitative Reasoning (ACTS
Equivalency = MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency $=$ MATH 1103)
or any MATH course numbered higher than MATH 1203

Select one of the following: ${ }^{2}$
MUTH 3603 18th Century Counterpoint
or MUTH 3623
or MUTH 3723 Jazz Analysis
or MUTH 477V Special Topics in Music Theory
MUTH 2621 Aural Perception III ${ }^{2}$
MUAC 2221 Piano Class for Music Majors III
MUAP 210V Applied Major Voice/Instrument II
MUEN Music Ensemble II (see adviser)
Year Total:
Third Year $\quad$ Fall

Units

MUTH 3613 Form and 20th Century Techniques
Fall
3
MUTH 2631 Aural Perception IV ${ }^{1}$
MUHS 3703 Music in Western Civilization ${ }^{2}$
MUAC 2231 Piano Class for Music Major IV (Concentration Credit)
MUAP 310V Applied Major Voice/Instrument III ${ }^{2}$


MUEN Music Ensemble III (see adviser) ${ }^{2}$
MUPD 3801 Conducting I ${ }^{2}$
MUTH Upper-level Elective (see adviser) ${ }^{2}$
Satisfies General Education Outcomes 3.2 and 4.1:
MUSY 2003 Music in World Cultures
or WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113)
MUTH Upper-level Elective ${ }^{2}$
Select one of the following:
MUTH 3603 18th Century Counterpoint
or MUTH 3623
or MUTH 3723 Jazz Analysis
or MUTH 477V Special Topics in Music Theory
MUHS 3713 Topics in Musicology ${ }^{2}$
MUAP 310V Applied Major Voice/Instrument III
MUEN Music Ensemble III (see adviser) ${ }^{2}$
Music Elective
Year Total:
Fourth Year Fall

Units
Spring

## Spring

Science Lecture/Lab State Minimum Core
(Satisfies General Education Outcome 3.4)
MUHS 4253 Capstone Project Seminar (Satisfies
General Education Outcome 6.1) ${ }^{2}$
MUTH Upper-Level Elective ${ }^{2}$
MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$
MUEN Music Ensemble IV, see adviser) ${ }^{2}$
Social Sciences State Minimum Course (non-HIST)
(Satisfies General Education Outcomes 3.3 and $5.1)^{3}$
MUTH 4612 Orchestration ${ }^{2}$
MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$3
Music Elective (MUEN Music Ensemble IV ..... 2
recommended) ${ }^{2}$
Elective ..... 3
Year Total: ..... 16 ..... 15
Total Units in Sequence: ..... 120
${ }^{1}$ Meets 40 -hour advanced credit hour requirement.
${ }^{2}$ Meets 24 -hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule.
${ }^{3}$ The Social Sciences Elective that satisfies General Education Outcomes 3.3 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103 C .

## Requirements for B.M. with Voice Performance Concentration

## Voice Performance Concentration

## University Core Requirements including:

MLIT 1013 Music and Society (Also counts as supporting music course.)
MUSY 2003 Music in World Cultures
or WLIT 111:World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113)
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113)
HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
A World Language Course at the 1013 Elementary II Level.

## Music Theory

MUTH 1003 Basic Musicianship (if required based on placement test,
see adviser)

| MUTH 1603 | Music Theory I | 3 |
| :--- | :--- | :--- |
| MUTH 2603 | Music Theory II | 3 |
| Sel |  |  |

Select two of the following: 6
MUTH 3603 18th Century Counterpoint or MUTH 3623 or MUTH 372ßazzz Analysis or MUTH 47TApecial Topics in Music Theory
MUTH 3613 Form and 20th Century Techniques 3
Aural Perception
MUTH 1621 Aural Perception I 1
MUTH 1631 Aural Perception II 1
$\begin{array}{lll}\text { MUTH } 2621 & \text { Aural Perception III } & 1 \\ \text { MUTH } 2631 & \text { Aural Perception IV } & 1\end{array}$
$\begin{array}{ll}\text { MUTH } 2631 & \text { Aural Perception IV } \\ \text { Music History } & 1\end{array}$
MUHS 3703 Music in Western Civilization 3
MUHS 3713 Topics in Musicology 3
MUHS 4253 Capstone Project Seminar 3
Music Technology and Conducting
MUAC 2112 Music Technology 2
MUPD 3801 Conducting I 1

| Piano |  |  |
| :---: | :---: | :---: |
| MUAC 1221 | Piano Class for Music Majors I | 1 |
| MUAC 1231 | Piano Class for Music Majors II | 1 |
| MUAC 2221 | Piano Class for Music Majors III | 1 |
| MUAC 2231 | Piano Class for Music Major IV (Concentration credit) | 1 |
| Applied Voice ( 16 credits count as B.M. core and 8 are concentration credits) |  | 24 |
| MUAP 110V | Applied Major Voice/Instrument I (3 credits for each of two semesters) |  |
| MUAP 210V | Applied Major Voice/Instrument II (3 credits for each of two semesters) |  |
| MUAP 310V | Applied Major Voice/Instrument III (3 credits one semester and then 2 credits when taking MUAP 3201) |  |
| MUAP 410V | Applied Major Voice/Instrument IV (3 credits one semester and then 2 credits when taking MUAP 4201) |  |
| MUAP 3201 | Applied Recital I |  |
| MUAP 4201 | Applied Recital II |  |
| Ensemble |  |  |
| Ensemble (7 hours; see adviser for ensemble selection) |  | 7 |
| Voice/Diction |  |  |
| MUAC 1121 | English and Italian Diction for Singers | 1 |
| MUAC 1141 | German and French Diction for Singers (Concentration credit) | 1 |
| Additional Concentration Credits |  |  |
| Students must select a track that specifies their instrument. |  |  |
| MUHS 4763 | Survey of Vocal Literature I | 3 |
| MUHS 4773 | Survey of Vocal Literature II | 3 |
| MUPD 477V | Special Topics in Pedagogy (Vocal Pedagogy) | 2 |
| 6 hours of World listed as part of | Language (in addition to the language requirement e Bachelor of Music core.) | 6 |

## Total Hours

## Music B.M., Voice Performance Concentration Eight Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (http:// catalog.uark.edu/undergraduatecatalog/academicregulations/ eightsemesterdegreecompletionpolicy/) for university requirements of the program, and should consult with their music adviser about the requirements in their concentration's eight-semester plan. Music core requirement hours may vary, based on placement and previous credit granted. If a music core requirement is met without taking a class, students will substitute an elective for the core class.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| Satisfies General Education Outcome 2.1: |  |  |

MATH 1313 Quantitative Reasoning (ACTS 3
Equivalency $=$ MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency = MATH 1103)
or any MATH course numbered higher than MATH 1203

1013 Elementary II world language course 3
MUTH 1003 Basic Musicianship (if required) 0-3
MUAP 110V Applied Major Voice/Instrument I 3
MUAC 1121 English and Italian Diction for Singers 1
MUEN Music Ensemble I (see adviser) 1

ENGL 1023 Composition II (ACTS Equivalency 3
= ENGL 1023) (Satisfies General Education
Outcome 1.1)
MLIT 1013 Music and Society (Satisfies General 3
Education Outcomes 1.2 and 3.1)
MUTH 1603 Music Theory I
MUTH 1621 Aural Perception I 1
MUAC 1221 Piano Class for Music Majors I 1
MUAP 110V Applied Major Voice/Instrument I 3
MUAC 1141 German and French Diction for 1
Singers
MUEN Music Ensemble I (see adviser) 1

| Second Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| HIST 1113 Institutions and Ideas of World | 3 |  |

MUTH 3603 18th Century Counterpoint or MUTH 3623
or MUTH 3723 Jazz Analysis
or MUTH 477V Special Topics in Music Theory
MUTH 2621 Aural Perception III ${ }^{1}$
MUAC 2221 Piano Class for Music Majors III
MUAP 210 V Applied Major Voice/Instument
MUEN Music Ensemble II (see adviser) 1
Year Total: 17

$$
0
$$

Units
MUTH 1631 Aural Perception II ..... 1
MUAC 1231 Piano Class for Music Majors II ..... 1
MUAC 2112 Music Technology ..... 2
MUAP 210V Applied Major Voice/Instrument II ..... 3
MUEN Music Ensemble II (see adviser) ..... 1World LanguageHIST 1123 Institutions and Ideas of WorldCivilizations II (ACTS Equivalency = HIST 1123)(Satisfies General Education Outcomes 3.2, 3.3,and 4.1)MUTH 3603 18th Century Counterpointor MUTH 3723 Jazz AnalysisYear Total:

| Third Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MUTH 3613 Form and 20th Century Techniques ${ }^{2}$ | 3 |  |
| MUTH 2631 Aural Perception IV ${ }^{1}$ | 1 |  |
| MUHS 3703 Music in Western Civilization ${ }^{2}$ | 3 |  |
| MUHS 4763 Survey of Vocal Literature I (or University Core, U.S. History) ${ }^{2}$ | 3 |  |
| MUAC 2231 Piano Class for Music Major IV | 1 |  |
| MUAP 310V Applied Major Voice/Instrument III ${ }^{2}$ | 3 |  |
| MUEN Ensemble III (see adviser) ${ }^{2}$ | 1 |  |
| MUPD 3801 Conducting ${ }^{2}$ | 1 |  |
| Satisfies General Education Outcome 4.1: |  |  |
| MUSY 2003 Music in World Cultures or WLIT 1113 World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) |  | 3 |
| Select one of the following not selected previously ${ }^{2}$ |  |  |
| MUTH 3603 18th Century Counterpoint <br> or MUTH 3623 <br> or MUTH 3723 Jazz Analysis <br> or MUTH 477V Special Topics in Music Theory |  |  |
| MUHS 3713 Topics in Musicology ${ }^{2}$ |  |  |
| MUHS 4773 Survey of Vocal Literature ॥ ${ }^{2}$ or MUPD 477V Special Topics in Pedagogy |  | 2-3 |
| MUAP 310V Applied Major Voice/Instrument III ${ }^{2}$ |  | 2 |
| MUAP 3201 Applied Recital I ${ }^{2}$ |  |  |
| MUEN Music Ensemble III (see adviser) ${ }^{2}$ |  |  |
| Year Total: | 16 | 16 |
| Fourth Year |  | nits |
|  | Fall | Spring |
| U.S. History or Government Course State Minimum Core, U.S. History) (Satisfies General Education Outcome 4.2) or MUHS 4763 Survey of Vocal Literature I |  |  |
| Science Lecture/Lab State Minimum Core <br> (Satisfies General Education Outcome 3.4) |  |  |
| MUHS 4253 Capstone Project Seminar (Satisfies General Education Outcome 6.1) ${ }^{2}$ |  |  |
| MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$ | 3 |  |
| MUEN Music Ensemble IV (see adviser) | 1 |  |
| Social Sciences Course State Minimum Core (Satisfies General Education Outcomes 3.3 and 5.1) ${ }^{3}$ |  |  |
| Science Lecture/Lab State Minimum Core (Satisfies General Education Outcome 3.4) |  |  |
| MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$ |  |  |
| MUAP 4201 Applied Recital II ${ }^{2}$ |  |  |
| MUPD 477V Special Topics in Pedagogy (Vocal Pedagogy) ${ }^{2}$ <br> or MUHS 4773 Survey of Vocal Literature II |  |  |
| Year Total: | 14 | 12 |

## Total Units in Sequence:

120
${ }^{2}$ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule.
${ }^{3}$ The Social Sciences Elective that satisfies General Education Outcomes 3.3 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.

## Woodwind, Brass, or Percussion Performance Concentration

University Core Requirements including:
MLIT 1013 Music and Society (Counts as supporting music course)
MUSY 2003 Music in World Cultures
or WLIT 1113Norld Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113)
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency $=$ HIST 1113)
HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
A World Language Course at the 1013 Elementary II Level.

## Music Theory

MUTH 1003 Basic Musicianship (if required based on placement test, see adviser)
MUTH 1603 Music Theory I 3

MUTH 2603 Music Theory II 3
Select two of the following: 6

| MUTH 3603 | 18th Century Counterpoint |
| :---: | :--- | :--- |
| MUTH 3623 |  |
| MUTH 477V | Special Topics in Music Theory |
| MUTH 3723 | Jazz Analysis |
| MUTH 3613 | Form and 20th Century Techniques |

Aural Perception

| MUTH 1621 | Aural Perception I | 1 |
| :--- | :--- | :--- |
| MUTH 1631 | Aural Perception II | 1 |
| MUTH 2621 | Aural Perception III | 1 |
| MUTH 2631 | Aural Perception IV | 1 |

Music History
MUHS 3703 Music in Western Civilization 3
MUHS 3713 Topics in Musicology 3
MUHS 4253 Capstone Project Seminar 3
Music Technology and Conducting
MUAC 2112 Music Technology 2
4 MUPD 3801 Conducting I 1

## Piano

MUAC 1221 Piano Class for Music Majors I 1
1 MUAC 1231 Piano Class for Music Majors II 1

2-3 MUAC 2221 Piano Class for Music Majors III 1
MUAC 2231 Piano Class for Music Major IV (Concentration 1 credit)
Applied Instrument (16 credits count as B.M. core and 8 are 24 concentration credits)

MUAP 110V Applied Major Voice/Instrument I (3 hours each of two semester)

[^8]| MUAP 210V | Applied Major Voice/Instrument II (3 hours each of two semester) |  |
| :---: | :---: | :---: |
| MUAP 310V | Applied Major Voice/Instrument III (3 hours one semester and 2 hours during the semester taking MUAP 3201) |  |
| MUAP 410V | Applied Major Voice/Instrument IV (3 hours one semester and 2 hours during the semester taking MUAP 3201) |  |
| MUAP 3201 | Applied Recital I |  |
| MUAP 4201 | Applied Recital II |  |
| Ensemble |  |  |
| Large Ensembles (See adviser for ensemble selections)) |  | 7 |
| Small Ensembles (See adviser for selections) (Concentration credits) |  | 4 |
| Voice/Diction |  |  |
| MUEN 1411 or MUEN 1591 | Razorback Chorus I Treble Chorus I | 1 |
| Additional Conc | entration Credits | 11 |
| Students must select a track that specifies their instrument. |  |  |
| MUTH 4612 | Orchestration |  |
| MUHS 4733 | Survey of Symphonic Literature |  |
| Electives (6 Hour | urs) |  |

## Total Hours

## Music B.M., Music Woodwind, Brass, Percussion Performance Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program, and should consult with their music adviser about the requirements in their concentration's eight-semester plan. Music core requirement hours may vary, based on placement and previous credit granted. If a music core requirement is met without taking a class, students will substitute an elective for the core class.

| First Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| 1013 Elementary II Level World Language Course | 3 |  |
| MUTH 1003 Basic Musicianship (if required, or Elective) | 3 |  |
| MUAP 110V Applied Major Voice/Instrument I | 3 |  |
| MUEN 1411 Razorback Chorus I or MUEN 1591 Treble Chorus I | 1 |  |
| MUEN Large Music Ensemble I (see adviser) | 1 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education |  | 3 |
| Outcome 1.1) |  |  |
| MLIT 1013 Music and Society (Satisfies General Education Outcomes 1.2 and 3.1) |  | 3 |
| MUTH 1603 Music Theory I |  | 3 |
| MUTH 1621 Aural Perception I |  | 1 |
| MUAC 1221 Piano Class for Music Majors I |  | 1 |
| MUAP 110V Applied Major Voice/Instrument I |  | 3 |


| MUEN Large Music Ensemble I (see adviser) | 1 |  |
| :--- | ---: | ---: |
| Year Total: | 14 | 15 |

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

HIST 1113 Institutions and Ideas of World
Civilizations I (ACTS Equivalency = HIST 1113)(Satisfies General Education Outcomes 3.2, 3.3,and 4.1)
MUTH 2603 Music Theory II ${ }^{1}$ ..... 3
MUTH 1631 Aural Perception II ..... 1
MUAC 1231 Piano Class for Music Majors II ..... 1
MUAC 2112 Music Technology ..... 2
MUAP 210V Applied Major Voice/Instrument II ..... 3
MUEN Large Music Ensemble II (see adviser) ..... 1
HIST 1123 Institutions and Ideas of WorldCivilizations II (ACTS Equivalency = HIST 1123)(Satisfies General Education Outcomes 3.2, 3.3,and 4.1)Satisfies General Education Outcome 2.1:MATH 1313 Quantitative Reasoning (ACTSEquivalency = MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency = MATH 1103)
or any MATH course numbered higher than
MATH 1203
Select one of the following: ${ }^{2}$
MUTH 3603 18th Century Counterpoint
or MUTH 3623
or MUTH 3723 Jazz Analysisor MUTH 477V Special Topics in Music Theory
MUTH 2621 Aural Perception III ${ }^{1}$
MUAC 2221 Piano Class for Music Majors III ..... 1MUAP 210V Applied Major Voice/Instrument IIMUEN Large Music Ensemble II (see adviser)
Year Total: ..... 14

Third Year | Units |
| ---: |
| Fall |

3

## Units

 SpringScience Lecture/Lab State Minimum Core ..... 4
(Satisfies General Education Outcome 3.4)MUTH 3613 Form and 20th Century Techniques ${ }^{2}$3
MUTH 2631 Aural Perception IV ${ }^{1}$ ..... 1
MUHS 3703 Music in Western Civilization ${ }^{2}$ ..... 3
MUAC 2231 Piano Class for Music Major IV ..... 1
MUAP 310V Applied Major Voice/Instrument III ${ }^{2}$ ..... 3
MUEN Ensemble III (see adviser) ${ }^{2}$ ..... 1
MUEN Small Music Ensemble III (see adviser) ${ }^{2}$ ..... 1

MUSY 2003 Music in World Cultures (Humanities
State Minimum Core (Satisfies General Education Outcomes 3.2 and 4.1)
or WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113)
MUHS 3713 Topics in Musicology ${ }^{2}$
MUHS 4733 Survey of Symphonic Literature ${ }^{2}$

| MUAP 310V Applied Major Voice/Instrument III ${ }^{2}$ |  |  |
| :---: | :---: | :---: |
| MUAP 3201 Applied Recital I ${ }^{2}$ |  |  |
| MUEN Large Music Ensemble III (see adviser) ${ }^{2}$ |  | 1 |
| MUEN Small Music Ensemble III ${ }^{2}$ |  |  |
| Year Total: | 17 | 14 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| Core (Satisfies General Education Outcome 4.2) |  |  |
| (Satisfies General Education Outcome 3.4) |  |  |
| General Education Outcome 6.1) ${ }^{2}$ |  |  |
| MUPD 3801 Conducting $1^{2}$ | 1 |  |
| MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$ | 3 |  |
| MUEN Large Music Ensemble IV (see adviser) ${ }^{2}$ | 1 |  |
| MUEN Small Music Ensemble IV (see adviser) ${ }^{2}$ | 1 |  |
| Social Sciences Course (non-HIST) State Minimum Core (Satisfies General Education Outcomes 3.3 and 5.1$)^{3}$ |  | 3 |
| Select one of the following: ${ }^{2}$ |  | 3 |
| MUTH 3603 18th Century Counterpoint <br> or MUTH 3623 <br> or MUTH 3723 Jazz Analysis <br> or MUTH 477V Special Topics in Music Theory |  |  |
| MUAP 410V Applied Major Voice/Instrument IV ${ }^{2}$ |  | 2 |
| MUAP 4201 Applied Recital II ${ }^{2}$ |  | 1 |
| MUTH 4612 Orchestration ${ }^{2}$ |  | 2 |
| Elective (MUEN Large Music Ensemble IV recommended for 1 of these hours) |  | 3 |
| MUEN Small Music Ensemble IV (see adviser) ${ }^{2}$ |  | 1 |
| Year Total: | 16 | 15 |
| Total Units in Sequence: |  | 120 |
| ${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273). <br> ${ }^{2}$ Meets 24 -hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations (p. 273) of this chapter. <br> ${ }^{3}$ The Social Sciences Elective that satisfies General Education Outcomes 3.3 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C. |  |  |
| Requirements for B.M. in Music Education with Choral Concentration <br> In addition to the state minimum core requirements (p. 81) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the state minimum core requirements. |  |  |
| Students must complete: |  |  |


| UNIV 1001 | University Perspectives | 0 |
| :---: | :---: | :---: |
| State Minimum Core |  |  |
| ENGL 1013 | $\begin{aligned} & \text { Composition I (ACTS Equivalency = ENGL } \\ & \text { 1013) } \end{aligned}$ | 3 |
| ENGL 1023 | $\begin{aligned} & \text { Composition II (ACTS Equivalency = ENGL } \\ & \text { 1023) } \end{aligned}$ | 3 |
| MATH 1313 | Quantitative Reasoning (ACTS Equivalency = MATH 1113) | 3 |
| or MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) |  |  |
| Science |  | 8 |
| MLIT 1013 | Music and Society (FNAR requirement) | 3 |
| MUSY 2003 | Music in World Cultures (Humanities Requirement) | 3 |
| or WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) |  |
| U.S. History |  | 3 |
| PSYC 2003 | General Psychology (ACTS Equivalency = PSYC 1103) | 3 |
| Social Sciences |  | 6 |
| Music Theory |  |  |
| MUTH 1603 | Music Theory I | 3 |
| MUTH 2603 | Music Theory II | 3 |
| MUTH 3613 | Form and 20th Century Techniques | 3 |
| Aural Perception |  |  |
| MUTH 1621 | Aural Perception I | 1 |
| MUTH 1631 | Aural Perception II | 1 |
| MUTH 2621 | Aural Perception III | 1 |
| MUTH 2631 | Aural Perception IV | 1 |
| Music History |  |  |
| MUHS 3703 | Music in Western Civilization | 3 |
| MUHS 3713 | Topics in Musicology | 3 |
| Conducting |  |  |
| MUPD 3801 | Conducting I | 1 |
| Applied Lessons | and Recital | 12 |

MUAP 110V $\begin{aligned} & \text { Applied Major Voice/Instrument I (taken twice for } 2 \\ & \text { credits each semester) }\end{aligned}$
MUAP 210V Applied Major Voice/Instrument II (taken twice for 2 credits each semester)
MUAP 310V Applied Major Voice/Instrument III (taken twice, one semester for 2 credits and then for 1 credit during the semester when also taking MUAP 3201 Applied Recital)
MUAP 3201 Applied Recital I
Ensembles (Select from Concentration Ensembles - see adviser) $\quad 7$ Music Education

| MUED 2012 | Introduction to Music Education | 2 |
| :--- | :--- | :--- |
| MUED 3021 | Supervised Practicum in Teaching Musical Skills | 1 |
| MUED 3833 | Music Education in the Elementary School | 3 |
| MUED 3911 | Classroom Instruments in Music Education | 1 |
| MUED 4112 | Pedagogy in Music Education | 2 |
| See concentration section for more music education requirements  <br> Curriculum and Instruction  <br> CIED 3023 Survey of Exceptionalities <br> CIED 3033 Classroom Learning Theory | 3 |  |


| Internship | 12 |
| :---: | :---: |
| MUED 4031 | Seminar for Professional Entry into Music Education |
| MUED 451V | Student Teaching: Elementary Music (typically 7 or 4 credits) |
| MUED 452V | Student Teaching: Secondary Music (typically 7 or 4 credits) |
| Music Education Requirements | Instrumental or Choral Concentration |
| Electives | 5 |
| Total Hours |  |
| Stage I: Complete an Evaluation for Internship |  |
| 1. Declare the major in music education in the Fulbright Advising Center. |  |
| 2. Obtain a " $C$ " or better in the following pre-education courses: CIED 3023 Survey of Exceptionalities, CIED 3033 Classroom Learning Theory (PSYC 2003 is a prerequisite). |  |
| 3. Obtain a C or better in all MUED courses. |  |
| 4. Obtain clearance through the Office of Teacher Education upon completion of the MUED 2012 Introduction to Music Education course. (Clearance includes passing scores on accepted basic skills assessments and cleared background checks). For admission requirements and application go to the Teacher Education website. |  |
| 5. Complete coursework with a cumulative GPA of 2.75 or higher. |  |
| 6. Obtain departmental clearance through successful GPA and coursework requirements, an advising interview with the Music Education Internship Coordinator, and any other requirements specified by the music education program. |  |

All requirements in Stage I must be met to be cleared for the internship. Please contact the Director of Field Placement and Licensure, Peabody Hall Room 109, College of Education and Health Professions for more information.

## Stage II: Internship

1. Complete the one-semester internship at an approved site.
2. Complete the PRAXIS Music Content Knowledge Exam (5113) and PRAXIS Principles of Learning and Teaching Exam (PLT 5623 or PLT 5624) if planning to apply for Arkansas Licensure (recommended, but not required for degree completion). See your adviser for completion dates.

Students should always consult the Licensure Officer, Peabody Hall Room 109, for any licensure requirement changes. Students will not be licensed to teach in Arkansas until they have met all requirements for licensure as set forth by the Division of Elementary \& Secondary Education - Arkansas Department of Education.

Licensure or certification in another state is facilitated by first receiving a license in Arkansas. An application must be made directly to that state's department of education by the student. In many instances the applications are referred to the Licensure Officer, Peabody Hall Room 109.

## Choral Concentration Courses

Students must select a track that specifies their instrument.
World Language Course at 1013 Elementary Level

## Conducting

| MUPD 3861 | Conducting II: Vocal Music | 1 |
| :---: | :---: | :---: |
| Piano/Secondary Instrument |  |  |
| MUAC 1221 Pian 1001 Applied Se | no Class for Music Majors I (Voice Track) or MUAP condary-Level Lessons in Voice (Piano Track) | 1 |
| MUAC 1231 Pian 1001 Applied Se | no Class for Music Majors I (Voice Track) or MUAP condary-Level Lessons in Voice (Piano Track) | 1 |
| MUAC 2221 Pian 2001 Applied Se | no Class for Music Majors I (Voice Track) or MUAP condary-Level Lessons in Voice (Piano Track) | 1 |
| MUAC 2231 Pian 2001 Applied Sec | no Class for Music Majors I (Voice Track) or MUAP condary-Level Lessons in Voice (Piano Track) | 1 |
| Chorus/Diction |  |  |
| MUAC 1121 | English and Italian Diction for Singers | 1 |
| MUAC 1141 | German and French Diction for Singers | 1 |
| Music Education (Concentration Courses) |  |  |
| MUED 4283 | Teaching Vocal Music | 3 |
| Choose Two Credits From: |  | 2 |
| MUAC 1321 | Class Instruction in Guitar |  |
| MUED 1371 | Teaching the Beginning Percussionist |  |
| MUED 2532 | Class Instruction in Woodwind Instruments |  |
| MUED 2542 | Class Instruction in Brass Instruments |  |
| MUED 2552 | Class Instruction in Orchestral String Instruments |  |
| Choose 3 Credits From: |  | 3 |
| MUAP/MUAC/MUED Elective(s) |  |  |
| General Elective |  | 1 |
| Tota |  |  |

## Music Education B.M. with Choral Concentration Eight Semester Degree Program

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| Satisfies General Education Outcome 2.1: | 3 |  |
| MATH 1313 Quantitative Reasoning (ACTS |  |  |
| Equivalency = MATH 1113) |  |  |
| or MATH 1203 College Algebra (ACTS | 3 |  |
| Equivalency = MATH 1103) | 3 |  |
| World Language Course 1013 Elementary II Level <br> MUTH 1003 Basic Musicianship (if required, or | 1 |  |
| else an elective) | 2 |  |
| MUAC 1121 English and Italian Diction for Singers | 1 |  |
| MUAP 110V Applied Major Voice/Instrument I |  | 3 |
| MUEN Music Ensemble I (see adviser) |  |  |
| ENGL 1023 Composition II (ACTS Equivalency <br> = ENGL 1023) (Satisfies General Education |  | 3 |
| Outcome 1.1) |  |  |
| MLIT 1013 Music and Society (Satisfies General |  | 3 |
| Education Outcomes 1.2 and 3.1) |  | 1 |
| MUTH 1603 Music Theory I |  | 1 |
| MUTH 1621 Aural Perception I |  |  |
| MUAC 1221 Piano Class for Music Majors I |  |  |

MUAC 1141 German and French Diction for
Singers
MUED 2012 Introduction to Music Education
MUAP 110V Applied Major Voice/Instrument I
MUEN Music Ensemble I (see adviser)
Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| State Minimum Core Social Sciences requirement <br> (Satisfies General Education Outcome 3.3) | 3 |  |
| PSYC 2003 General Psychology (ACTS | 3 |  |
| Equivalency = PSYC 1103) (Satisfies General |  |  |
| Education Outcome 3.3) | 3 |  |
| MUTH 2603 Music Theory II | 1 |  |
| MUTH 1631 Aural Perception II | 1 |  |
| MUAC 1231 Piano Class for Music Majors II | 2 |  |

$\begin{array}{ll}\text { MUAP 210V Applied Major Voice/Instrument II } & 2 \\ \text { MUEN Music Ensemble II (see adviser) } & 1\end{array}$
State Minimum Core Science Lecture with
Corequisite Lab requirement (Satisfies General Education Outcome 3.4)
MUTH 3613 Form and 20th Century Techniques
MUTH 2621 Aural Perception III
MUAC 2221 Piano Class for Music Majors III
MUED 3833 Music Education in the Elementary School
MUAP 210V Applied Major Voice/Instrument II
MUEN Music Ensemble II (see adviser)
Year Total:
16

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

State Minimum Core Social Sciences requirement 3 (Satisfies General Education Outcomes 3.3 and 5.1) ${ }^{1}$

State Minimum Core U.S. History or Government requirement (Satisfies General Education Outcome 4.2)

MUTH 2631 Aural Perception IV
MUAC 2231 Piano Class for Music Major IV
MUHS 3703 Music in Western Civilization
MUPD 3801 Conducting I
1
MUAC/MUAP/MUED Elective (1 hour)

## Units

Spring

MUAC 1321 Class Instruction in Guitar
MUED 1371 Teaching the Beginning
Percussionist
MUED 2532 Class Instruction in Woodwind Instruments
MUED 2542 Class Instruction in Brass Instruments
MUED 2552 Class Instruction in Orchestral String Instruments

MUED 3911 Classroom Instruments in Music 1 Education
MUAP 310V Applied Major Voice/Instrument III 2
MUEN Music Ensemble III (see adviser) 1
Satisfies General Education Outcomes 3.2 and 4.1:
MUSY 2003 Music in World Cultures
or WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113)
MUHS 3713 Topics in Musicology 3
MUPD 3861 Conducting II: Vocal Music 1
MUAC/MUAP/MUED Elective (2 hours) 2
MUED 3021 Supervised Practicum in Teaching 1
Musical Skills
MUAP 310V Applied Major Voice/Instrument III 1
MUAP 3201 Applied Recital I 1
MUEN Music Ensemble III (see adviser) 1
CIED 3023 Survey of Exceptionalities 3
Year Total: 17

| Fourth Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| State Minimum Core Science Lecture with | 4 |  |

Corequisite Lab requirement (Satisfies General
Education Outcome 3.4)
MUED 4112 Pedagogy in Music Education 2
MUED 4283 Teaching Vocal Music 3
MUEN Music Ensemble IV (see adviser) 1
Electives 3
CIED 3033 Classroom Learning Theory 3
MUED 4031 Seminar for Professional Entry into 1
Music Education (Satisfies General Education
Outcome 6.1)
Student Teaching 11
MUED 451V Student Teaching: Elementary
Music
MUED 452V Student Teaching: Secondary
Music
Year Total: $\quad 16$

| Total Units in Sequence: | 125 |
| :--- | :--- |

${ }^{1}$ The Social Sciences Elective courses that satisfy General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H,HUMN 2114H, INST 2013, INST 2813, INST 2813H,PLSC 2813, or PLSC 2813H.

## Requirements for B.M. in Music Education with Instrumental Concentration

In addition to the state minimum core requirements (p. 81) and the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), the following course requirements must be met. Bolded courses from the list below may be applied to portions of the state minimum core requirements.

Students must complete:

| UNIV 1001 | University Perspectives | 0 |
| :---: | :---: | :---: |
| State Minimum Core |  |  |
| ENGL 1013 | $\begin{aligned} & \text { Composition I (ACTS Equivalency = ENGL } \\ & \text { 1013) } \end{aligned}$ | 3 |
| ENGL 1023 | $\begin{aligned} & \text { Composition II (ACTS Equivalency = ENGL } \\ & \text { 1023) } \end{aligned}$ | 3 |
| MATH 1313 | Quantitative Reasoning (ACTS Equivalency = MATH 1113) | 3 |
| or MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) |  |  |
| Science |  | 8 |
| MLIT 1013 | Music and Society (FNAR requirement) | 3 |
| MUSY 2003 | Music in World Cultures (Humanities Requirement) | 3 |
| or WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) |  |
| U.S. History |  | 3 |
| PSYC 2003 | General Psychology (ACTS Equivalency = PSYC 1103) | 3 |
| Social Sciences |  | 6 |
| Music Theory |  |  |
| MUTH 1603 | Music Theory I | 3 |
| MUTH 2603 | Music Theory II | 3 |
| MUTH 3613 | Form and 20th Century Techniques | 3 |
| Aural Perception |  |  |
| MUTH 1621 | Aural Perception I | 1 |
| MUTH 1631 | Aural Perception II | 1 |
| MUTH 2621 | Aural Perception III | 1 |
| MUTH 2631 | Aural Perception IV | 1 |
| Music History |  |  |
| MUHS 3703 | Music in Western Civilization | 3 |
| MUHS 3713 | Topics in Musicology | 3 |
| Conducting |  |  |
| MUPD 3801 | Conducting I | 1 |
| Applied Lessons and Recital |  | 12 |
| MUAP 110V | Applied Major Voice/Instrument I (taken twice for 2 credits each semester) |  |
| MUAP 210 V | Applied Major Voice/Instrument II (taken twice for 2 credits each semester) |  |
| MUAP 310V | Applied Major Voice/Instrument III (taken twice, one semester for 2 credits and then for 1 credit during the semester when also taking MUAP 3201 Applied Recital) |  |
| MUAP 3201 | Applied Recital I |  |
| Ensembles (Select from Concentration Ensembles - see adviser) 7 |  |  |
| Music Education |  |  |
| MUED 2012 | Introduction to Music Education | 2 |
| MUED 3021 | Supervised Practicum in Teaching Musical Skills | 1 |
| MUED 3833 | Music Education in the Elementary School | 3 |
| MUED 3911 | Classroom Instruments in Music Education | 1 |
| MUED 4112 | Pedagogy in Music Education | 2 |
| See concentration section for more music education requirements |  |  |
| Curriculum and Instruction |  |  |
| CIED 3023 | Survey of Exceptionalities | 3 |
| CIED 3033 | Classroom Learning Theory | 3 |


| Internship |  |
| :---: | :--- |
| MUED 4031 | Seminar for Professional Entry into Music |
| MUED 451V | Education |
|  | Student Teaching: Elementary Music (typically 7 or <br> 4 credits) |
| MUED 452V | Student Teaching: Secondary Music (typically 7 or <br> 4 credits) |

## Requirements

Electives 5
Total Hours

## Stage I: Complete an Evaluation for Internship

1. Declare the major in music education in the Fulbright Advising Center.
2. Obtain a " $C$ " or better in the following pre-education courses: CIED 3023 Survey of Exceptionalities, CIED 3033 Classroom Learning Theory (PSYC 2003 is a prerequisite).
3. Obtain a C or better in all MUED courses.
4. Obtain clearance through the Office of Teacher Education upon completion of the MUED 2012 Introduction to Music Education course. (Clearance includes passing scores on accepted basic skills assessments and cleared background checks). For admission requirements and application go to the Teacher Education website.
5. Complete coursework with a cumulative GPA of 2.75 or higher.
6. Obtain departmental clearance through successful GPA and coursework requirements, an advising interview with the Music Education Internship Coordinator, and any other requirements specified by the music education program.

All requirements in Stage I must be met to be cleared for the internship. Please contact the Director of Field Placement and Licensure, Peabody Hall Room 109, College of Education and Health Professions for more information.

## Stage II: Internship

1. Complete the one-semester internship at an approved site.
2. Complete the PRAXIS Music Content Knowledge Exam (5113) and PRAXIS Principles of Learning and Teaching Exam (PLT 5623 or PLT 5624) if planning to apply for Arkansas Licensure (recommended, but not required for degree completion). See your adviser for completion dates.

Students should always consult the Licensure Officer, Peabody Hall Room 109, for any licensure requirement changes. Students will not be licensed to teach in Arkansas until they have met all requirements for licensure as set forth by the Division of Elementary \& Secondary Education - Arkansas Department of Education.

Licensure or certification in another state is facilitated by first receiving a license in Arkansas. An application must be made directly to that state's department of education by the student. In many instances the applications are referred to the Licensure Officer, Peabody Hall Room 109.

## Instrumental Concentration Courses

Students must select a track that specifies their instrument.
World Language Course at 1003 Elementary Level

## Conducting



| MUAP 310V Applied Major Voice/Instrument III |  | 1 |
| :--- | ---: | ---: |
| MUAP 3201 Applied Recital I |  | 1 |
| MUEN Music Ensemble III (see adviser) |  | 1 |
| CIED 3023 Survey of Exceptionalities | 3 |  |
| Year Total: |  | 16 |
|  | Fall | Units |
| Spring |  |  |

${ }^{1}$ The Social Sciences Elective courses that satisfy General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H,HUMN 2114 H , INST 2013, INST 2813, INST 2813H,PLSC 2813, or PLSC 2813H.

## Requirements for a Minor in Music

A minimum of 18 semester hours in music courses to include MLIT 1013, MUTH 1603, MUTH 2603, and either MUHS 3703 or MUHS 3713; other courses to be determined by the student in consultation with a music faculty adviser. The student must notify the Department of Music of his/ her intent to minor.

For requirements for advanced degrees in music, see the Graduate School Catalog.

## Requirements for a Certificate of Proficiency in Music Industry

This program is designed to prepare students from a large variety of backgrounds for careers in many aspects of the music industry. Because the music industry is a vast, diverse, and global business, this certificate includes a wide range of courses and multiple options for capstone projects appealing to music creators, entrepreneurs, and those looking to work in major music industry firms. The certificate format allows broad access to this program by students in any major and can additionally serve the working professional music community in Arkansas by providing
music industry training. Specifically, this certificate intends to prepare students for careers that include but are not limited to:

- Major and independent labels: artist development, promotion, and marketing,
- Music law: copyright, intellectual property rights publishing, and music clearing
- Music technology: recording, production, gaming, and audio software
- Music management: booking, live production, branding, digital promotion

This program is designed to prepare students from a large variety of backgrounds for careers in many aspects of the music industry. Because the music industry is a vast, diverse, and global business, this certificate includes a wide range of courses and multiple options for capstone projects appealing to music creators, entrepreneurs, and those looking to work in major music industry firms. The certificate format allows broad access to this program by students in any major and can additionally serve the working professional music community in Arkansas by providing music industry training. Specifically, this certificate intends to prepare students for careers that include but are not limited to:

- Major and Independent Labels: Artist Development, Promotion, Marketing,
- Music Law: Copyright, IP, Publishing, Music Clearing
- Music Technology: Recording, Production, Gaming, Audio Software
- Music Management: Booking, Live Production, Branding, Digital Promotion


## Certificate Requirements

| MLIT 1333 | Popular Music | 3 |
| :--- | :--- | ---: |
| MUIN 3213 | 21st Century Music Industry | 3 |
| MUIN 4103 | Legal Aspects of the Music Industry | 3 |
| MUIN 3313 | The Art of Music Production | 3 |
| Total Hours |  | $\mathbf{1 2}$ |

## Requirements for Departmental Honors in Music

The Departmental Honors Program in Music provides upper-division undergraduate students an opportunity to participate formally in scholarly, creative, or performance music activities. Honors candidates carry out independent study, research and performance under the guidance of the music faculty and participate in special honors classes and seminars. They must take 12 hours (which may include 6 hours of thesis) in Honors Studies.

Each honors student will be required to select an honors committee. The committee will be comprised of the honors thesis adviser (a Music Department faculty member and major teacher in the area of the honors project), a second faculty member from the Music Department chosen by the student, a member from outside the music department chosen by the student, and a member of the Honors Council appointed by the Honors College. This committee is responsible for hearing and seeing the work of the student in the area of the honors project and will administer the oral examination to the candidate at the end of the last semester of the student's work. The committee then recommends to the Honors Council whether or not the student receives honors in music. Outstanding student achievement will be recognized by awarding the distinction "Music Scholar Cum Laude" at graduation. The award of higher degree distinctions is
recommended only in truly exceptional cases and is based upon the whole of the candidate's program of honors studies.

The student may elect to do the honors project in one of six areas: performance, music history and literature, theory, composition, music education, or ethnomusicology. Honors work may be done in an area other than the student's major area that is, a student majoring in voice performance may elect to do honors work in music history, theory, or composition, etc.

If a student wishes to devise his or her own honors project in consultation with a supervising professor and with the permission of the department chair, he or she may be granted honors. If a student wishes to combine work in more than one field and if the committee approves, he or she may be granted honors in more than one area, although the designation on the diploma will read "in music."

The requirements for work in each area are as follows:

## 1. Performance

a. 2 semesters of MUAP 310VH or MUAP 410 VH , with concurrent registration in MUAP 3201H and MUAP 4201H
b. Other music department honors courses are recommended, see honors adviser. (A program file representing the student's range of performance activities during the junior and senior years will be maintained for the department file and for the Honors Council. Compact discs of the junior and senior recitals will be filed with the Honors Office.)
2. History and Literature
a. Junior year: MUHS 5973 Seminar in Bibliography and Methods of Research
b. Senior year: MUSC 490VH Honors Essay
3. Theory
a. Junior year: MUHS 5973 Seminar in Bibliography and Methods of Research
b. Senior year: MUSC 490VH Honors Essay
4. Composition
a. At least six hours of MUTH 364 VH Honors Composition III or MUTH 464VH Honors Composition IV
b. A full program of original compositions or equivalent.
5. Music Education
a. Junior year: MUED 5513 Seminar: Resources in Music Education
b. Senior year: MUSC 490VH Honors Essay
6. Ethnomusicology
a. Junior year: MUHS 5973 Seminar in Bibliography and Methods of Research
b. Senior year: MUSC 490VH Honors Essay

## Faculty

Abrahams, Daniel, Ph.D. (Oakland University), M.M. (University of Nebraska at Omaha), B.M.E. (Temple University), Associate Professor, 2016, 2022.
Allen, Jeremy L., D.M.A. (Cleveland Institute of Music), M.M. (University of Kentucky), B.S. (John Brown University), Instructor, 2018, 2021.
Armstrong, asher, D.M.A. (University of Toronto), Teaching Assistant Professor, 2020.
Baranello, Micaela, Ph.D., M.A. (Princeton University), B.A. (Swarthmore College), Assistant Professor, 2017.
Becqué, Helen, (Hochschule München für Musik und Theater), Instructor, 2020.

Bentley, Christa, Ph.D., M.A. (University of North Carolina at Chapel Hill), B.A., (Texas Christian University), Assistant Professor, 2022.
Burson, Claudia, , Lecturer, 1998, 2012.
Caldwell, Stephen E., D.M.A. (Rutgers State University-New Brunswick), M.M. (Temple University), B.M.E. (University of Northern Colorado), Associate Professor, 2012, 2019.
Cholthitchanta, Nophachai, D.M.A. (University of Missouri-Kansas City), M.M. (University of Northern Colorado), B.M. (Chulalongkorn University, Thailand), Associate Professor, 2001, 2009.
Clare, Lauren N., M.M. (Oklahoma City University), Instructor, 2021.
Collett, Jesse, M.M. (University of Arkansas), Lecturer, 2021.
Delaplain, Theresa R., D.M.A. (University of Cincinnati), M.M. (Bowling
Green State University), B.M. (University of Michigan), Teaching Assistant Professor, 1997, 2019.
Eskitch, Paolo, M.M. (Brooklyn College), Lecturer, 2012.
Gosman, Alan R., Ph.D. (Harvard University), Associate Professor, 2014.
Green-Turner, Amanda Lenora, D.M.A. (University of Michigan), Teaching Assistant Professor, 2021.
Halbert, Katey, D.M.A. (University of lowa), M.M. (Ohio State University), B.M. (Bowling Green State University), Visiting Assistant Professor, 2021.

Hammel, Alice, D.M.A. (Shenandoah University), M.M. (Florida State University), B.M. (Shenandoah University), Instructor, 2016.
Hertzog, Jacob, Ph.D. (University of Arkansas), M.M. (Manhattan School of Music), B.M. (Berklee College of Music), Assistant Professor, 2022.
Herzog, Jacob, M.M. (Manhattan School of Music), B.M. (Berklee College of Music), Instructor, 2016.
Hunter, Justin R., Ph.D. (University of Hawai'i at M\#noa), M.M., B.A. (University of Arkansas), Instructor, 2017.
Jones, Chase, M.M., B.M. (University of Arkansas), Instructor, 2022.
Jones, Garret, B.M. (University of Arkansas), Lecturer, 2022.
Kahng, Er-Gene, D.M. (Northwestern University), A.D., M.M. (Yale University), B.A. (University of California-Los Angeles), Associate Professor, 2007, 2012.
Kashiwagi, Tomoko, D.M.A. (University of Texas at Austin), M.M., B.M. (Indiana University), Associate Professor, 2012, 2022.
Kim, Hyun, Ph.D., D.M.A. (University of Colorado), M.M. (University of Cincinnati), M.M. (Sung-Shin Women's University), B.M. (Chung-Ang University), Visiting Assistant Professor, 2018.
Knighten, Chris, D.M.A., M.M. (University of Colorado), B.M. (Baylor University), Associate Professor, 2009.
Knighten, Janet Whitman, M.M., B.M. (East Carolina University), Assistant Professor, 2009.
Lau, Wing, Ph.D. University of Oregon), M.M. (Indiana University), Instructor, 2016.
Lorenzo, Benjamin, D.M.A., M.M. (University of Texas), B.M. (Florida International University), Assistant Professor, 2015.
MacDuff, Timothy, D.M.A. (University of Maryland), Lecturer, 2021.
Mains, Ronda M., D.M.A. (University of Oregon), M.A., B.M. (Boise State University), Professor, 1987, 2002.
Malis, David H., M.M. (University of Cincinnati), B.M. (Mars Hill College), Associate Professor, 2002, 2013.
Mertens, Nathan, D.M.A., M.M. (University of Texas at Austin), B.M., B.A. (Hastings College), Teaching Assistant Professor, 2022.
Mihalka, Matthew W., Ph.D. (University of Minnesota), M.A. (University of Minnesota-Duluth), M.A. (University of Minnesota-Twin Cities), Instructor, 2011.

Misenhelter, Dale D., Ph.D. (Florida State University), M.A. (University of Wyoming), B.M. (Florida State University), Professor, 2002, 2014.
Mixdorf, Cory, D.M.A., M.M. (Indiana University), B.A. (University of Northern lowa), Assistant Professor, 2013.
Montgomery, Mike, D.M.A. (University of Miami), M.M., B.M. (University of Southern Mississippi), Lecturer, 2017.

Montgomery, Scott, D.M.A. (University of Illinois), Lecturer, 2022. Montgomery, Scott, D.M.A. (University of Illinois), Lecturer, 2022. Mueller, Robert K., D.M.A. (University of Cincinnati), M.M. (Bowling Green State University), B.A. (Northern Michigan University), Professor, 1988, 2004.
Murdock, Jeffrey A., Ph.D. (University of Memphis), M.M., B.M. (University of Southern Mississippi), Assistant Professor, 2015.
Na, Dominic K., D.M.A. (University of North Texas), A.D. (Southern Methodist University), Instructor, 2016.
Ortega, Catalina, M.M. (University of Arkansas), B.A. (Pontificia Universidad Javeriana, Colombia), Instructor, 2014.
Panayotova, Miroslava Saifur, Ph.D. (University of Arizona), Instructor, 2014.

Park, Joon, Ph.D. (University of Oregon), M.A., B.M. (Eastman School of Music), Assistant Professor, 2016.
Park, Moon-Sook, D.M.A. (University of Cincinnati), M.M. (Staatliche Hochschule fur Musik in Freiburg), B.M. (University of Seoul National), Associate Professor, 2012, 2017.
Perkins, Asher, M.M. (University of Arkansas), Lecturer, 2020.
Pierce, Benjamin J., D.M.A., M.M. (University of Michigan-Ann Arbor), B.M. (Bowling Green State University), Professor, 2003, 2015.

Radan, Nikola, M.M., B.M. (University of Belgrade), Lecturer, 2018.
Radan, Nikola, M.M., B.M. (University of Belgrade), Instructor, 2018.
Ragsdale, Chal, M.M. (East Carolina University), B.S. (Auburn
University), University Professor, 1975, 2013.
Riley, Nastassja, M.M. (Florida State University), Lecturer, 2014.
Rulli, Richard J., D.M.A. (University of Wisconsin-Madison), M.M. (Ithaca College), B.M. (University of Northern Colorado), Associate Professor, 2003, 2009.
Runkles, Henry S., M.M. (University of Arkansas), Instructor, 2002.
Salonen, Rick, Ed.D., M.M. (University of Arkansas), B.M. (Central Michigan University), Instructor, 2008.
Singer, Pecos, D.M.A. (University of Maryland), M.M. (San Francisco
Conservatory), B.M. (University of Oregon), Instructor, .
Stinson, Jonathan, D.M.A. (University of Cincinnati), Teaching Assistant Professor, 2020.
Summers, Jeffrey P., D.M.A. (University of Miami), Instructor, 2020.
Troiano, Eric, D.M.A., M.M. (Michigan State University), B.M. (Ithaca College), Teaching Assistant Professor, 2016, 2021.
Uribe, Lia, D.M.A. (University of Kansas), M.M. (University of Arkansas), B.M. (Universidad Nacional de Colombia, Bogotá), Associate Professor, 2013, 2018.
Valencia, Fernando, M.M. (University of Arkansas), B.M. (Universidad Javeriana), Instructor, 2014.
Vansteenburg, Jessica, Ph.D. (University of Colorado), D.M.A.
(University of Nebraska), M.M. (Ohio University), B.A. (Luther College), Visiting Instructor, 2022.
Warren, W. Dale, M.M. (University of Kentucky), B.S. (Austin Peay State University), Professor, 1991.
Watanabe, Susumu, D.M.A. (University of Nebraska-Lincoln), M.F.A.
(City University of New York), B.M. (Berklee College of Music), Lecturer, 2021.

## Applied Music (Class) Courses

MUAC 1121. English and Italian Diction for Singers. 1 Hour.
Training in proper pronunciation and inflections of English and Italian as applied to singers. Two meetings per week. (Typically offered: Fall)

MUAC 1141. German and French Diction for Singers. 1 Hour.
Training in proper pronunciation and inflection of German and French as applied to singing. Two meetings per week. Prerequisite: MUAC 1121. (Typically offered: Spring)

MUAC 1161. Class Instruction in Piano for Non-Music Majors. 1 Hour.
Beginning instruction in piano. Does not fulfill the class piano requirement for music majors. (Typically offered: Fall, Spring and Summer)
MUAC 1221. Piano Class for Music Majors I. 1 Hour.
Training in functional piano skills for music majors. Two meetings per week. Prerequisite: Music major and MUTH 1003. (Typically offered: Spring)

## MUAC 1231. Piano Class for Music Majors II. 1 Hour.

A continuation of MUAC 1221. Two meetings per week. Upon successful completion of MUAC 1231 with a grade of B or better, credit for MUAC 1221 will also be given. Prerequisite: MUAC 1221 and a music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music. (Typically offered: Fall)

## MUAC 1321. Class Instruction in Guitar. 1 Hour.

Beginning class instruction in guitar. Students must provide their own instruments. (Typically offered: Fall and Spring)
MUAC 1381. Class Instruction in Voice. 1 Hour.
Fundamentals of vocalization and singing of English songs, including breathing, vowel clarity, and pronunciation of consonants. (Typically offered: Fall and Spring)
MUAC 2112. Music Technology. 2 Hours.
Introduces skills for transcribing music using music notation software and sound reinforcement systems. Covers MIDI sequencing and audio recording and editing software to produce accompaniment tracks and create compact discs of music and multimedia projects. Prerequisite: Music major pursuing a Bachelor of Music or Honors Bachelor of Music degree, and sophomore standing. (Typically offered: Fall, Spring and Summer)

## MUAC 2221. Piano Class for Music Majors III. 1 Hour.

A continuation of MUAC 1231. Two meetings per week. Upon successful completion of MUAC 2221 with a grade of B or better, credit for MUAC 1221 and MUAC 1231 will also be given. Prerequisite: MUAC 1231 and a music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music. (Typically offered: Spring)
MUAC 2231. Piano Class for Music Major IV. 1 Hour.
A continuation of MUAC 2221. Two meetings per week. Upon successful completion of MUAC 2231 with a grade of B or better, credit for MUAC 1221, MUAC 1231, and MUAC 2221 will also be given. Prerequisite: MUAC 2221 and a music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music. (Typically offered: Fall)

MUAC 2321. Guitar Class Intermediate. 1 Hour.
Continues the development of several skills on the guitar such as rhythm playing, chord formations, sheet music reading, and melody presentation. Includes significant solo and group playing experiences. Prerequisite: MUAC 1321 or Instructor Consent. (Typically offered: Fall and Spring)
MUAC 3401. Jazz Improvisation I. 1 Hour.
This course is the first in a four-semester sequence on the study of jazz improvisation with a linguistic approach. The class will cover the vocabulary and grammar of jazz, as well as rhetoric, story-telling and emotional performance. Each week students will be expected to be proficient in technical drills, harmonic and rhythmic vocabulary, and repertoire related to the four fundamental forms encompassed by the course. Transcriptions and writing assignments will also be given, and students will work with the Contrast Method of Improvisational Concepts, self-listening and analysis, performing the topics in class, group performance, and artistic development. (Typically offered: Fall)

## MUAC 3411. Jazz Improvisation II. 1 Hour.

This course is the second in a four-semester sequence on the study of jazz improvisation with a linguistic approach. The class will cover the vocabulary and grammar of jazz, as well as rhetoric, story-telling and emotional performance. Each week students will be expected to be proficient in technical drills, harmonic and rhythmic vocabulary, and repertoire related to the four fundamental forms encompassed by the course. Transcriptions and writing assignments will also be given, and students will work with the Contrast Method of Improvisational Concepts, self-listening and analysis, performing the topics in class, group performance, and artistic development. Prerequisite: MUAC 3401. (Typically offered: Spring)

## MUAC 4371. Teaching the High School Percussionist. 1 Hour.

A study of solo literature and small and large ensemble literature appropriate for the high school percussionist. Emphasis on advanced snare drum and marimba lit., timpani and the broad range of percussionist instruments. Includes study of high school band, orchestra and percussion ensemble scores. Prerequisite: MUED 1371. (Typically offered: Irregular)

## MUAC 4401. Jazz Improvisation III. 1 Hour.

This course is the third in a four-semester sequence on the study of jazz improvisation with a linguistic approach. The class will cover the vocabulary and grammar of jazz, as well as rhetoric, story-telling and emotional performance. Each week students will be expected to be proficient in technical drills, harmonic and rhythmic vocabulary, and repertoire related to the four fundamental forms encompassed by the course. Transcriptions and writing assignments will also be given, and students will work with the Contrast Method of Improvisational Concepts, self-listening and analysis, performing the topics in class, group performance, and artistic development. Prerequisite: MUAC 3411. (Typically offered: Fall)

## MUAC 4411. Jazz Improvisation IV. 1 Hour.

This course is the fourth in a four-semester sequence on the study of jazz improvisation with a linguistic approach. The class will cover the vocabulary and grammar of jazz, as well as rhetoric, story-telling and emotional performance. Each week students will be expected to be proficient in technical drills, harmonic and rhythmic vocabulary, and repertoire related to the four fundamental forms encompassed by the course. Transcriptions and writing assignments will also be given, and students will work with the Contrast Method of Improvisational Concepts, self-listening and analysis, performing the topics in class, group performance, and artistic development. Prerequisite: MUAC 4401. (Typically offered: Spring)

MUAC 4421. Advanced Studies in Improvisation. 1 Hour.
Extends the techniques built in the improvisation course sequence (MUAC 3401, MUAC 3411, MUAC 4401, MUAC 4411) with specialized topics in a variety of improvisatory traditions. Sections may include "Free Jazz", "Coltrane and Chromaticism" "Atonal Improvisation", "Baroque Improvisation" and "World Music Improvisation". Prerequisite: MUAC 4411 or instructor consent. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

## Applied Music (Private Inst) Courses

MUAP 100V. Applied Secondary-Level Voice/Instrument I. 1-2 Hour.
Private study of secondary voice/instrument. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

## MUAP 110V. Applied Major Voice/Instrument I. 1-4 Hour.

Private study of the primary voice/instrument for music majors. Admission to MUAP 110V requires the successful completion of audition for the instructor. Prerequisite: Music major. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 130V. Applied Skills Voice/Instrument I. 1-4 Hour.
Private study of the primary voice/instrument for music majors. Continued development of fundamental musical and technical skills introduced in MUAP 110V. Prerequisite: Music major; recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 200V. Applied Secondary-Level Voice/Instrument II. 1-2 Hour. Continued private study of secondary voice/instrument. Instructor permission required to enroll. Prerequisite: Two semesters of MUAP 100V and recommendation of the instructor. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

## MUAP 210V. Applied Major Voice/Instrument II. 1-4 Hour.

Continued private study of the primary voice/instrument for music majors. Prerequisite: Two semesters of MUAP 110V with grades of B or better or MUAP 130 V with a grade of B or better. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

## MUAP 230V. Applied Skills Voice/Instrument II. 1-4 Hour

Private study of the primary voice/instrument for music majors. Continued development of fundamental musical and technical skills introduced in MUAP 210V. Prerequisite: Two semesters of MUAP 210V and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 300V. Applied Secondary-Level Voice/Instrument III. 1-2 Hour. Advanced private study of secondary voice/instrument. Prerequisite: Two semesters of MUAP 200V and recommendation of the instructor. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

MUAP 310V. Applied Major Voice/Instrument III. 1-4 Hour.
Continuation of MUAP 210V. Private study of the primary instrument/voice for music majors at the advanced level. Admission requires approval of the faculty committee of the area of study (voice, piano, woodwind, brass, percussion). Mastery of fundamental/technical skills sufficient to prepare for a recital must be observable by the committee. Prerequisite: Two semesters of MUAP 210 V with grades of $B$ or better or MUAP 230V with a grade of B or better. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 310VH. Honors Applied Major Voice/Instrument III. 1-4 Hour.
Continuation of MUAP 210V. Private study of the primary voice/instrument for honors music majors at the advanced level. Admission requires approval of faculty committee of the area of study (voice, piano, woodwind, brass, percussion). Mastery of fundamental/technical skills sufficient to prepare for a recital must be observable by the committee. Prerequisite: Two semesters of MUAP 210 V with grades of B or better or MUAP 230V with a grade of B or better; honors standing. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.
This course is equivalent to MUAP 310 V .
MUAP 3201. Applied Recital I. 1 Hour.
Preparation and performance of a public recital of a minimum of 25 minutes of music. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUAP 3201H. Honors Applied Recital I. 1 Hour.
Preparation and performance of a public recital of a minimum of 50 minutes of music. Corequisite: MUAP 310VH. (Typically offered: Fall and Spring) May be repeated for degree credit.
This course is equivalent to MUAP 3201.
MUAP 330V. Applied Skills Voice/Instrument III. 1-4 Hour.
Private study of the primary voice/instrument for music majors at the advanced level. Continued development of musical and technical skills introduced in MUAP 310V. Prerequisite: Two semesters of MUAP 310V and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 400V. Applied Secondary-Level Voice/Instrument IV. 1-2 Hour. Continued advanced private study of secondary voice/instrument. Instructor permission required to enroll. Prerequisite: Two semesters of MUAP 300V and recommendation of the instructor. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

## MUAP 410V. Applied Major Voice/Instrument IV. 1-4 Hour.

Continuation of MUAP 310V. Private study of the primary voice/instrument for music majors at the advanced level. Prerequisite: Two semesters of MUAP 310V with recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 410VH. Honors Applied Major Voice/Instrument IV. 1-4 Hour.
Continuation of MUAP 310VH. Private study of the primary voice/instrument for honors music majors at the advanced level. Prerequisite: Two semesters of MUAP 310 VH , recommendation of instructor and honors standing. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.
This course is equivalent to MUAP 410 V .

## MUAP 415V. Applied Skills Voice/Instrument IV. 1-4 Hour.

Private study of the primary voice/instrument for music majors at the advanced level in preparation for recital. Continued development of musical and technical skills introduced in MUAP 410V. Prerequisite: Two semesters of MUAP 410V and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.
MUAP 4201. Applied Recital II. 1 Hour.
Preparation and performance of a public recital of a minimum of 50 minutes of music. Prerequisite: MUAP 3201. (Typically offered: Fall and Spring) May be repeated for degree credit.

## MUAP 4201H. Honors Applied Recital II. 1 Hour.

Preparation and performance of a public recital of a minimum of 50 minutes of music. Corequisite: MUAP 410VH. (Typically offered: Fall and Spring) May be repeated for degree credit.
This course is equivalent to MUAP 4201.
MUAP 4301. Composition Recital. 1 Hour.
Preparation and performance of a public recital of a minimum of 50 minutes consisting of original musical compositions. (Typically offered: Fall and Spring) May be repeated for degree credit.

## Ethnomusicology Courses

MUSY 2003. Music in World Cultures. 3 Hours.
Provides an overview of music from around the world. Examines the role of music in different social and cultural contexts. A variety of indigenous, folk, religious, popular, and art music traditions will be explored, along with the people and cultures that create them. (Typically offered: Fall and Spring)

MUSY 2003H. Honors Music in World Cultures. 3 Hours.
Provides an overview of music from around the world. Examines the role of music in different social and cultural contexts. A variety of indigenous, folk, religious, popular, and art music traditions will be explored, along with the people and cultures that create them. (Typically offered: Fall and Spring)
This course is equivalent to MUSY 2003.

## Music Education Courses

MUED 1371. Teaching the Beginning Percussionist. 1 Hour.
A study of the pedagogy and techniques needed to instruct middle school and junior high percussionists. Emphasis on elementary snare drum and marimba performance. Study of junior high band and orchestra methods, solos and ensemble music. Prerequisite: MUEDBM major. (Typically offered: Fall and Spring)
MUED 2012. Introduction to Music Education. 2 Hours.
A course designed to provide early experiences for the prospective music teacher. Students will become familiar with professional trends, music classroom organizational and management issues, and principles of effective education. Emphases will include basic psychological and philosophical orientation, as well as observations in public school classrooms. Required of all prospective Music Education majors. (Typically offered: Spring)

MUED 2532. Class Instruction in Woodwind Instruments. 2 Hours.
Familiarizes students with elementary and intermediate skills, techniques and pedagogy needed to teach woodwind instruments--flute, clarinet, saxophone, oboe, and bassoon--in a class setting. Corequisite: Lab component. Prerequisite: MUEDBM major. (Typically offered: Fall and Spring)

MUED 2542. Class Instruction in Brass Instruments. 2 Hours.
Familiarizes students with elementary and intermediate skills, techniques and pedagogy needed to teach brass instruments--trumpet, French horn, trombone, euphonium, and tuba--in a class setting. Corequisite: Lab component. Prerequisite: MUEDBM major. (Typically offered: Fall and Spring)

MUED 2552. Class Instruction in Orchestral String Instruments. 2 Hours. Familiarizes students with elementary and intermediate skills, techniques and pedagogy needed to teach orchestral stringed instruments in a class setting. Includes a lab that specifically focuses on peer teaching of concepts and skills related to teaching stringed instruments. Corequisite: Lab component. Prerequisite: MUEDBM major. (Typically offered: Fall and Spring)

MUED 3021. Supervised Practicum in Teaching Musical Skills. 1 Hour. Provides for supervised teaching opportunities with public school students in instrumental, choral, and elementary classes. Prerequisite: MUEDBM major and MUED 2012. (Typically offered: Spring)
MUED 3833. Music Education in the Elementary School. 3 Hours. Concepts of elementary music education; methods, materials, curriculum design, and supervision in elementary school music. Prerequisite: MUED 2012. (Typically offered: Fall and Spring)

MUED 3911. Classroom Instruments in Music Education. 1 Hour.
The study of instruments utilized in the general music classroom, including but not limited to the Orff Instrumentarium, pitched and unpitched hand-held percussion, frame and various ethnic drums, guitar, and recorder. Elementary and secondary general music classroom preparation with an emphasis on orchestration, composition, and improvisation with instruments commonly utilized in required music classes in public schools. Open to music education majors or with instructor's consent. Pre- or Corequisite: MUED 3833. Prerequisite: MUED 2012. (Typically offered: Fall)

MUED 4031. Seminar for Professional Entry into Music Education. 1 Hour. A seminar offered during student teaching semester to prepare the student for the role of a professional educator. Content includes professional ethics and conduct, classroom management, evaluation and grading, and application for employment. (Typically offered: Fall and Spring)

## MUED 4112. Pedagogy in Music Education. 2 Hours.

A course presenting broad music teaching concepts and specific teaching behaviors. Students will experience the pedagogical teaching situation through the construct of effective communication practice. Emphases will be on providing a laboratory environment representative of public school classrooms. Required of all Music Education majors. Prerequisite: MUED 3833. (Typically offered: Fall)

MUED 4273. Methods for Teaching String Instruments. 3 Hours.
Methods and materials for students preparing to teach orchestral instruments and ensembles in the public schools. Prerequisite: MUED 1371, MUED 2012, MUED 2532, MUED 2542, MUED 2552, and MUED 3021. (Typically offered: Fall Odd Years)

## MUED 4283. Teaching Vocal Music. 3 Hours.

Methods and materials used in teaching secondary choral music. Prerequisite: MUED 2012 . (Typically offered: Irregular)
MUED 4293. Instrumental Methods. 3 Hours.
Problems of teaching instrumental music in the public schools. Prerequisite: MUED 1371, MUED 2012, MUED 2532, MUED 2542, MUED 2552, and MUED 3021. (Typically offered: Fall)

## MUED 451V. Student Teaching: Elementary Music. 4-8 Hour.

A minimum of five weeks and a maximum of ten weeks will be spent in an offcampus school, where the student will teach under supervision in the elementary classroom and will participate in other activities involving the school and community. Enrollment requirement is for a total of 12 hours and 15 weeks involvement in MUED 452 V and MUED 451V. Successful completion of a criminal background check is required prior to beginning student teaching. Corequisite: MUED 452V. Prerequisite: Bachelor of Music degree in Music Education. (Typically offered: Fall and Spring)

## MUED 452V. Student Teaching: Secondary Music. 4-8 Hour.

A minimum of five weeks and a maximum of ten weeks will be spent in an offcampus school, where the student will teach under supervision in the elementary classroom and will participate in other activities involving the school and community. Enrollment requirement is for a total of 12 hours and 15 weeks involvement in MUED 452V and MUED 451V. Successful completion of a criminal background check is required before beginning student teaching. Corequisite: MUED 451V. Prerequisite: Bachelor of Music degree in Music Education. (Typically offered: Fall and Spring)

## MUED 4743. Characteristics of Special Needs Students in the Music

## Classroom. 3 Hours.

Provides an overview to special needs students in the music classroom.
Explores the characteristics of special needs students in six domains: cognitive, communicative, emotional, behavioral, and medical and physical. Requires outside class time working with special needs students. Prerequisite: Instructor's consent. (Typically offered: Fall)

## MUED 477V. Special Topics in Music Education. 1-4 Hour.

Subject matter not covered in other sources. With permission, may be repeated for credit if topics are different. (Typically offered: Irregular) May be repeated for degree credit.

## Music Ensemble Courses

MUEN 1211. Latin American Ensemble I. 1 Hour.
Plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1221. World Music Ensemble I. 1 Hour.

Study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1231. Songwriters' Ensemble I. 1 Hour.

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

MUEN 1241. Beginning Jazz Combo. 1 Hour.
Introductory ensemble experience offering a repertoire-based approach to learning basic improvisation skills and the performance of common jazz styles. Open to both music and non-music majors. (Typically offered: Spring)

MUEN 1251. Arkansas Soul Band I. 1 Hour.
Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1261. Intermediate Jazz Combo I. 1 Hour.
Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1271. Advanced Jazz Combo I. 1 Hour.

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1281. Vocal Jazz Ensemble I. 1 Hour.

Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1401. Opera Theatre I. 1 Hour.
Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1411. Razorback Chorus I. 1 Hour.

Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenorbass range. Admission is open to any student on campus that can sing in the tenorbass range. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1421. Inspirational Chorale I. 1 Hour.

Performance of African American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music, and sacred world music. Rehearsal 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1431. Symphony Orchestra I. 1 Hour.

Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1441. Marching Band I. 1 Hour.

Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles. Rehearsal 8 hours per week. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## MUEN 1451. Schola Cantorum I. 1 Hour.

Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1461. Wind Symphony I. 1 Hour.

Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1471. Jazz Orchestra. 1 Hour.

Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1481. Campus Band I. 1 Hour.
Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Corequisite: Lab component. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1491. Concert Band I. 1 Hour.
Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1501. Chamber Music I. 1 Hour.

Performance of small ensemble music for any combination of instruments and/ or voice. Rehearsal 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1511. Symphonic Band I. 1 Hour.
Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1521. Woodwind Quintet I. 1 Hour.

Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1541. Accompanying I. 1 Hour.

Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: MUAP 110V. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1551. Percussion Ensemble I. 1 Hour.

Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1561. Musical Theater Orchestra I. 1 Hour.
Instrumental ensemble with focus on the preparation and performance of musical theater pit orchestra music, in conjunction with UA Theater's mainstage musical. Admission by audition or director's approval. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

## MUEN 1581. Chamber Choir I. 1 Hour.

Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1591. Treble Chorus I. 1 Hour.

Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the treble range. Admission is open to any student on campus that can sing in the treble range. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1691. Wind Ensemble I. 1 Hour.

Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1721. Clarinet Ensemble I. 1 Hour.
Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
MUEN 1731. Saxophone Ensemble I. 1 Hour.
Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1741. Chamber Orchestra I. 1 Hour.

Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1761. New Music Ensemble I. 1 Hour.

Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 1771. Trombone Ensemble I. 1 Hour.

Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2211. Latin American Ensemble II. 1 Hour.

This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 2221. World Music Ensemble II. 1 Hour.
Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2231. Songwriters' Ensemble II. 1 Hour.

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## MUEN 2251. Arkansas Soul Band II. 1 Hour.

Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2261. Intermediate Jazz Combo II. 1 Hour.

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2271. Advanced Jazz Combo II. 1 Hour.

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2281. Vocal Jazz Ensemble II. 1 Hour.

Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 2401. Opera Theatre II. 1 Hour.
Continuation of Opera Theatre I. Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2411. Razorback Chorus II. 1 Hour.

Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenorbass range. Admission is open to any student on campus that can sing in the tenor-bass range. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2421. Inspirational Chorale II. 1 Hour.

Continuation of Inspirational Chorale I. Performance of African American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music, and sacred world music. Rehearsal 3 hours per week. Admission with director's approval. Prerequisite: Sophomore standing, audition and approval of director. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2431. Symphony Orchestra II. 1 Hour.

Continuation of Symphony Orchestra I. Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Sophomore standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2441. Marching Band II. 1 Hour.

Continuation of Marching Band I. Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles. Rehearsal 8 hours per week. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## MUEN 2451. Schola Cantorum II. 1 Hour.

Continuation of Schola Cantorum I. Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Sophomore standing and director's consent (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2461. Wind Symphony II. 1 Hour.

Continuation of Wind Symphony I. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Sophomore standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2471. Jazz Orchestra II. 1 Hour.

Continuation of Jazz Performance Laboratory II. Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2481. Campus Band II. 1 Hour.

Continuation of Campus Band I. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Corequisite: Lab component. Prerequisite: Sophomore standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 2491. Concert Band II. 1 Hour.
Continuation of Concert Band I. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Prerequisite: Sophomore standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1491.
MUEN 2501. Chamber Music II. 1 Hour.
Continuation of Chamber Music I. Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2511. Symphonic Band II. 1 Hour.

Continuation of Symphonic Band I. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Sophomore standing; director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2521. Woodwind Quintet II. 1 Hour.

continuation of Woodwind Quintet I. Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2541. Accompanying II. 1 Hour.

Continuation of Accompanying I. Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: Sophomore standing and MUAP 210V. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2551. Percussion Ensemble II. 1 Hour.

Continuation of Percussion Ensemble I. Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. Prerequisite: Sophomore standing. (Typically offered: Spring and Summer) May be repeated for up to 2 hours of degree credit.

## MUEN 2561. Musical Theater Orchestra II. 1 Hour.

Instrumental ensemble with focus on the preparation and performance of musical theater pit orchestra music, in conjunction with UA Theater's mainstage musical. Admission by audition or director's approval. Prerequisite: Sophomore standing. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

## MUEN 2581. Chamber Choir II. 1 Hour.

Continuation of Chamber Choir I. Study and performance of vocal chamber music.
Rehearsal 2 hours per week for 1 hour of credit. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2591. Treble Chorus II. 1 Hour.

Continuation of Women's Chorus I. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the treble range. Admission is open to any student on campus that can sing in the treble range. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2691. Wind Ensemble II. 1 Hour.

Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit. This course is equivalent to MUEN 1691.

## MUEN 2721. Clarinet Ensemble II. 1 Hour.

Continuation of Clarinet Ensemble I. Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2731. Saxophone Ensemble II. 1 Hour.

Continuation of Saxophone Ensemble I. Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2741. Chamber Orchestra II. 1 Hour.

Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Sophomore standing and instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2761. New Music Ensemble II. 1 Hour.

Continuation of New Music Ensemble I. Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2771. Trombone Ensemble II. 1 Hour.

Continuation of Trombone Ensemble I. Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 2781. Tuba Ensemble II. 1 Hour.

Continuation of Tuba Ensemble I. Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets, quintets, and low brass choir. Rehearsal 2 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3211. Latin American Ensemble III. 1 Hour.

This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3221. World Music Ensemble III. 1 Hour.

Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3231. Songwriters' Ensemble III. 1 Hour.

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## MUEN 3251. Arkansas Soul Band III. 1 Hour.

Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3261. Intermediate Jazz Combo III. 1 Hour.

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3271. Advanced Jazz Combo III. 1 Hour.

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3281. Vocal Jazz Ensemble III. 1 Hour.

Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3401. Opera Theatre III. 1 Hour.

Continuation of Opera Theatre II. Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3411. Razorback Chorus III. 1 Hour.

Continuation of Men's Chorus II. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenor-bass range. Admission is open to any student on campus that can sing in the tenor-bass range. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3421. Inspirational Chorale III. 1 Hour.

Continuation of Inspirational Chorale II. Performance of African American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music, and sacred world music. Rehearsal 3 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3431. Symphony Orchestra III. 1 Hour.

Continuation of Symphony Orchestra II. Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Junior standing; director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3441. Marching Band III. 1 Hour.

Continuation of Marching Band II. Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles.
Rehearsal 8 hours per week. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## MUEN 3451. Schola Cantorum III. 1 Hour.

Continuation of Schola Cantorum II. Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Junior standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3461. Wind Symphony III. 1 Hour.

Continuation of Wind Symphony II. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Junior standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3471. Jazz Orchestra III. 1 Hour.

Continuation of Jazz Performance Lab II. Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3481. Campus Band III. 1 Hour.

Continuation of Campus Band II. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Corequisite: Lab component. Prerequisite: Junior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3491. Concert Band III. 1 Hour.

Continuation of Concert Band II. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Prerequisite: Junior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1491.
MUEN 3501. Chamber Music III. 1 Hour.
Continuation of Chamber Music II. Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3511. Symphonic Band III. 1 Hour.

Continuation of Symphonic Band II. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Junior standing and director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
MUEN 3521. Woodwind Quintet III. 1 Hour.
Continuation of Woodwind Quintet II. Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3541. Accompanying III. 1 Hour.
Continuation of Accompanying II. Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: Junior standing and MUAP 310V. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3551. Percussion Ensemble III. 1 Hour.

Continuation of Percussion Ensemble II. Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3581. Chamber Choir III. 1 Hour.

Continuation of Chamber Choir II. Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3591. Treble Chorus III. 1 Hour.

Continuation of Women's Chorus II. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the treble range. Admission is open to any student on campus that can sing in the treble range. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3691. Wind Ensemble III. 1 Hour.
Continuation of Wind Ensemble II. Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1691.
MUEN 3721. Clarinet Ensemble III. 1 Hour.
Continuation of Clarinet Ensemble II. Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3731. Saxophone Ensemble III. 1 Hour.

Continuation of Saxophone Ensemble II. Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3741. Chamber Orchestra III. 1 Hour.
Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Junior standing and instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3761. New Music Ensemble III. 1 Hour.
Continuation of New Music Ensemble II. Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 3771. Trombone Ensemble III. 1 Hour.

Continuation of Trombone Ensemble II. Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3781. Tuba Ensemble III. 1 Hour.
Continuation of Tuba Ensemble II. Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets, quintets, and low brass choir. Rehearsal 2 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4211. Latin American Ensemble IV. 1 Hour.
This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4221. World Music Ensemble IV. 1 Hour.

Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4231. Songwriters' Ensemble IV. 1 Hour.

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## MUEN 4251. Arkansas Soul Band IV. 1 Hour.

Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4261. Intermediate Jazz Combo IV. 1 Hour.

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4271. Advanced Jazz Combo IV. 1 Hour.

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4281. Vocal Jazz Ensemble IV. 1 Hour.
Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4311. Latin American Ensemble V. 1 Hour.

This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4321. World Music Ensemble V. 1 Hour.

Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4331. Songwriters' Ensemble V. 1 Hour.

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## MUEN 4351. Arkansas Soul Band V. 1 Hour.

This ensemble performs historical and contemporary popular music from the African American tradition. These genres include but are not limited to soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills as well as analysis of performance, arrangements and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4361. Intermediate Jazz Combo V. 1 Hour.

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. Prerequisite: Two semesters of MUEN 4261. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4371. Advanced Jazz Combo V. 1 Hour.

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4401. Opera Theatre IV. 1 Hour.
Continuation of Opera Theatre III. Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval.
Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4411. Razorback Chorus IV. 1 Hour.

Continuation of Men's Chorus III. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenor-bass range. Admission is open to any student on campus that can sing in the tenor-bass range. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4421. Inspirational Chorale IV. 1 Hour.

Continuation of Inspirational Chorale III. Performance of African American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music, and sacred world music. Rehearsal 3 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4431. Symphony Orchestra IV. 1 Hour.

Continuation of Symphony Orchestra III. Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Senior standing; director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
MUEN 4441. Marching Band IV. 1 Hour.
Continuation of Marching Band III. Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles.
Rehearsal 8 hours per week. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## MUEN 4451. Schola Cantorum IV. 1 Hour.

Continuation of Schola Cantorum III. Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Senior standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4461. Wind Symphony IV. 1 Hour.

Continuation of Wind Symphony III. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Senior standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4471. Jazz Orchestra IV. 1 Hour.
Continuation of Jazz Performance Lab III. Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4481. Campus Band IV. 1 Hour.

Continuation of Campus Band III. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Corequisite: lab component. Prerequisite: Senior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4491. Concert Band IV. 1 Hour.

Continuation of Concert Band III. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Prerequisite: Senior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1491.
MUEN 4501. Chamber Music IV. 1 Hour.
Continuation of Chamber Music III. Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4511. Symphonic Band IV. 1 Hour.

Continuation of Symphonic Band III. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Senior standing and director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
MUEN 4521. Woodwind Quintet IV. 1 Hour.
Continuation of Woodwind Quintet III. Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4541. Accompanying IV. 1 Hour.
Continuation of Accompanying III. Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: Senior standing and MUAP 410V. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4551. Percussion Ensemble IV. 1 Hour.

Continuation of Percussion Ensemble III. Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
MUEN 4561. Musical Theater Orchestra IV. 1 Hour.
Instrumental ensemble with focus on the preparation and performance of musical theater pit orchestra music, in conjunction with UA Theater's mainstage musical. Admission by audition or director's approval. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

## MUEN 4581. Chamber Choir IV. 1 Hour.

Continuation of Chamber Choir III. Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4591. Treble Chorus IV. 1 Hour.

Continuation of Women's Chorus III. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the treble range. Admission is open to any student on campus that can sing in the treble range. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4601. Opera Theatre V. 1 Hour.

Continuation of Opera Theatre IV. Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval.
Prerequisite: Two semesters of MUEN 4401. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4631. Symphony Orchestra V. 1 Hour.

Continuation of Symphony Orchestra IV. Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Two semesters of MUEN 4431. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4651. Schola Cantorum V. 1 Hour.

Continuation of Schola Cantorum IV. Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Two semesters of MUEN 4451. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4661. Wind Symphony V. 1 Hour.

Continuation of Wind Symphony IV. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Two semesters of MUEN 4461. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4671. Jazz Orchestra V. 1 Hour.
Continuation of Jazz Performance Laboratory IV. Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Two semesters of MUEN 4471. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4691. Wind Ensemble IV. 1 Hour.

Continuation of Wind Ensemble III. Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1691.
MUEN 4721. Clarinet Ensemble IV. 1 Hour.
Continuation of Clarinet Ensemble III. Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4731. Saxophone Ensemble IV. 1 Hour.

Continuation of Saxophone Ensemble III. Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4741. Chamber Orchestra IV. 1 Hour.
Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Senior standing and instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4761. New Music Ensemble IV. 1 Hour.

Continuation of New Music Ensemble III. Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4771. Trombone Ensemble IV. 1 Hour.

Continuation of Trombone Ensemble III. Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

MUEN 4781. Tuba Ensemble IV. 1 Hour.
Continuation of Tuba Ensemble III. Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets quintets, and low brass choir. Rehearsal 2 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4801. Chamber Music V. 1 Hour.
Continuation of Chamber Music IV. Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week. Prerequisite: Two semesters of MUEN 4501. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4811. Symphonic Band V. 1 Hour.

Continuation of Symphonic Band IV. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Two semesters of MUEN 4511 and director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4831. Concert Band V. 1 Hour.
Continuation of Concert Band IV. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Prerequisite: Two semesters of MUEN 4491. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit. This course is equivalent to MUEN 1491.

MUEN 4861. Wind Ensemble V. 1 Hour.
Continuation of Wind Ensemble IV. Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. Prerequisite: Two semesters of MUEN 4691. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1691.
MUEN 4881. Chamber Choir V. 1 Hour.
Continuation of Chamber Choir IV. Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. Prerequisite: Two semesters of MUEN 4581. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## MUEN 4891. Women's Chorus V. 1 Hour.

Continuation of Women's Chorus IV. Select performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to repertory of the greater treble chorus canon. Admission by audition or director's consent. Prerequisite: Two semesters of MUEN 4591. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4941. Marching Band V. 1 Hour.
Continuation of Marching Band IV. Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles. Rehearsal 8 hours per week. Prerequisite: Two semesters of MUEN 4441. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

## Music History Courses

MUHS 3503. Jazz History. 3 Hours.
This course includes overviews of major jazz styles, significant musicians, related historical events, and critical approaches in the field of jazz studies. Students will build skills in active listening, transcription, and academic reading and writing while expanding their familiarity with musical techniques and the cultural history of jazz. Prerequisite: MLIT 1013 or MLIT 1013H. (Typically offered: Fall)

MUHS 3703. Music in Western Civilization. 3 Hours.
Introduction to the study of Western music, history, scholarship, and research methods. Analyzes musical monuments as aesthetic objects and considers their relation to such issues as exoticism, politics and religious belief, as well as the status of this canon in the early twenty-first century. Prerequisite: (MLIT 1013 or MLIT 1013H) and MUTH 1603 or instructor's consent. (Typically offered: Fall and Spring)

## MUHS 3713. Topics in Musicology. 3 Hours.

Topics in Western, world, and popular musics. Prerequisite: ((MLIT 1013 or MLIT 1013H) and MUTH 1603) or instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## MUHS 4253. Capstone Project Seminar. 3 Hours.

Develop a project related to a specific area of musical study. Options include musicological research papers, music theoretical analyses, music cognition research projects, performance lecture recitals, and recording projects with a written component. Prerequisite: MUHS 3703 and MUHS 3713. (Typically offered: Fall and Spring)

## MUHS 4253H. Honors Capstone Project Seminar. 3 Hours.

Develop a project related to a specific area of musical study. Options include musicological research papers, music theoretical analyses, music cognition research projects, performance lecture recitals, and recording projects with a written component. Prerequisite: MUHS 3703 and MUHS 3713 and honors standing. (Typically offered: Spring)
This course is equivalent to MUHS 4253

## MUHS 4623. Music History Review. 3 Hours.

Review of the central data and concepts of music history, with emphasis on individual periods as needed by students enrolled. Credit in this course may not count toward the Master of Music or Master of Education degree. (Typically offered: Fall)

## MUHS 4703. Survey of String Literature. 3 Hours.

A survey of solo and chamber music literature involving stringed instruments. Prerequisite: MUAP 110V and MUTH 3613. (Typically offered: Fall Even Years)

MUHS 4733. Survey of Symphonic Literature. 3 Hours.
A survey of the symphonic literature from its beginning to the present. (Typically offered: Fall Odd Years)

MUHS 4763. Survey of Vocal Literature I. 3 Hours.
A survey of concert literature for the solo voice. (Typically offered: Fall Even Years)
MUHS 4773. Survey of Vocal Literature II. 3 Hours.
A survey of concert literature for the solo voice. Prerequisite: MUHS 4763. (Typically offered: Spring Odd Years)

MUHS 4793. Band Literature. 3 Hours.
A study of literature written for performance by concert band, symphonic band, and wind ensemble, representative of the following five periods in Music History: Renaissance (1420-1600), Baroque (1600-1750), Classical (1750-1820), Romantic (1820-1900), and Contemporary (1900-present). (Typically offered: Irregular)

## MUHS 4803. Survey of Keyboard Literature I. 3 Hours.

A survey of the piano works of outstanding composers. Prerequisite: MUAP 110V. (Typically offered: Fall Even Years)

## MUHS 4813. Survey of Keyboard Literature II. 3 Hours.

A survey of the piano works of outstanding composers. Prerequisite: MUHS 4803. (Typically offered: Spring Odd Years)

MUHS 489V. Seminar in Music History. 1-4 Hour.
Subject matter not covered in other courses. With permission, may be repeated for credit if topics are different. (Typically offered: Irregular) May be repeated for degree credit.

## Music Industry Courses

MUIN 2011. Contemporary Commercial Songwriting. 1 Hour.
Introduction to the songwriting craft and profession by studying songwriting techniques, creating original songs, and exploring business aspects of the songwriting component of the music industry. No prior music courses or experience required. Instrumental, vocal, or music technology skills encouraged. (Typically offered: Fall, Spring and Summer)

## MUIN 3213. 21st Century Music Industry. 3 Hours.

An overview of the 21st-century music industry focusing on history, current developments, and foundational concepts. Includes an in-depth examination of the publishing, recording, and live entertainment components of the music industry as well as contemporary entrepreneurial pathways. (Typically offered: Fall and Spring)

MUIN 3313. The Art of Music Production. 3 Hours.
Foundational skills used in creating, editing, mixing, producing recordings using digital production techniques. Topics include properties of sound, tools of the audio trade, philosophy and methodology of recording, and how to manipulate sound in a variety of ways once captured. (Typically offered: Fall and Spring)

## MUIN 3403. Composing for Film and Television. 3 Hours.

Develop the tools needed to create original music for visual media. Focuses on the aesthetics, procedures, and technical aspects of scoring for film and television. Completion of MUTH 3613 Form and 20th Century Techniques or MUTH 3723 Jazz Analysis is recommended. Prerequisite: (MUAC 2112 and MUTH 2603) or instructor consent. (Typically offered: Fall and Spring)

MUIN 405V. Independent Study in Music Industry. 1-3 Hour.
Students will complete a research project, a business or entrepreneurship project, or an artistic project working closely with faculty from multiple music industry disciplines. Prerequisite: MUIN 3213 and Instructor Consent. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

MUIN 4103. Legal Aspects of the Music Industry. 3 Hours.
Presents an in-depth look at the many types of legal agreements and concepts in the music industry commonly utilized by artists, composers, and corporations. Topics include copyright, trademark, recording contracts, management, publishing and licensing. (Typically offered: Fall and Spring)

MUIN 4553. Live Music Business. 3 Hours.
The applied component of the live music business corresponding to the studentrun record label services project in the department of music. Incorporates live music project cycles, digital marketing of live music, booking venues, routing tours, creating showcase events for student-run record label artists. Corequisite: Lab component. (Typically offered: Fall)

## MUIN 4563. Artist Development. 3 Hours.

The applied component of the artist development side of the music department's student-run label services project. Students will work on project cycles involving selecting artists, recording and producing music, organizing music releases and media campaigns, creating online promotional strategies, and mapping the development of musical artists' careers. Corequisite: Lab component. (Typically offered: Spring)

## Music Literature Courses

MLIT 1003. Experiencing Music (ACTS Equivalency = MUSC 1003). 3 Hours. Examines how music reflects and impacts culture while familiarizing students with various musical styles, forms and ideas. Develops listening skills and introduces basic music vocabulary and fundamentals. (Typically offered: Fall, Spring and Summer)

## MLIT 1003H. Honors Experiencing Music. 3 Hours.

Examines how music reflects and impacts culture while familiarizing students with various musical styles, forms and ideas. Develops listening skills and introduces basic music vocabulary and fundamentals. (Typically offered: Fall and Spring) This course is equivalent to MLIT 1003.

MLIT 1013. Music and Society. 3 Hours.
Introduction to academic study of Western art music, jazz, popular music, and world music. Students will gain experience in guided listening and in reading, writing, and critical thinking about musical cultures and their roles in society. Required for music majors. Prerequisite: Music major or music minor or instructor consent. (Typically offered: Spring)

## MLIT 1013H. Honors Music and Society. 3 Hours.

Introduction to academic study of Western art music, jazz, popular music, and world music. Students will gain experience in guided listening and in reading, writing, and critical thinking about musical cultures and their roles in society. Required for music majors. Prerequisite: Music major or music minor and honors standing or instructor consent. (Typically offered: Fall)
This course is equivalent to MLIT 1013.
MLIT 1333. Popular Music. 3 Hours.
Covers the history of popular music during the 20th and 21 st centuries within its social and cultural contexts. Examines the origins, evolution, and stylistic features of prominent popular genres, such as country, rock, blues, hip hop, and soul. (Typically offered: Fall and Spring)

## Music Pedagogy Courses

MUPD 3801. Conducting I. 1 Hour.
A study of the elementary techniques of conducting instrumental and choral groups. Prerequisite: MUTH 2603. (Typically offered: Fall)

MUPD 3811. Conducting II: Instrumental Music. 1 Hour.
Continuation of study of the technique of conducting instrumental music groups. Prerequisite: MUPD 3801. (Typically offered: Spring)

MUPD 3861. Conducting II: Vocal Music. 1 Hour.
Continuation of study of conducting with emphasis on techniques of choral conducting. Prerequisite: MUPD 3801. (Typically offered: Spring)

## MUPD 3871. Reed-Making. 1 Hour.

The making of reeds for oboe, bassoon, or clarinet, including the processing of cane from tubes. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

MUPD 3883. Jazz Pedagogy. 3 Hours.
This course will provide future teachers with a sequenced method and resource materials to teach jazz songs, style, and improvisation by ear and from sheet music in instrumental and vocal ensembles. The course will also address ensemble rehearsal techniques and teaching individual students. The teaching content includes a variety of songs from the jazz tradition appropriate for students in middle school, high school, and college, along with tools for assessment of student progress. (Typically offered: Irregular)

## MUPD 477V. Special Topics in Pedagogy. 1-6 Hour.

Subject matter not covered in other sources. With permission, may be repeated for credit if topics are different. (Typically offered: Irregular) May be repeated for degree credit.

## MUPD 481V. Conducting. 1-4 Hour.

Private lessons of $1 / 2$ hour, and one hour conducting laboratory each week. Development of skills in conducting symphony, opera, oratorio, ballet and band repertoire. (Typically offered: Fall and Spring) May be repeated for degree credit.

## MUPD 4863. Piano Pedagogy. 3 Hours.

Analytical study and discussion of the various approaches to piano pedagogy and its application in individual/class instruction. Involves demonstration of principles through actual teaching of beginning, intermediate and upper level students. (Typically offered: Spring Even Years)

## Music Theory Courses

MUTH 1003. Basic Musicianship. 3 Hours.
Introductory-level studies in music theory and aural perception for students not prepared for MUTH 1603 or MUTH 1621. (Typically offered: Fall)
MUTH 1603. Music Theory I. 3 Hours.
A study of diatonic harmonic practice. Includes part-writing and analysis.
Prerequisite: A grade of C or better in MUTH 1003 or instructor consent. (Typically offered: Spring)
MUTH 1621. Aural Perception I. 1 Hour.
Development of aural perception through ear training, sight singing, and keyboard harmony. Meets 2 hours per week. (Typically offered: Spring)
MUTH 1631. Aural Perception II. 1 Hour.
Continued development of aural perception through ear training, sight singing, and keyboard harmony. Meets 2 hours per week. Prerequisite: $A$ grade of $C$ or better in MUTH 1621. (Typically offered: Fall)
MUTH 164V. Composition I. 1-4 Hour.
Private lessons of one-half hour, and one hour of composition laboratory session each week. Development of skills in creative musical expression. Specifically for composition-theory majors. Others admitted by consent. Prerequisite: Music theory or composition major. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

## MUTH 2603. Music Theory II. 3 Hours.

A continuation of MUTH 1603. Also includes chromatic harmony. Prerequisite: A grade of C or better in MUTH 1603. (Typically offered: Fall)

## MUTH 2621. Aural Perception III. 1 Hour.

A continuation of MUTH 1631. Two hours per week, one hour credit. Prerequisite: A grade of C or better in MUTH 1631. (Typically offered: Spring)

## MUTH 2631. Aural Perception IV. 1 Hour.

A continuation of MUTH 2621. Two hours per week, one hour credit. Prerequisite: A grade of C or better in MUTH 2621. (Typically offered: Fall)

## MUTH 264V. Composition II. 1-4 Hour.

Continuation of Composition I. Private lessons of one-half hour, and one hour of composition laboratory session per credit hour each week. Continued development of skills in creative musical expression. Specifically for composition-theory majors. Others admitted by consent. Prerequisite: Two semesters of MUTH 164V with grades of "B" and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

## MUTH 3603. 18th Century Counterpoint. 3 Hours.

A study of 18 th century counterpoint. Writing and analysis of inventions, canons, fugues, etc. Three hours per week. Prerequisite: $A$ grade of $C$ or better in MUTH 2603. (Typically offered: Spring)
MUTH 3613. Form and 20th Century Techniques. 3 Hours.
A study of the harmonic and melodic trends of the 20th century. Three hours per week. Prerequisite: A grade of C or better in MUTH 2603. (Typically offered: Fall)

## MUTH 364V. Composition III. 1-4 Hour.

Continuation of Composition II. Private lessons of one-half hour, and one hour of composition laboratory session per credit hour each week. Continued development of advanced skills in creative musical expression. Specifically for composition-theory majors. Others admitted by consent. Prerequisite: Two semesters of MUTH 264V with grades of $B$ and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

## MUTH 364VH. Honors Composition III. 1-4 Hour.

Continuation of Composition II for honors students. Private lessons of onehalf hour, and one hour of composition laboratory session per credit hour each week. Continued development of advanced skills in creative musical expression. Specifically for honors composition-theory majors. Prerequisite: Two semesters of MUTH 264 V with grades of " B ", recommendation of instructor and honors standing. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.
This course is equivalent to MUTH 364 V .

## MUTH 3723. Jazz Analysis. 3 Hours.

This course is an introduction to jazz analysis. Course content will include lead sheet symbols, jazz progressions, lead sheet analysis, improvisation, phrasing and meter, and aural skills. Prerequisite: A grade of C or better in MUTH 2603. (Typically offered: Irregular)

## MUTH 3733. Functional Jazz Piano. 3 Hours.

This course is intended for both jazz pianists and non-pianists and provides methods for common jazz piano voicings. Through practical applications and drills, the students will be familiar with a variety of common voicings techniques, including (but not limited to): 1) "shell" voicing, 2) two-note critical tone voicings (both with roots and rootless), 3) three-note left-hand voicings, and 4) four-part "drop 2" voicings. Also, this course will provide basic techniques for improvisation. Prerequisite: MUTH 1603 and MUTH 1621, both with grades of C or better. (Typically offered: Irregular)

## MUTH 3742. Jazz Arranging. 2 Hours.

This course introduces students to techniques in arranging for small and large jazz ensembles. Students will analyze representative examples of various jazz styles, learn technical features of common jazz instruments, experiment with common approaches to arranging, and write their own arrangements of jazz standards for small ensemble and big band. Prerequisite: MUTH 2603. (Typically offered: Irregular)

## MUTH 4322. Score Reading. 2 Hours.

A conductor's approach to the technique of score reading and analysis of orchestra, band, and choral scores for the purpose of preparing composition for rehearsal and performance. (Typically offered: Fall)

MUTH 4612. Orchestration. 2 Hours.
A continuation of study of the capabilities of the various orchestral and band instruments and their use in arrangement for ensembles, band, and orchestra. Scoring for orchestra. Prerequisite: MUTH 3613. (Typically offered: Spring)

## MUTH 462V. Music Theory Review. 1-3 Hour.

A continuation and intensification of undergraduate music theory. (May not count for credit toward the Master of Music degree.) (Typically offered: Fall)

## MUTH 464V. Composition IV. 1-4 Hour.

Continuation of Composition III. Private lessons of one-half hour and one hour of composition laboratory session per credit hour each week. Continued development of advanced skills in creative musical expression. Specifically for composition-theory majors. Others admitted by consent. Prerequisite: Two semesters of MUTH 364V with grades of "B" and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

## MUTH 4703. Writing Music Analysis. 3 Hours.

Analysis of music with an emphasis on analytical writing skills and the use of library source materials. Prerequisite: MUTH 3603. (Typically offered: Spring)

MUTH 477V. Special Topics in Music Theory. 1-4 Hour.
Subject matter not covered in other courses. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for degree credit.

MUTH 477VH. Honors Special Topics in Music Theory. 1-4 Hour.
Subject matter not covered in other courses. (Typically offered: Irregular) May be repeated for up to 8 hours of degree credit.
This course is equivalent to MUTH 477V.

MUTH 498V. Senior Thesis. 1-18 Hour.
Senior Thesis. (Typically offered: Fall, Spring and Summer)

## Music Courses

MUSC 3923H. Honors Colloquium in Music. 3 Hours.
Covers a special topic or issue offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in Music). (Typically offered:
Irregular) May be repeated for up to 9 hours of degree credit.
MUSC 490VH. Honors Essay. 1-6 Hour.
An honors research paper in Music History or literature, Ethnomusicology, Music Theory, or Music Education. Open to seniors in honors. (Typically offered: Irregular)

## Philosophy (PHIL)

Edward Minar

Department Chair
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Philosophy Department Website (https://fulbright.uark.edu/departments/ philosophy/)

The Department of Philosophy offers an undergraduate major in philosophy as well as a combined major in philosophy and African and African American studies, both of which lead to a Bachelor of Arts degree. The department also offers a minor in philosophy.

The problems of philosophy include some of the deepest, most interesting, and most challenging questions that the human mind can raise. What is the difference between appearance and reality? What are the sources and limits of human knowledge? Does God exist? What is the origin of evil? Can computers think or have feelings? Do we have freedom of the will? Why be moral, and how is morality related to law? What is the proper scope of governmental authority? What is scientific explanation and why does it work? How does science differ from art? What is truth? What is the meaning of a word?

Philosophy cannot claim to have discovered fully adequate answers either to these questions or to the other questions that fall within its scope, but it has developed fruitful ways of addressing them, and it has found a number of partial answers that are both useful and exciting. Although the department's bent is generally analytic, our course offerings cover a broad range and include every major period in the history of western philosophy and most of the major subfields of contemporary philosophy. Our areas of special concentration are the philosophy of mind, epistemology, and philosophy of religion.

For requirements for advanced degrees in philosophy, see the Graduate School Catalog (http://catalog.uark.edu/graduatecatalog/programsofstudy/ philosophyphil/).

## Requirements for a Major in Philosophy

Students must complete 120 degree credit hours to include the minimum University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/), the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), and following course requirements for the major. Bolded courses from the list below may be applied to portions of the University/state minimum core requirements.

Select one of the following:
CLST 1003 Introduction to Classical Studies: Greece

| HIST 1113 | Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) |  |
| :---: | :---: | :---: |
| HIST 1123 | Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123) |  |
| 33 Semester Hours in Philosophy to include: |  |  |
| PHIL 2003 | Introduction to Philosophy (ACTS Equivalency = PHIL 1103) | 3 |
| PHIL 2203 or PHIL 4253 | Logic (ACTS Equivalency $=$ PHIL 1003 $)$ Symbolic Logic I | 3 |
| PHIL 4003 | Ancient Greek Philosophy | 3 |
| PHIL 4033 | Modern Philosophy-17th and 18th Centuries | 3 |
| and |  |  |
| 18 additional hours in PHIL electives |  | 18 |
| and either |  |  |
| PHIL 4983 | Capstone Course for Philosophy Majors | 3 |
| Or a successfully defended honors thesis in philosophy. |  |  |

## Total Hours

Writing Requirement: The writing requirement can be satisfied either by completion of an acceptable thesis or by approval of a research/analytical paper from any 4000-level course in philosophy submitted by the student to the Philosophy Department's Undergraduate Committee.

## Philosophy B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as College requirements (p. 273). Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| UNIV 1001 University Perspectives | 1 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) | 3 |  |
| PHIL 2003 Introduction to Philosophy (ACTS Equivalency = PHIL 1103) (Satisfies General Education Outcomes 3.2 and 5.1) | 3 |  |
| State Minimum Core Fine Arts or U.S. History or Government requirement (Satisfies General Education Outcome 3.1 or 4.2$)^{1}$ | 3 |  |
| General Elective | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| State Minimum Core U.S. History or Government or Fine Arts requirement (Satisfies General Education Outcome 4.2 or 3.1$)^{1}$ |  | 3 |
| PHIL 2203 Logic (ACTS Equivalency = PHIL 1003) (Satisfies General Education Outcome 5.1) |  | 3 |


| General Elective |  | 6 |
| :---: | :---: | :---: |
| Year Total: | 16 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| PHIL 4003 Ancient Greek Philosophy ${ }^{\text {3, }} 4$ | 3 |  |
| Select one of the following (Satisfies General | 3 |  |
| Education Outcome 4.1): |  |  |
| CLST 1003 Introduction to Classical Studies: Greece |  |  |
| HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) |  |  |
| HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency $=$ HIST 1123) |  |  |
| State Minimum Core Social Science requirement (Satisfies General Education Outcome 3.3) ${ }^{2}$ | 3 |  |
| Science State Minimum Core Lecture and | 4 |  |
| Corequisite Lab requirement (Satisfies General Education Outcome 3.4) |  |  |
| General Elective | 3 |  |
| PHIL 4033 Modern Philosophy-17th and 18th Centuries ${ }^{3,4}$ |  | 3 |
| Advanced Level Elective ${ }^{3}$ |  | 3 |
| State Minimum Core Social Science requirement (Satisfies General Education Outcome 3.3) ${ }^{2}$ |  | 3 |
| General Electives |  | 6 |
| Year Total: | 16 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| PHIL 3000-4000 Level Elective ${ }^{3,4}$ | 3 |  |
| PHIL 3000-4000 Level Elective 3, 4 | 3 |  |
| State Minimum Core Social Science requirement (as needed) (Satisfies General Education Outcome 3.3) or General Elective ${ }^{2}$ | 3 |  |
| Science State Minimum Core Lecture and | 4 |  |
| Corequisite Lab requirement (Satisfies General |  |  |
| Education Outcome 3.4) |  |  |
| Advanced Level Elective ${ }^{3}$ | 3 |  |
| PHIL course from 3000-4000 Level Elective ${ }^{3,4}$ |  | 3 |
| Advanced Level Elective ${ }^{3}$ |  | 3 |
| Advanced Level Elective ${ }^{3}$ |  | 3 |
| General Electives |  | 6 |
| Year Total: | 16 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| PHIL course from 3000-4000 Level Elective ${ }^{3,4}$ | 3 |  |
| PHIL course from 3000-4000 Level Elective ${ }^{3,4}$ | 3 |  |
| General Electives | 7-10 |  |
| PHIL 4983 Capstone Course for Philosophy Majors (Satisfies General Education Outcomes 1.2 and $6.1)^{3,4}$ |  | 3 |
| PHIL 3000-4000 Level Elective ${ }^{3,4}$ |  | 3 |

3000-4000 Level Elective ${ }^{3}$
General Electives (as needed to total 120 degree credit hours)
Year Total:
15

## Total Units in Sequence:

${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
2 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include (choose one not taken yet): AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{3}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations (p. 273).
${ }^{4}$ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations (p. 273).

## Requirements for a Minor in Philosophy

The minor requires 18 semester hours in philosophy to include PHIL 2203 or PHIL 4253, and either PHIL 4003 or PHIL 4033. A student may earn either a minor or a combined major in philosophy but not both. A student must notify the department of his or her intent to minor.

Requirements for Honors in Philosophy: Both the College and the Departmental Honors Program in Philosophy provide undergraduate students with the opportunity to participate formally in scholarly philosophical activities, and allow for greater maturity in dealing with philosophical ideas through independent study. Admission to the Fulbright Honors Program is open to philosophy majors with a minimum, cumulative grade point average of 3.5 in all of their coursework. Honors candidates must complete a minimum of 12 hours of honors courses, which may include up to 6 hours of thesis. Honors candidates carry out independent study and research under the guidance of the philosophy faculty and participate in special honors classes, seminars, and colloquia. To successfully complete the required thesis, students should choose an honors thesis adviser as early as possible. An adviser should be selected, and an Honors Agreement completed, no later than the first semester in a student's junior year.

Honors candidates must meet the college's requirements for an honors degree. Students graduating with honors typically graduate with the distinction "Philosophy Scholar Cum Laude" at graduation. Higher degree distinctions (magna cum laude, summa cum laude) are awarded by the Honors Council, are recommended only in truly exceptional cases, and are based upon the whole of the candidate's program of honors studies.

## Faculty

Adler, Jacob, Ph.D., A.B. (Harvard University), Associate Professor, 1984, 1991.
Barrett, David A., Ph.D., M.A. (University of Arkansas), B.A. (Hendrix College), Instructor, 2014.
(Princeton University), B.A. (University of Michigan), Instructor, 2018.
Lee, Richard N., Ph.D. (Stanford University), B.A. (Luther College), Associate Professor, 1982, 1988.
McMullen, Amanda, Ph.D. (University of Miami), B.A. (Stetson University), Assistant Professor, 2019.
Minar, Edward H., Ph.D., A.M., A.B. (Harvard University), Professor, 1994, 2013.
Purdy, Ashley, Ph.D. (University of Pittsburgh), B.A. (State University of New York-Binghamton), Visiting Assistant Professor, 2022.
Reece, Bryan, Ph.D. (University of Toronto), M.St. (University of Oxford), M.A. (University of Oklahoma), B.A. (Oklahoma Baptist University), Assistant Professor, 2020.
Senor, Thomas D., Ph.D., M.A. (University of Arizona), B.S. (University of Oregon), Professor, 1989, 2012.
Stevens, Christopher W., Ph.D. (University of Maryland College Park), M.A. (City University of New York-The Graduate Center), B.A. (Humboldt State University), Instructor, 2015.
Ward, Barry M., Ph.D. (Rutgers State University-New Brunswick), M.Sc., B.A.Mod. (Trinity College, Dublin), Professor, 2002, 2022.

## Courses

PHIL 1003. Critical Reasoning: Discovery, Deduction, and Intellectual SelfDefense. 3 Hours.
This is a practical, "hands-on" course in sound reasoning, critical thinking, and the careful evaluation of evidence and argument. The course will utilize a range of realworld sources (television, Internet, magazines, etc.) and will be informed in content and method by the psychology of human judgment. (Typically offered: Irregular)
PHIL 2003. Introduction to Philosophy (ACTS Equivalency = PHIL 1103). 3 Hours.
An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. (Typically offered: Fall, Spring and Summer)
PHIL 2003C. Introduction to Philosophy. 3 Hours.
An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. Corequisite: Drill component. (Typically offered: Fall and Spring)
This course is equivalent to PHIL 2003.

## PHIL 2003H. Honors Introduction to Philosophy. 3 Hours.

An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. (Typically offered: Fall, Spring and Summer)
This course is equivalent to PHIL 2003.
PHIL 2103. Introduction to Ethics (ACTS Equivalency = PHIL 1003). 3 Hours. Basic concepts of moral philosophy, including historical and contemporary literature concerned with such issues as ethical relativism vs. objectivism, duty, happiness, freedom of the will and responsibility, facts and values, individual liberty and society. Application of theories to substantive questions. (Typically offered: Fall, Spring and Summer)

PHIL 2103C. Introduction to Ethics (ACTS Equivalency = PHIL 1003). 3 Hours. Basic concepts of moral philosophy, including historical and contemporary literature concerned with such issues as ethical relativism vs. objectivism, duty, happiness, freedom of the will and responsibility, facts and values, individual liberty and society. Application of theories to substantive questions. Corequisite: Drill component. (Typically offered: Irregular)
This course is equivalent to PHIL 2103.
PHIL 2203. Logic (ACTS Equivalency = PHIL 1003). 3 Hours.
Traditional and modern methods of deductive and inductive inference. (Typically offered: Fall, Spring and Summer)
PHIL 2203C. Logic (ACTS Equivalency = PHIL 1003). 3 Hours.
Traditional and modern methods of deductive and inductive inference. Corequisite: Drill Component. (Typically offered: Fall and Spring)
This course is equivalent to PHIL 2203.

## PHIL 2303. Human Nature and the Meaning of Life. 3 Hours.

Examination of important views on human nature, the meaning of human existence, the value and significance of different human activities and projects, and on what philosophy, religion, art, and literature have to teach us on these topics. Reading may be drawn from a variety of philosophical, literary, and religious writings. (Typically offered: Irregular)

## PHIL 2503. Philosophical Explorations. 3 Hours.

Explores topics in philosophy that are not currently covered in lower-level philosophy courses. (Typically offered: Irregular)

PHIL 3103. Ethics and the Professions. 3 Hours.
After a survey of the standard theories of moral obligation, justice, and rights, the course focuses on specific moral problems that arise within engineering, business, and the professions. (Typically offered: Fall, Spring and Summer)

PHIL 3113. Environmental Ethics. 3 Hours.
The course addresses ethical questions about nature and the natural environment. Topics of discussion include anthropocentric and biocentric ethics, population control, obligations to future generations, animal rights, moral considerability, Leopold's land ethic, deep ecology, and ecofeminism. (Typically offered: Irregular) This course is cross-listed with ENSC 3933.

## PHIL 3123. Bioethics. 3 Hours.

This course examines ethical dilemmas that arise in biological research, medical research, medical practice, and healthcare policy. Topics may include such things as abortion, assisted reproduction, cloning \& genetic engineering, assisted suicide \& voluntary euthanasia, organ donation, research ethics, patient autonomy, and healthcare policy. (Typically offered: Irregular)
PHIL 3203. Philosophy and the Christian Faith. 3 Hours.
This course will deal with philosophical issues that arise in Christian theology. Topics to be discussed may include the doctrines of the Incarnation, the Trinity, Atonement, and Hell, as well as the nature of God and the relationship between faith and reason. (Typically offered: Irregular)

## PHIL 3443. Animal Minds. 3 Hours.

This course explores questions about thinking, consciousness, emotion, and communication in non-human animals; about the differences between human and non-human animals; and about implications for our treatment of animals. (Typically offered: Irregular)
PHIL 390V. Readings. 1-6 Hour.
Readings on topics of research interested or those not typically offered in regular classes, by arrangement with Professor. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

PHIL 3923H. Honors Colloquium. 3 Hours.
Treats a special topic of issue offered as part of the honors program. Prerequisite: honors candidacy (not restricted to candidacy in philosophy). (Typically offered: Irregular) May be repeated for degree credit.

PHIL 3943. Philosophy and Physics. 3 Hours.
Examination of the metaphysical and epistemological implications of specific physical theories with an emphasis on twentieth-century physics. Topics covered may include the nature of space and time (particularly as described in relativity theory), the nature of the quantum mechanical world, and the temporal asymmetries found in thermodynamics and other areas of physics. (Typically offered: Irregular)

PHIL 399VH. Honors Course. 1-6 Hour.
Honors thesis research and writing under the direction of a faculty member in the department. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

## PHIL 4003. Ancient Greek Philosophy. 3 Hours.

Pre-Socratics, Socrates, Plato, and Aristotle. Prerequisite: 3 hours of philosophy. (Typically offered: Fall)

## PHIL 4033. Modern Philosophy-17th and 18th Centuries. 3 Hours.

British and Continental philosophy, including Bacon, Descartes, Spinoza, Leibniz, Hobbes, Locke, Berkeley, Hume, and Kant. (Typically offered: Spring)

## PHIL 4093. Special Topics in Philosophy. 3 Hours.

This course will cover subject matter not covered in regularly offered courses. Course cannot be repeated when the topic is the same as one in which the student is previously enrolled. (Typically offered: Irregular) May be repeated for degree credit.

## PHIL 4093H. Honors Special Topics in Philosophy. 3 Hours.

This course will cover subject matter not covered in regularly offered courses. Course cannot be repeated when the topic is the same as one in which the student is previously enrolled. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to PHIL 4093.

## PHIL 4103. Modern Jewish Thought. 3 Hours.

A survey of the main trends in Jewish thought from the seventeenth through the nineteenth century. (Typically offered: Irregular)
This course is cross-listed with JWST 4003.

## PHIL 4113. Social and Political Philosophy. 3 Hours.

Selected philosophical theories of society, the state, social justice, and their connections with individuals. (Typically offered: Irregular)

## PHIL 4123. Classical Ethical Theory. 3 Hours.

Study of classical texts in the history of philosophical ethics from Plato to Nietzsche. Philosophers covered may include Plato, Aristotle, Butler, Hume, Kant, and Mill. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

## PHIL 4133. Contemporary Ethical Theory. 3 Hours.

A study of contemporary texts in philosophical ethics from G.E. Moore to the present. Philosophers covered may include Moore, Stevenson, Hare, Foot, and Rawls. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

## PHIL 4143. Philosophy of Law. 3 Hours.

A philosophical consideration of the nature of law, theory of adjudication, concepts of legal responsibility, liberty and the limits of law, and selected moral-legal issues (abortion, affirmative action, punishment, etc.). (Typically offered: Irregular)

## PHIL 4193. Existentialism. 3 Hours.

Explores texts by major existentialist philosophers including Kierkegaard, Nietzsche, Heidegger, Sartre, and relevant literary works. Topics may include critiques of traditional views of human nature, the self, the meaning of life and existing authentically. (Typically offered: Irregular)
PHIL 4203. Theory of Knowledge. 3 Hours.
An examination of skepticism, the nature and structures of knowledge and epistemic justification, human rationality, and the justification of religious belief. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

## PHIL 4213. Philosophy of Science. 3 Hours.

Examination of issues related to scientific explanation, empirical foundations of science, observation and objectivity, nature of laws and theories, realism and instrumentalism, induction and confirmation, models, causation, and simplicity, beginning with historical survey set in the context of the history of science but emphasizing works from the 1930s to the current period, often including issues in recent physics. (Typically offered: Irregular)

PHIL 4233. Philosophy of Language. 3 Hours.
A survey of mainstream philosophical theories of meaning, reference, truth, and logical form. Attention given to the views of such figures as Frege, Russell, Tarski, Searie, Dumett, and the advocates of possible world's semantics. (Typically offered: Irregular)

## PHIL 4253. Symbolic Logic I. 3 Hours.

Rigorous analyses of the concepts of proof, consistency, equivalence, validity, implication, and truth. Full coverage of truth-functional logic and quantification theory (predicate calculus). Discussion of the nature and limits of mechanical procedures (algorithms) for proving theorems in logic and mathematics. Informal accounts of the basic facts about infinite sets. Prerequisite: PHIL 2203 or MATH 2603. (Typically offered: Fall)
This course is cross-listed with MATH 4253.

## PHIL 4303. Philosophy of Religion. 3 Hours.

Types of religious belief and critical examination of their possible validity, including traditional arguments and contemporary questions of meaning. (Typically offered: Irregular)

## PHIL 4313. Contemporary Jewish Thought. 3 Hours.

A survey of trends in Jewish thought in the twentieth and twenty-first centuries, focusing on the ways in which Jewish thinkers have responded to the events affecting Jews and the conditions of Jewish life from approximately 1900 to the present. (Typically offered: Irregular)
This course is cross-listed with JWST 4013.

## PHIL 4323. Philosophy of Race and Gender. 3 Hours.

Examines the metaphysical, ethical, aesthetic, political, and legal dimensions of race and gender. Topics include theories of race and gender, Latinx feminism, the ethics of racist humor and removing historical monuments, misogyny and misandry, transgender and nonbinary identities, and the role of self-interpretation in sexual orientation. (Typically offered: Irregular)

## PHIL 4333. Feminist Philosophy. 3 Hours.

Explores feminist contributions in traditional philosophical areas such as ethics, political philosophy, and epistemology. Topics include feminist analyses of the family, pornography, sexual harassment, violence against women, and race relations; and ways different schools of feminist thought describe women's oppression, its causes, and resistance to it. (Typically offered: Irregular)

## PHIL 4403. Philosophy of Art. 3 Hours.

Varieties of truth and value in the arts and aesthetic experience, focusing on the creative process in the art and in other human activities. (Typically offered: Spring)

## PHIL 4423. Philosophy of Mind. 3 Hours.

An examination of such topics such as the relationship between mind and body, the mentality of machines, knowledge of other minds, the nature of psychological explanation, the relationships between psychology and the other sciences, mental representation, the nature of the self, and free will and determinism. (Typically offered: Irregular)

## PHIL 4433. Philosophy of Psychology. 3 Hours.

Explores philosophical issues concerning the domain, foundations and methodology of psychology, and the relation of psychological explanations to other scientific and philosophical investigations of the mind. Topics include cognitive architecture and the evolution of minds, extended or embodied cognition, perception and introspection, consciousness and attention, social cognition, thought and language. (Typically offered: Irregular)
This course is cross-listed with PSYC 4433.

## PHIL 4603. Metaphysics. 3 Hours.

Theory and critical analysis of such basic metaphysical problems as mind and body, universals and particulars, space and time, determinism and free will, self-identity and individualism, with emphasis on contemporary perspectives. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

PHIL 4983. Capstone Course for Philosophy Majors. 3 Hours.
An undergraduate seminar to be taken in the student's final spring semester. The content will vary with the instructor. The objective is for the student to sharpen his or her philosophical skills by, e.g., writing short papers, giving class presentations, and writing a substantial final essay. Prerequisite: 21 hours of philosophy. (Typically offered: Spring)

## Physics (PHYS)

William Oliver
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479-575-7932
physics@uark.edu
Department of Physics Website (https://fulbright.uark.edu/departments/ physics/)

The Department of Physics offers two undergraduate majors, one leading to a Bachelor of Science degree in physics and a second leading to a Bachelor of Arts degree in physics.

Physicists ask questions and try to find answers to almost everything. If you have wondered about rainbows, thunderstorms, why stars shine, the colors of beetles, why curve balls curve, how the universe began, or how quarks and leptons interact - if you like to explore and figure out why things are the way they are - you might want to become a physicist.

The Bachelor of Science degree program is designed for students interested in professional employment or who want to pursue graduate work in physics or closely related fields such as astronomy, engineering, laser technology, or computational science. It offers the option of one of seven concentrations.

The Bachelor of Arts degree program provides a broad background in the physics and technology of today and tomorrow. Training in physics provides students with a unique background, the usefulness of which transcends the boundaries of the professional disciplines.

In our increasingly technological society, scientific literacy is ever more important for the successful employee. Physics, the most fundamental science, gives students the fascination of studying the deepest principles of the universe while preparing them for a wide range of practical employment.

For information on advanced degrees in physics, see the Graduate School Catalog (http://catalog.uark.edu/graduatecatalog/programsofstudy/ physicsphys/).

## Requirement for B.S. Degree with a Major in Physics

University and College Requirements for a Bachelor of Science in Physics: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the University/ state minimum core (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/)requirements.

| University/State Minimum Core |  |  |
| :--- | :--- | :--- |
| Students must complete the following: |  |  |
| PHYS 2054 | University Physics I (ACTS Equivalency = <br> PHYS 2034) | 45 |
| PHYS 2074 | University Physics II (ACTS Equivalency = <br> PHYS 2044 Lecture) | 4 |
| PHYS 2094 | University Physics III | 4 |
| PHYS 3453 | Electromagnetic Theory I | 3 |
| PHYS 3613 | Modern Physics | 3 |
| PHYS 4073 | Introduction to Quantum Mechanics | 3 |
| PHYS 4991 | Physics Senior Seminar 1 | 3 |
| Mathematics Courses: | 1 |  |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| MATH 2574 | Calculus III (ACTS Equivalency = MATH 2603) | 4 |
| MATH 2584 | Elementary Differential Equations | 4 |
| MATH 3083 | Linear Algebra ${ }^{2}$ | 4 |

## Additional Science

At least 8 hours of other science chosen from:
CHEM 1103 University Chemistry I (ACTS Equivalency = \& CHEM 1101LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)
CHEM 1123 University Chemistry II (ACTS Equivalency = \& CHEM 1121LCHEM 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
CSCE 2004 Programming Foundations I
CSCE 2014 Programming Foundations II
BIOL 1543 Principles of Biology (ACTS Equivalency $=$ BIOL
\& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS Equivalency = GEOL
\& GEOS 1111L1114 Lecture)
and Physical Geology Laboratory (ACTS
Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency = GEOL 1124
\& GEOS 1131LLecture)
and Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)
Concentration Requirements
16-24

Physics B.S. majors must complete all the requirements for one of seven available concentration areas. All concentrations consist of 16 credit hours with the exception of the Geophysics concentration, which requires 24.
University Residency Requirement Electives (See Degree Completion 1 Program Policy)
General Electives 11-19

Total Hours
1 Majors must propose participation in a research experience project no later than the end of their junior year of study. A written report of the results must be submitted during Senior Seminar (PHYS 4991).
${ }^{2}$ CSCE 3513, CSCE 4423, MEEG 2703, or GEOS 4223 can be substituted for MATH 3083 with the adviser's approval.

## Astronomy Concentration

| PHYS $3544 \quad$ Optics | 4 |
| :--- | :---: | :---: |
| 6 semester hours of ASTR courses numbered 3000 or above | 6 |
| (ASTR 4033, ASTR 4043, ASTR 4073, ASTR 4083) |  |
| 6 additional hours numbered 3000 and above in physics or astronomy | 6 |
| Total Hours | $\mathbf{1 6}$ |

Writing Requirement: Students majoring in physics may satisfy the Fulbright College writing requirement by means of a senior thesis (PHYS 498 V ), an honors thesis submitted in fulfillment of the requirements of the honors program (), or by means of a paper submitted as part of PHYS 4991 or any physics or astronomy course numbered 3000 or above. Students electing the last route must obtain approval of the instructor during the first three weeks of the semester. The research/ analytical paper should demonstrate competency in the use of word processing software and also at least one computer analytical tool such as a spreadsheet, mathematical or graphics program, or an original program written by the student.

Assessment of Student Learning: In accordance with state, University, and college requirements, all students must have learning assessed before graduation. Students majoring in physics will be assessed in the course PHYS 4991, which must be taken in the year prior to graduation.

## Physics B.S. with Astronomy Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

University/state minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic advisor.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 4 |  |
| MATH 2554 Calculus I (ACTS Equivalency |  |  |
| $=$ MATH 2405) (Satisfies General Education |  |  |
| Outcome 2.1) |  |  |

PHYS 2054 University Physics I (ACTS
Equivalency = PHYS 2034) (Satisfies General Education Outcome 3.4)
Fine Arts State Minimum Core (Satisfies General
Education Outcome 3.1) ${ }^{2}$
General Electives
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
PHYS 2074 University Physics II (ACTS
Equivalency = PHYS 2044 Lecture) (Satisfies
General Education Outcome 3.4)
Humanities State Minimum Core (Select a course which satisfies both General Education Outcomes 3.2 and 5.1$)^{3}$

General Electives
Year Total:

| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) | 4 |  |
| PHYS 2094 University Physics III | 4 |  |
| Select one of the following four-hour science lecture/lab combinations: | 4 |  |
| CHEM 1103 University Chemistry I (ACTS <br> Equivalency = CHEM 1414 Lecture) <br> \& CHEM 1101L University Chemistry I <br> Laboratory (ACTS Equivalency = CHEM 1414 <br> Lab) |  |  |
| CHEM 1123 University Chemistry II (ACTS <br> Equivalency = CHEM 1424 Lecture) <br> \& CHEM 1121L University Chemistry II <br> Laboratory (ACTS Equivalency = CHEM 1424 <br> Lab) |  |  |
| CSCE 2004 Programming Foundations I CSCE 2014 Programming Foundations II |  |  |
| BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory <br> (ACTS Equivalency $=$ BIOL 1014 Lab) <br> or BIOL 1584 Biology for Majors (ACTS <br> Equivalency = BIOL 1014 Lecture) |  |  |
| GEOS 1113 Physical Geology (ACTS <br> Equivalency = GEOL 1114 Lecture) <br> \& GEOS 1111L Physical Geology Laboratory <br> (ACTS Equivalency = GEOL 1114 Lab) |  |  |
| GEOS 1133 Earth Science (ACTS Equivalency = GEOL 1124 Lecture) <br> \& GEOS 1131L Earth Science Laboratory <br> (ACTS Equivalency = GEOL 1124 Lab) |  |  |
| or an approved four credit hours of other laboratory-based courses from these departments. |  |  |

Spring

U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2)
MATH 2584 Elementary Differential Equations
PHYS 3613 Modern Physics
Select one of the following four-hour lecture/lab combinations
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) \& CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424
Lab)
CSCE 2004 Programming Foundations I
CSCE 2014 Programming Foundations II
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency $=$ BIOL 1014 Lab)
or BIOL 1584 Biology for Majors (ACTS
Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS
Equivalency = GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency $=$ GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency
= GEOL 1124 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
or an approved four credit hours of other laboratory-based courses from these departments.
Social Sciences State Minimum Core (Select a
course which satisfies both General Education
Outcomes 3.3 and 4.1) ${ }^{4}$
General Electives 1
Year Total: 15

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 3083 Linear Algebra | 3 |  |
| PHYS 3544 Optics | 4 |  |
| PHYS/ASTR course numbered 3000 or higher | 3 |  |
| Social Sciences State Minimum Core (Satisfies <br> General Education Outcome 3.3) |  |  |
| General Electives | 3 |  |

PHYS 3453 Electromagnetic Theory I 3
PHYS/ASTR course numbered 3000 or higher 3
Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3) ${ }^{5}$
General Electives 6
Year Total: 15

## Units

Spring


## Requirement for B.S. Degree with a Major in Physics

## University and College Requirements for a Bachelor of Science

 in Physics: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the University/ state minimum core (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/)requirements.University/State Minimum Core ..... 35
Students must complete the following:
PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034)

| PHYS 2074 | University Physics II (ACTS Equivalency = PHYS 2044 Lecture) | 4 |
| :---: | :---: | :---: |
| PHYS 2094 | University Physics III | 4 |
| PHYS 3453 | Electromagnetic Theory I | 3 |
| PHYS 3613 | Modern Physics | 3 |
| PHYS 4073 | Introduction to Quantum Mechanics | 3 |
| PHYS 4991 | Physics Senior Seminar ${ }^{1}$ | 1 |
| Mathematics Courses: |  |  |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| MATH 2574 | Calculus III (ACTS Equivalency $=$ MATH 2603) | 4 |
| MATH 2584 | Elementary Differential Equations | 4 |
| MATH 3083 | Linear Algebra ${ }^{2}$ | 3 |
| Additional Science |  |  |
| At least 8 hours of other science chosen from: |  | 8 |
| CHEM 1103 University Chemistry I (ACTS Equivalency $=$ \& CHEM 1101LCHEM 1414 Lecture) <br> and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) |  |  |
| CHEM 1123 University Chemistry II (ACTS Equivalency = \& CHEM 1121LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) |  |  |
| CSCE 2004 | Programming Foundations I |  |
| CSCE 2014 | Programming Foundations II |  |
| BIOL 1543 <br> \& BIOL 1541L | ```Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)``` |  |
| BIOL 1584 | $\begin{aligned} & \text { Biology for Majors (ACTS Equivalency }=\text { BIOL } \\ & 1014 \text { Lecture) } \end{aligned}$ |  |
| GEOS 1113 <br> \& GEOS 1111L | ```Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)``` |  |
| GEOS 1133 <br> \& GEOS 1131L | ```Earth Science (ACTS Equivalency = GEOL }112 Lecture) and Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)``` |  |
| Concentration Req | quirements |  |
| Physics B.S. m one of seven ava consist of 16 c concentration, | majors must complete all the requirements for vailable concentration areas. All concentrations redit hours with the exception of the Geophysics which requires 24. |  |
| University Residen Program Policy) | ncy Requirement Electives (See Degree Completion |  |
| General Electives |  |  |
| Total Hours |  | 0 |
| 1 Majors must propose participation in a research experience project no later than the end of their junior year of study. A written report of the results must be submitted during Senior Seminar (PHYS 4991). <br> ${ }^{2}$ CSCE 3513, CSCE 4423, MEEG 2703, or GEOS 4223 can be substituted for MATH 3083 with the adviser's approval. |  |  |

Biophysics Concentration

| PHYS 4333 | Thermal Physics | 3 |
| :--- | :--- | ---: |
| PHYS 4613 | Introduction to Biophysics and Biophysical <br> Techniques | 3 |
| A Junior Level Laboratory Course chosen from PHYS 361VL, <br> PHYS 3544, or PHYS 3213 | $1-4$ |  |
| 6-9 semester hours numbered 3000 and above in physics, <br> astronomy, biology, and chemistry chosen with the adviser's <br> permission. | $6-9$ |  |

## Total Hours

Writing Requirement: Students majoring in physics may satisfy the Fulbright College writing requirement by means of a senior thesis (PHYS 498V), an honors thesis submitted in fulfillment of the requirements of the honors program (), or by means of a paper submitted as part of PHYS 4991 or any physics or astronomy course numbered 3000 or above. Students electing the last route must obtain approval of the instructor during the first three weeks of the semester. The research/ analytical paper should demonstrate competency in the use of word processing software and also at least one computer analytical tool such as a spreadsheet, mathematical or graphics program, or an original program written by the student.

Assessment of Student Learning: In accordance with state, University, and college requirements, all students must have learning assessed before graduation. Students majoring in physics will be assessed in the course PHYS 4991, which must be taken in the year prior to graduation.

## Physics B.S. with Biophysics Concentration Eight-Semester Degree Plan

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

University/state minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic advisor.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 4 |  |
| PHYS 2054 University Physics I (ACTS <br> Equivalency $=$ PHYS 2034) (Satisfies General Education Outcome 3.4) | 4 |  |
| Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{2}$ | 3 |  |
| General Electives | 1 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |

PHYS 2074 University Physics II (ACTS
Equivalency = PHYS 2044 Lecture) (Satisfies General Education Outcome 3.4)
Humanities State Minimum Core (Select a course which satisfies both General Education Outcomes 3.2 and 5.1$)^{3}$

General Electives
Year Total: 15

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 2574 Calculus III (ACTS Equivalency | 4 |  |
| MATH 2603) | 4 |  |
| PHYS 2094 University Physics III | 3 |  |
| U.S. History or Government State Minimum Core <br> (Satisfies General Education Outcome 4.2) | 4 |  |

Select one of the following
lecture/lab combinations:
lecture/lab combinations: ${ }^{4}$
CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I
Laboratory (ACTS Equivalency = CHEM 1414
Lab)
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424
Lab)
CSCE 2004 Programming Foundations I
CSCE 2014 Programming Foundations II
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1584 Biology for Majors (ACTS
Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS
Equivalency = GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency
= GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory
(ACTS Equivalency = GEOL 1124 Lab)
or an approved four credit hours of other laboratory-based courses from these departments.

Select one of the following four-hour science 4

CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I
Laboratory (ACTS Equivalency = CHEM 1414 Lab)

CHEM 1123 University Chemistry II (ACTS Equivalency $=$ CHEM 1424 Lecture) \& CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
CSCE 2004 Programming Foundations I
CSCE 2014 Programming Foundations II
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1584 Biology for Majors (ACTS
Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS
Equivalency $=$ GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency = GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory
(ACTS Equivalency = GEOL 1124 Lab)
or an approved four credit hours of other laboratory-based courses from these departments.
Social Sciences State Minimum Core (Select a course which satisfies both General Education Outcomes 3.3 and 4.1) ${ }^{5}$
General Electives
Year Total:

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 3083 Linear Algebra | 3 |  |
| A junior-level laboratory course chosen from PHYS 361VL, PHYS 3544, or PHYS 3213 | 1-4 |  |
| PHYS, ASTR, BIOL, or CHEM course numbered 3000 or higher | 3 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{6}$ | 3 |  |
| General Electives | 2-5 |  |
| PHYS 3453 Electromagnetic Theory I |  | 3 |
| PHYS 4333 Thermal Physics |  | 3 |
| PHYS, ASTR, BIOL, or CHEM course numbered 3000 or higher |  | 3 |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{6}$ |  | 3 |
| General Electives |  | 3 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| PHYS 4073 Introduction to Quantum Mechanics | 3 |  |
| PHYS, ASTR, BIOL, or CHEM course numbered 3000 or higher (if needed). Otherwise, take General Electives. | 3 |  |
| University Residency Requirement Electives | 1 |  |

General Electives
8
PHYS 4991 Physics Senior Seminar (Satisfies
General Education Outcomes 1.2 and 6.1)
PHYS 4613 Introduction to Biophysics and
Biophysical Techniques
General Electives
Year Total: 15 15

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
3 The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include:
CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103 C.
4 BIOL 1543/BIOL 1541L, CHEM 1103/CHEM 1101L, and CHEM 1123/CHEM 1121L are highly recommended as they serve as prerequisites for many higher-level BIOL and CHEM courses.

6 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include:
AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603,HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013,HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013,INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Requirement for B.S. Degree with a Major in Physics

University and College Requirements for a Bachelor of Science
in Physics: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the University/ state minimum core (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/)requirements.

| University/State Minimum Core <br> Students must complete the following: | 35 |  |
| :--- | :--- | :---: |
| PHYS 2054 | University Physics I (ACTS Equivalency = <br> PHYS 2034) | $\mathbf{4}$ |
| PHYS 2074 | University Physics II (ACTS Equivalency = <br> PHYS 2044 Lecture) | $\mathbf{4}$ |
| PHYS 2094 | University Physics III | 4 |
| PHYS 3453 | Electromagnetic Theory I | 3 |



(Select a course which satisfies both General Education Outcomes 3.2 and 5.1$)^{3}$
General Electives 1
Year Total: 15

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 2574 Calculus III (ACTS Equivalency = | 4 |  |
| MATH 2603) |  |  |
| PHYS 2094 University Physics III | 4 |  |
| Select one of the following four-hour science | 4 |  |
| lecture/lab combinations: |  |  |
| CHEM 1103 University Chemistry I (ACTS |  |  |
| Equivalency = CHEM 1414 Lecture) |  |  |
| \& CHEM 1101L University Chemistry I |  |  |
| Laboratory (ACTS Equivalency = CHEM 1414 |  |  |
| Lab) |  |  |
| CHEM 1123 University Chemistry II (ACTS |  |  |
| Equivalency = CHEM 1424 Lecture) |  |  |
| \& CHEM 1121L University Chemistry II |  |  |
| Laboratory (ACTS Equivalency = CHEM 1424 |  |  |
| Lab) |  |  |
| CSCE 2004 Programming Foundations I |  |  |
| CSCE 2014 Programming Foundations II |  |  |
| BIOL 1543 Principles of Biology (ACTS |  |  |
| Equivalency = BIOL 1014 Lecture) |  |  |
| \& BIOL 1541L Principles of Biology Laboratory |  |  |
| (ACTS Equivalency = BIOL 1014 Lab) |  |  |
| or BIOL 1584 Biology for Majors (ACTS |  |  |
| Equivalency = BIOL 1014 Lecture) |  |  |
| GEOS 1113 Physical Geology (ACTS |  |  |
| Equivalency = GEOL 1114 Lecture) |  |  |
| \& GEOS 1111L Physical Geology Laboratory |  |  |
| (ACTS Equivalency = GEOL 1114 Lab) |  |  |
| GEOS 1133 Earth Science (ACTS Equivalency |  |  |
| = GEOL 1124 Lecture) |  |  |
| \& GEOS 1131L Earth Science Laboratory |  |  |
| (ACTS Equivalency = GEOL 1124 Lab) |  |  |
| or an approved four credit hours of other |  |  |
| laboratory-based courses from these |  |  |
| departments. |  |  |
| U.S. History or Government - State Minimum Core |  |  |

U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2)
MATH 2584 Elementary Differential Equations PHYS 3613 Modern Physics
Select one of the following four-hour science lecture/lab combinations: ${ }^{4}$

CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency $=$ CHEM 1414 Lab)
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture) \& CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)

Units
Spring

Select one of the following four-hour science ecture/lab combinations: ${ }^{4}$

On CHEM 1101L Universty Chem Laboratory (ACTS Equivalency = CHEM 1414 ab Equivalency = CHEM 1424 Lecture) \& CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) CSCE 2014 Programming Foundations II BIOL 1543 Principles of Biology (ACTS Bual (ACTS Equivalency = BIOL 1014 Lab) or BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture) GEOS 1113 Physical Geology (ACTS \& GEOS 1111L Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab) GEOS 1133 Earth Science (ACTS Equivalency = GEOL 1124 Lecture) \& GEOS 1131L Earth Science Laboratory (ACTS Equivalency = GEOL 124 Lab) an approved four credit hours of other laboratory-based courses from these departments.

3

|  | Fourth Year |  | Units |
| :---: | :---: | :---: | :---: |
| 4 |  | Fall | Spring |
| 3 | PHYS 4073 Introduction to Quantum Mechanics | 3 |  |
| 4 | Any PHYS, ASTR, CSCE, or MATH course numbered 3000 or higher | 3 |  |
|  | University Residency Requirement Electives | 1 |  |
|  | General Electives | 8 |  |
|  | PHYS 4991 Physics Senior Seminar (Satisfies General Education Outcomes 1.2 and 6.1) |  | 1 |
|  | Any PHYS, ASTR, CSCE, or MATH course numbered 3000 or higher (if needed). Otherwise, take General Electives. |  | 3 |
|  | General Electives |  | 11 |
|  | Year Total: | 15 | 15 |


| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 3083 Linear Algebra | 3 |  |
| PHYS 3113 Analytical Mechanics | 3 |  |
| A junior-level laboratory course chosen from PHYS | $1-4$ |  |
| 361VL, PHYS 3544, or PHYS 3213 |  |  |
| Social Sciences State Minimum Core (Satisfies | 3 |  |

Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3) ${ }^{6}$
General Electives 2-5
PHYS 3453 Electromagnetic Theory I 3
Any PHYS, ASTR, CSCE, or MATH course 6
numbered 3000 or higher
Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3) ${ }^{6}$
General Electives 3
Year Total: 15

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003,LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
${ }^{4}$ CSCE 2004 and CSCE 2014 are highly recommended for students who plan to take additional computer science (CSCE) courses.
5 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
6 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603,HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Requirement for B.S. Degree with a Major in Physics

## University and College Requirements for a Bachelor of Science

 in Physics: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the University/ state minimum core (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/)requirements.| University/State Minimum Core |  |  |
| :--- | :--- | :--- |
| Students must complete the following: |  |  |
| PHYS 2054 | University Physics I (ACTS Equivalency = <br> PHYS 2034) | $\mathbf{4 5}$ |
| PHYS 2074 | University Physics II (ACTS Equivalency = <br> PHYS 2044 Lecture) | 4 |
| PHYS 2094 | University Physics III | 4 |
| PHYS 3453 | Electromagnetic Theory I | 3 |
| PHYS 3613 | Modern Physics | 3 |
| PHYS 4073 | Introduction to Quantum Mechanics | 3 |
| PHYS 4991 | Physics Senior Seminar 1 | 3 |
| Mathematics Courses: | 1 |  |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |
| MATH 2574 | Calculus III (ACTS Equivalency = MATH 2603) | 4 |
| MATH 2584 | Elementary Differential Equations | 4 |
| MATH 3083 | Linear Algebra ${ }^{2}$ | 4 |

## Additional Science

```
At least 8 hours of other science chosen from:
    CHEM 1103 University Chemistry I (ACTS Equivalency =
    & CHEM 1101LCHEM 1414 Lecture)
            and University Chemistry I Laboratory (ACTS
            Equivalency = CHEM 1414 Lab)
    CHEM 1123 University Chemistry II (ACTS Equivalency =
    & CHEM 1121LCHEM 1424 Lecture)
        and University Chemistry II Laboratory (ACTS
        Equivalency = CHEM 1424 Lab)
        CSCE 2004 Programming Foundations I
        CSCE 2014 Programming Foundations II
        BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL
        & BIOL 1541L }1014\mathrm{ Lecture)
        and Principles of Biology Laboratory (ACTS
        Equivalency = BIOL 1014 Lab)
        BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL
        1014 Lecture)
        GEOS 1113 Physical Geology (ACTS Equivalency = GEOL
        & GEOS 1111L1114 Lecture)
        and Physical Geology Laboratory (ACTS
        Equivalency = GEOL 1114 Lab)
        GEOS 1133 Earth Science (ACTS Equivalency = GEOL 1124
        & GEOS 1131LLecture)
        and Earth Science Laboratory (ACTS Equivalency
        = GEOL 1124 Lab)
```

Concentration Requirements

Physics B.S. majors must complete all the requirements for one of seven available concentration areas. All concentrations consist of 16 credit hours with the exception of the Geophysics concentration, which requires 24.
University Residency Requirement Electives (See Degree Completion 1 Program Policy)
General Electives
11-19

## Total Hours

1 Majors must propose participation in a research experience project no later than the end of their junior year of study. A written report of the results must be submitted during Senior Seminar (PHYS 4991).
${ }^{2}$ CSCE 3513, CSCE 4423, MEEG 2703, or GEOS 4223 can be substituted for MATH 3083 with the adviser's approval.

## Electronics Concentration

| PHYS 3213 | Electronics in Experimental Physics (also fulfills <br> Junior Laboratory requirement) | 3 |
| :--- | :--- | ---: |
| PHYS 4333 | Thermal Physics |  |

Total Hours 16

Writing Requirement: Students majoring in physics may satisfy the Fulbright College writing requirement by means of a senior thesis (PHYS 498V), an honors thesis submitted in fulfillment of the requirements of the honors program (), or by means of a paper submitted as part of PHYS 4991 or any physics or astronomy course numbered 3000 or above. Students electing the last route must obtain approval of the instructor during the first three weeks of the semester. The research/ analytical paper should demonstrate competency in the use of word
processing software and also at least one computer analytical tool such as a spreadsheet, mathematical or graphics program, or an original program written by the student.

Assessment of Student Learning: In accordance with state, University, and college requirements, all students must have learning assessed before graduation. Students majoring in physics will be assessed in the course PHYS 4991, which must be taken in the year prior to graduation.

## Physics B.S. with Electronics Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

University/state minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic advisors.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 4 |  |
| PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) (Satisfies General Education Outcome 3.4) | 4 |  |
| Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{2}$ | 3 |  |
| General Electives | 1 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |
| PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture) (Satisfies General Education Outcome 3.4) |  | 4 |
| Humanities State Minimum Core (Select a course which satisfies General Education Outcomes 3.2 and 5.1) ${ }^{3}$ |  | 3 |
| General Electives |  | 1 |
| Year Total: | 15 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) | 4 |  |
| PHYS 2094 University Physics III | 4 |  |
| Select one of the following four-hour science lecture/lab combinations: | 4 |  |

CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I
Laboratory (ACTS Equivalency = CHEM 1414 Lab)

CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424
Lab)
CSCE 2004 Programming Foundations I
CSCE 2014 Programming Foundations II
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1584 Biology for Majors (ACTS
Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS
Equivalency = GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency
= GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory
(ACTS Equivalency = GEOL 1124 Lab)
or an approved four credit hours of other laboratory-based courses from these departments.
U.S. History or Government State Minimum Core
(Satisfies General Education Outcome 4.2)
MATH 2584 Elementary Differential Equations
PHYS 3213 Electronics in Experimental Physics
PHYS 3613 Modern Physics
Select one of the following four-hour science 4
lecture/lab combinations:
CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I
Laboratory (ACTS Equivalency = CHEM 1414
Lab)
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424
Lab)
CSCE 2004 Programming Foundations I
CSCE 2014 Programming Foundations II
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1584 Biology for Majors (ACTS
Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS
Equivalency = GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)

GEOS 1133 Earth Science (ACTS Equivalency
= GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory
(ACTS Equivalency = GEOL 1124 Lab)
or an approved four credit hours of other
laboratory-based courses from these
departments.
General Electives
Year Total:

| Third Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| MATH 3083 Linear Algebra | 3 |  |
| Any PHYS or ASTR course numbered 3000 or higher | 3 |  |
| Social Sciences State Minimum Core (Select a course which satisfies General Education Outcomes 3.3 and 4.1) ${ }^{4}$ | 3 |  |
| General Electives | 6 |  |
| PHYS 3453 Electromagnetic Theory I |  | 3 |
| PHYS 4333 Thermal Physics |  | 3 |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{5}$ |  | 3 |
| General Electives |  | 6 |
| Year Total: | 15 | 15 |


| Fourth Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| PHYS 4073 Introduction to Quantum Mechanics ${ }^{6,7}$ | 3 |  |
| Any PHYS or ASTR course numbered 3000 or higher | 4 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{5}$ | 3 |  |
| University Residency Requirement Electives | 1 |  |
| General Electives | 4 |  |
| PHYS 4991 Physics Senior Seminar (Satisfies General Education Outcomes 1.2 and 6.1$)^{6,7}$ |  | 1 |
| Any PHYS or ASTR course numbered 3000 or higher |  | 3 |
| General Electives |  | 11 |
| Year Total: | 15 | 15 |

Total Units in Sequence: 120
1 Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
3 The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include:
CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103 C.

4 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
5 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
6 Meets 40-hour advanced credit hour requirement. See College Academic Regulations.
7 Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations.
8 Any PHYS or ASTR classes numbered 3000 or above.

## Requirement for B.S. Degree with a Major in Physics

University and College Requirements for a Bachelor of Science in Physics: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the University/ state minimum core (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/)requirements.

| University/State Minimum Core | 35 |
| :--- | :--- |
| Students must complete the following: |  |

Students must complete the following:

| PHYS 2054 | University Physics I (ACTS Equivalency = <br> PHYS 2034) | $\mathbf{4}$ |
| :--- | :--- | :--- |
| PHYS 2074 | University Physics II (ACTS Equivalency = <br> PHYS 2044 Lecture) | $\mathbf{4}$ |
| PHYS 2094 | University Physics III | 4 |
| PHYS 3453 | Electromagnetic Theory I | 3 |
| PHYS 3613 | Modern Physics | 3 |
| PHYS 4073 | Introduction to Quantum Mechanics | 3 |
| PHYS 4991 | Physics Senior Seminar ${ }^{1}$ | 1 |

Mathematics Courses:
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) 4

MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) 4
MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) 4
MATH 2584 Elementary Differential Equations 4
MATH 3083 Linear Algebra ${ }^{2} 3$

## Additional Science

At least 8 hours of other science chosen from: 8
CHEM 1103 University Chemistry I (ACTS Equivalency =
\& CHEM 1101LCHEM 1414 Lecture)
and University Chemistry I Laboratory (ACTS
Equivalency = CHEM 1414 Lab)

| CHEM 1123 <br> \& CHEM 1121L | University Chemistry II (ACTS Equivalency = LCHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency $=$ CHEM 1424 Lab) |
| :---: | :---: |
| CSCE 2004 | Programming Foundations I |
| CSCE 2014 | Programming Foundations II |
| BIOL 1543 <br> \& BIOL 1541L | ```Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)``` |
| BIOL 1584 | $\begin{aligned} & \text { Biology for Majors (ACTS Equivalency = BIOL } \\ & 1014 \text { Lecture) } \end{aligned}$ |
| GEOS 1113 <br> \& GEOS 1111L | $\begin{aligned} & \text { Physical Geology (ACTS Equivalency = GEOL } \\ & \text { L1114 Lecture) } \\ & \text { and Physical Geology Laboratory (ACTS } \\ & \text { Equivalency = GEOL } 1114 \text { Lab) } \end{aligned}$ |
| GEOS 1133 <br> \& GEOS 1131L | ```Earth Science (ACTS Equivalency = GEOL 1124 Lecture) and Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)``` |

Concentration Requirements
Physics B.S. majors must complete all the requirements for one of seven available concentration areas. All concentrations consist of 16 credit hours with the exception of the Geophysics concentration, which requires 24.
University Residency Requirement Electives (See Degree Completion 1
Program Policy)
General Electives $\quad 11-19$

Total Hours
1 Majors must propose participation in a research experience project no later than the end of their junior year of study. A written report of the results must be submitted during Senior Seminar (PHYS 4991).
${ }^{2}$ CSCE 3513, CSCE 4423, MEEG 2703, or GEOS 4223 can be substituted for MATH 3083 with the adviser's approval.

## Geophysics Concentration

| PHYS 3113 | Analytical Mechanics |
| :--- | :--- |
| GEOS 1113 | Physical Geology (ACTS Equivalency = GEOL <br> \& GEOS 1111L |
|  | 1114 Lecture) <br> and Physical Geology Laboratory (ACTS <br> Equivalency = GEOL 1114 Lab) |
| GEOS 2313 | Mineralogy |
| GEOS 3413 | Sedimentary Geology |
| GEOS 3514 | Structural Geology |
| GEOS 4223 | Stratigraphy and Sedimentation |
| GEOS 4924 | Earth System History (ACTS Equivalency = PHSC <br> 1104) |
| Completion of GEOG 3383 Principles of Landscape Evolution <br> and GEOL 4666 Geology Field Camp in addition to the stated <br> requirements for a physics-geophysics major will enable a student to <br> complete the requirements for a double major in physics and geology. |  |

## Total Hours

24
requirements of the honors program (), or by means of a paper submitted as part of PHYS 4991 or any physics or astronomy course numbered 3000 or above. Students electing the last route must obtain approval of the instructor during the first three weeks of the semester. The research/ analytical paper should demonstrate competency in the use of word processing software and also at least one computer analytical tool such as a spreadsheet, mathematical or graphics program, or an original program written by the student.

Assessment of Student Learning: In accordance with state, University, and college requirements, all students must have learning assessed before graduation. Students majoring in physics will be assessed in the course PHYS 4991, which must be taken in the year prior to graduation.

## Physics B.S. Geophysics Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area. Students should consult their advisers.

| First Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| ENGL 1013 Composition I (ACTS | 3 |  |  |
| Equivalency = ENGL 1013) (Satisfies |  |  |  |
| General Education Outcome 1.1) |  |  |  |
| MATH 2554 Calculus I (ACTS | 4 |  |  |
| Equivalency = MATH 2405) (Satisfies |  |  |  |
| General Education Outcome 2.1) ${ }^{1,2}$ |  |  |  |
| PHYS 2054 University Physics I (ACTS | 4 |  |  |
| Equivalency $=$ PHYS 2034) (Satisfies |  |  |  |
| General Education Outcome 3.4) ${ }^{1}$ |  |  |  |
| (ACTS Equivalency = CHEM 1414 |  |  |  |
| Lecture) |  |  |  |
| \& CHEM 1101L University Chemistry I |  |  |  |
| Laboratory (ACTS Equivalency = CHEM |  |  |  |
| ENGL 1023 Composition II (ACTS |  | 3 |  |
| Equivalency = ENGL 1023) (Satisfies |  |  |  |
| General Education Outcome 1.1) |  |  |  |
| PHYS 2074 University Physics II (ACTS |  | 4 |  |
| Equivalency = PHYS 2044 Lecture) (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  |  |  |
|  |  |  |  |
| Equivalency = MATH 2505) ${ }^{1}$ a |  |  |  |
|  |  |  |  |
| GEOS 1113 Physical Geology (ACTS |  |  |  |
| Equivalency = GEOL 1114 Lecture) |  |  |  |
| \& GEOS 1111L Physical Geology |  |  |  |
| Laboratory (ACTS Equivalency = GEOL |  |  |  |
| 1114 Lab) |  |  |  |
| Year Total: | 15 | 15 |  |


| Second Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| PHYS 2094 University Physics III ${ }^{1}$ | 4 |  |  |
| MATH 2584 Elementary Differential Equations ${ }^{1,3}$ | 4 |  |  |
| CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) | 4 |  |  |
| \& CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency $=$ CHEM 1424 Lab) |  |  |  |
| GEOS 2313 Mineralogy | 3 |  |  |
| PHYS 3613 Modern Physics ${ }^{1,3}$ |  | 3 |  |
| MATH 2574 Calculus III (ACTS Equivalency $=$ MATH 2603 $)^{1,3}$ |  | 4 |  |
| GEOS 3413 Sedimentary Geology |  | 3 |  |
| State Minimum Core Social Sciences Requirement (Select a course which satisfies both General Education Outcomes 3.3 and 4.1) ${ }^{4}$ |  | 3 |  |
| General Elective |  | 1 |  |
| Year Total: | 15 | 14 |  |
| Third Year | Units |  |  |
|  | Fall | Spring | Summer |
| PHYS 3113 Analytical Mechanics ${ }^{3}$ | 3 |  |  |
| GEOS 4223 Stratigraphy and Sedimentation | 3 |  |  |
| GEOS 3383 | 3 |  |  |
| State Minimum Core History or Government Requirement (Satisfies General Education Outcome 4.2) | 3 |  |  |
| State Minnimum Core Social Sciences Requirement (Satisfies General Education Outcome 3.3) ${ }^{5}$ | 3 |  |  |
| GEOS 3514 Structural Geology |  | 4 |  |
| State Minimum Core Social Sciences <br> Requirement (Satisfies General Education Outcome 3.3) ${ }^{5}$ |  | 3 |  |
| General Electives |  | 6 |  |
| GEOS 4686 Geology Field Camp ${ }^{3}$ |  |  | 6 |
| Year Total: | 15 | 13 | 6 |


| Fourth Year | Fall | Units <br> Spring <br> Summer |  |
| :--- | ---: | ---: | ---: |
| PHYS 4073 Introduction to Quantum | 3 |  |  |
| Mechanics | 3 |  |  |
| GEOS 4433 Geophysics | 3 |  |  |
| State Minimum Core Humanities or Fine <br> Arts requirement (as needed) (Select <br> a course which satisfies both General |  |  |  |
| Education Outcomes 3.2 and 5.1 or <br> satisfies 3.1) 6,7 <br> General Electives | 3 | 3 |  |
| PHYS 3453 Electromagnetic Theory 1 ${ }^{3}$ |  | 3 |  |

PHYS 4991 Physics Senior Seminar 1 (Satisfies General Education Outcomes 1.2 and 6.1$)^{3}$

GEOS 4924 Earth System History 4
(ACTS Equivalency = PHSC 1104)
State Minimum Core Fine Arts or 3
Humanities Requirement (as needed)
(Satisfies General Education Outcome
3.1 or select a course which satisfies
both 3.2 and 5.1$)^{7,6}$
General Electives 4
Year Total: $12 \quad 15$

## Total Units in Sequence:

120
${ }^{1}$ Meets 40 -hour advanced credit hour requirement. See College Academic Regulations.
${ }^{2}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
3 Meets 24-hour rule ( 24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40 -hour rule. See College Academic Regulations.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
5 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
6 The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
${ }^{7}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.

## Requirement for B.S. Degree with a Major in Physics

University and College Requirements for a Bachelor of Science in Physics: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the University/ state minimum core (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/)requirements.

University/State Minimum Core
Students must complete the following:


PHYS 2074 University Physics II (ACTS
Equivalency = PHYS 2044 Lecture) (Satisfies General Education Outcome 3.4)
Humanities State Minimum Core (Select a course which satisfies both General Education Outcomes 3.2 and 5.1$)^{3}$

General Electives
Year Total: 15

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MATH 2574 Calculus III (ACTS Equivalency $=$ | 4 |  |
| MATH 2603) | 4 |  |
| PHYS 2094 University Physics III | 4 |  |

Spring

MATH 2603)

Select one of the following four-hour science 4 lecture/lab combinations:

CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) \& CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)
CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) \& CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
CSCE 2004 Programming Foundations I CSCE 2014 Programming Foundations II BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) \& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1584 Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) \& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency
= GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory
(ACTS Equivalency = GEOL 1124 Lab)
or an approved four credit hours of other laboratory-based courses from these departments.
U.S. History or Government State Minimum Core
(Satisfies General Education Outcome 4.2)
MATH 2584 Elementary Differential Equations
PHYS 3613 Modern Physics
Select one of the following four-hour science lecture/lab combinations:

CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) \& CHEM 1101L University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)

BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1584 Biology for Majors (ACTS
Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS
Equivalency $=$ GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency
= GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory
(ACTS Equivalency = GEOL 1124 Lab)
or an approved four credit hours of other laboratory-based courses from these departments.
Social Sciences State Minimum Core (Select a
course which satisfies both General Education
Outcomes 3.3 and 4.1) ${ }^{4}$
General Electives
Year Total: 15

| Third Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| MATH 3083 Linear Algebra | 3 |  |
| PHYS 3544 Optics | 4 |  |
| Any PHYS or ASTR course numbered 3000 or | 3 |  |
| higher | 3 |  |
| Social Sciences State Minimum Core (Satisfies <br> General Education Outcome 3.3) |  |  |
| General Electives | 2 |  |

PHYS 3453 Electromagnetic Theory I
Any PHYS or ASTR course numbered 3000 or 3
higher
Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3) ${ }^{5}$
General Electives
Year Total: 15
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424
Lab)
CSCE 2004 Programming Foundations I
CSCE 2014 Programming Foundations II
$\qquad$
rer

PHYS 4734 Introduction to Laser Physics or PHYS 4773 Introduction to Optical Properties of Materials
General Electives 10-11
Year Total:
15

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103 C .
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Requirement for B.S. Degree with a Major in Physics

University and College Requirements for a Bachelor of Science in Physics: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. Bolded courses from the course list below may be applied to portions of the University/ state minimum core (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/)requirements.

| University/State Minimum Core |  | 35 |
| :---: | :---: | :---: |
| Students must complete the following: |  |  |
| PHYS 2054 | University Physics I (ACTS Equivalency = PHYS 2034) | 4 |
| PHYS 2074 | University Physics II (ACTS Equivalency = PHYS 2044 Lecture) | 4 |
| PHYS 2094 | University Physics III | 4 |
| PHYS 3453 | Electromagnetic Theory I | 3 |
| PHYS 3613 | Modern Physics | 3 |
| PHYS 4073 | Introduction to Quantum Mechanics | 3 |
| PHYS 4991 | Physics Senior Seminar ${ }^{1}$ | 1 |
| Mathematics Courses: |  |  |
| MATH 2554 | Calculus I (ACTS Equivalency = MATH 2405) | 4 |
| MATH 2564 | Calculus II (ACTS Equivalency = MATH 2505) | 4 |

Students must complete the following:


Concentration Requirements
Physics B.S. majors must complete all the requirements for one of seven available concentration areas. All concentrations consist of 16 credit hours with the exception of the Geophysics concentration, which requires 24.
University Residency Requirement Electives (See Degree Completion 1 Program Policy)
General Electives
Total Hours 120

1 Majors must propose participation in a research experience project no later than the end of their junior year of study. A written report of the results must be submitted during Senior Seminar (PHYS 4991).
2 CSCE 3513, CSCE 4423, MEEG 2703, or GEOS 4223 can be substituted for MATH 3083 with the adviser's approval.

## Professional Concentration

| PHYS 3113 | Analytical Mechanics | 3 |
| :--- | :--- | ---: |
| PHYS 4333 | Thermal Physics | 3 |
| A Junior Level Laboratory Course chosen from: | $1-4$ |  |
| PHYS 361 VL | Modern Physics Laboratory |  |
| PHYS 3544 | Optics |  |
| PHYS 3213 | Electronics in Experimental Physics |  |
| 6-9 semester hours numbered 3000 and above in physics or |  |  |
| astronomy. | $6-9$ |  |

Total Hours
16

Writing Requirement: Students majoring in physics may satisfy the Fulbright College writing requirement by means of a senior thesis (PHYS 498V), an honors thesis submitted in fulfillment of the requirements of the honors program (), or by means of a paper submitted as part of PHYS 4991 or any physics or astronomy course numbered 3000 or above. Students electing the last route must obtain approval of the instructor during the first three weeks of the semester. The research/ analytical paper should demonstrate competency in the use of word processing software and also at least one computer analytical tool such as a spreadsheet, mathematical or graphics program, or an original program written by the student.

Assessment of Student Learning: In accordance with state, University, and college requirements, all students must have learning assessed before graduation. Students majoring in physics will be assessed in the course PHYS 4991, which must be taken in the year prior to graduation.

## Physics B.S. with Professional Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

University/state minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic advisors.

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 4 |  |
| PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) (Satisfies General Education Outcome 3.4) | 4 |  |
| Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{2}$ | 3 |  |
| General Electives | 1 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) |  | 4 |
| PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture) (Satisfies General Education Outcome 3.4) |  | 4 |
| Humanities State Minimum Core (Select a course which satisfies both General Education Outcomes 3.2 and 5.1$)^{3}$ |  | 3 |
| General Electives |  | 1 |
| Year Total: | 15 | 15 |


MATH 2574 Calculus III (ACTS Equivalency = 4
ATH 2603)
Select one of the following science four-hour
lecture/lab combinations:
CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I
Laboratory (ACTS Equivalency = CHEM 1414
Lab)
CHEM 1123 University Chemistry II (ACTS
quivalency = CHEM 1424 Lecture)
Laboratory (ACTS Equivalency = CHEM 1424
Lab)
CSCE 2004 Programming Foundations I
CSCE 2014 Programming Foundations II
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equal
Equivalency = BIOL 1014 Lecture)
GEOS 1113 Physical Geology (ACTS
Equivalency = GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency
= GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory
(ACTS Equivalency = GEOL 1124 Lab)
an approved four credit hours of other

U.S. History or Government State Minimum Core
4
PHYS 3613 Modern Physics
3
Outcomes 3.3 and 4.1)
Select one of the following four-hour science
lecture/lab combinations:
CHEM 1103 University Chemistry I (ACTS
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I
Laboratory (ACTS Equivalency = CHEM 1414
Lab)
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II
Laboratory (ACTS Equivalency = CHEM 1424
Lab)
CSCE 2014 Programming Foundations II

BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
GEOS 1113 Physical Geology (ACTS
Equivalency = GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
GEOS 1133 Earth Science (ACTS Equivalency
= GEOL 1124 Lecture)
\& GEOS 1131L Earth Science Laboratory
(ACTS Equivalency = GEOL 1124 Lab)
or an approved four credit hours of other laboratory-based courses from these departments.

## General Electives

Year Total:
15
Third Year

PHYS 3113 Analytical Mechanics 3
A junior-level laboratory course chosen from PHYS
361VL, PHYS 3544, or PHYS 3213
Social Sciences State Minimum Core (Satisfies
3
General Education Outcome 3.3) ${ }^{5}$
General Electives
2-5
PHYS 3453 Electromagnetic Theory I
PHYS 4333 Thermal Physics
Any PHYS or ASTR course numbered 3000 or higher

Social Sciences State Minimum Core (Satisfies
General Education Outcome 3.3) ${ }^{5}$
General Electives
Year Total:
15

| Fourth Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| PHYS 4073 Introduction to Quantum Mechanics | 3 |  |
| Any PHYS or ASTR course numbered 3000 or <br> higher | 3 |  |
| General Electives | 9 |  |
| PHYS 4991 Physics Senior Seminar (Satisfies |  | 1 |

General Education Outcomes 1.2 and 6.1)
Any PHYS or ASTR course numbered 3000 or higher (if needed). Otherwise, take General Electives.
General Electives 11
Year Total: 15

## Total Units in Sequence:

120
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
${ }^{2}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Requirements for a B.A. Degree with a Major in Physics:

This track is for students desiring a broader program in the arts, sciences, and social sciences while majoring in physics. This program is recommended for pre-medical, journalism, pre-business, pre-law and other students planning careers in fields for which a physics education would be beneficial. For B.A. students seeking teaching licensure, see the Teacher Licensure Requirements below. This program requires a total of 120 semester hours. The student must present 24 semester hours in physics or astronomy, including:

| PHYS 2013 <br> \& PHYS 2011L | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` | 4 |
| :---: | :---: | :---: |
| PHYS 2033 <br> \& PHYS 2031L | ```College Physics II (ACTS Equivalency = PHYS 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)``` | 4 |
| PHYS 3603 <br> \& PHYS 360VL | Introduction to Modern Physics and Introduction to Modern Physics Laboratory | 4-6 |
| PHYS 4991 | Physics Senior Seminar | 1 |

1 Eleven semester hours chosen from any physics or astronomy 11 courses at the 3000 level or above.
3 The student must also present:

MATH 1284C | Precalculus Mathematics (ACTS Equivalency $=$ | 4 |
| :--- | :--- |
| MATH 1305) |  |

or MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)
or MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203)

MATH $2554 \quad$ Calculus I (ACTS Equivalency $=$ MATH 2405) 4
or MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203)
and two additional courses at the 2000 level or above in mathematics 6-8 or statistics

An additional 9 semester hours at the 3000-level or above must be taken from a single special emphasis area chosen with the adviser's approval. The special emphasis area may be chosen in any single degree-granting department at the University of Arkansas. For B.A. students seeking teacher licensure, the special emphasis area may involve courses from more than one degree-granting department at the University of Arkansas with the approval of their adviser.

## Total Hours

Writing Requirement: Students majoring in physics may satisfy the Fulbright College writing requirement by means of a senior thesis (PHYS 498 V ), an honors thesis submitted in fulfillment of the requirements of the honors program (), or by means of a paper submitted as part of PHYS 4991 or any physics or astronomy course numbered 3000 or above. Students electing the last route must obtain approval of the instructor during the first three weeks of the semester. The research/ analytical paper should demonstrate competency in the use of word processing software and also at least one computer analytical tool such as a spreadsheet, mathematical or graphics program, or an original program written by the student.

Assessment of Student Learning: In accordance with state, University, and college requirements, all students must have learning assessed before graduation. Students majoring in physics will be assessed in the course PHYS 4991, which must be taken in the year prior to graduation.

## Physics B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as the Fulbright College requirements. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

The Physics B.A. program includes requirements for a special emphasis area. In this case, journalism was used as an example. Journalism courses indicated below are recommended by the Department of Journalism as the foundation needed for science reporting. It is recommended that the free electives be chosen in a second science, or in journalism.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency = |  |  |
| ENGL 1013) <br> Select one of the following: <br> JOUR 1023 Media and Society (required for <br> journalism sequence) | 3 |  |
| $\quad$General Elective | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = <br> MATH 1103) <br> or MATH 1284C Precalculus Mathematics (ACTS | $3-4$ |  |
| Equivalency = MATH 1305) <br> University/State Core Fine Arts or Humanities or <br> US History requirement <br> General Elective | 3 | 3 |
| ENGL 1023 Composition II (ACTS Equivalency $=$ <br> ENGL 1023) | 3 | 3 |



| PHYS 360VL Introduction to Modern Physics |  | 1-3 |
| :---: | :---: | :---: |
| Laboratory |  |  |
| PHYS/ASTR Group A ${ }^{1,2}$ |  | 3 |
| Select one of the following: |  | 3 |
| JOUR 3013 Editing ${ }^{\text {1,2,3 }}$ |  |  |
| Other Special Emphasis Area ${ }^{4}$ |  |  |
| 3000+ Advanced Level Elective ${ }^{1}$ |  | 3 |
| General Electives |  | 6 |
| Year Total: | 15 | 16 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| PHYS/ASTR Group ${ }^{1,2}$ | 2-4 |  |
| PHYS/ASTR Group A ${ }^{1,2}$ | 3-4 |  |
| Fulbright College 3000+ Elective (as needed) ${ }^{1,2}$ | 3 |  |
| Advanced level elective ${ }^{1}$ | 6 |  |
| PHYS 4203 (or other PHYS/ASTR Group A) ${ }^{1,2}$ |  | 3 |
| PHYS 4991 Physics Senior Seminar ${ }^{1,2}$ |  | 1 |
| 3000+ Advanced level elective (as needed) or General Elective ${ }^{1}$ |  | 3 |
| General Electives (as needed to total 120 degree credits) |  | 6 |
| Year Total: | 14 | 13 |

## Total Units in Sequence:

| 1 | Meets 40-hour advanced credit hour requirement. See College <br> Academic Regulations. |
| :--- | :--- |
| 2 | Meets 24-hour rule (24 hours of 3000-4000 level courses in <br> Fulbright College), in addition to meeting the 40-hour rule. See |
| 4 | College Academic Regulations. <br> Required for journalism emphasis. |
| Additional 9 semester hours at 3000 level or above from a |  |
| single emphasis area chosen with adviser approval. This |  |
| requirement is automatically fulfilled by the bold-faced upper- |  |
| level journalism courses. |  |
| Eleven semester hours chosen from: Any PHYS or ASTR |  |
| classes numbered 3000 or above. |  |

Requirements for a Minor in Physics: Students wishing to obtain a minor in physics must take either:

Select one of the following:
8
Plus at least seven additional hours of physics courses numbered
3000 or above. 3000 or above.

Total Hours
A student must notify the department of his or her intent to minor.
Requirements for Departmental Honors in Physics: The Departmental Honors Program in Physics provides upper-division undergraduate students with an opportunity to formally participate in scholarly physics activities. Honors candidates carry out independent study and research under the guidance of the physics faculty and participate in special honors classes, seminars, and colloquia. Outstanding student achievement will be recognized by awarding the distinction "Physics Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies. In addition to satisfying the general college requirements for the bachelor's degree with honors, an honors candidate in physics must

1. Become a candidate no later than the first semester of the junior year of study,
2. Enroll in honors sections of physics courses when available,
3. Complete a minimum of 12 hours of honors coursework to include: Six hours of honors research PHYS 399VH and Three hours of physics honors colloquium PHYS 3923H,
4. Complete and orally defend an honors thesis based upon the project carried out in PHYS 399VH,
5. Achieve a cumulative grade-point average of 3.125 in physics, and
6. Maintain a 3.50 grade-point average overall.

## Physics Teacher Licensure Requirements:

Students interested in pursuing a minor in STEM Education or Secondary Teacher Licensure in mathematics, biology, chemistry, physics, or computer science at the undergraduate level should consult with a STEM Education faculty adviser, teach@uark.edu. Another option to obtain secondary teacher licensure is to complete the one-year Master of Arts in Teaching (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/ mathematicalsciencesmasc/graduatecatalog/programsofstudy/ teachereducation/).

## Faculty

Barraza-Lopez, Salvador, Ph.D. (University of Illinois-UrbanaChampaign), B.S. (Instituto Politecnico Nacional de Mexico), Associate Professor, 2011, 2016.
Bellaiche, Laurent, Ph.D., M.S., B.S. (University of Paris VI, France), Distinguished Professor, 1999, 2016.
Churchill, Hugh O.H., Ph.D., A.M. (Harvard University), B.A. (Oberlin College), B.M. (Oberlin Conservatory of Music), Associate Professor, 2015, 2021.
Fu, Huaxiang, Ph.D., M.S. (Fudan University), B.S. (University of Science and Technology of China), Professor, 2002, 2017.
Gea-Banacloche, Julio R., Ph.D. (University of New Mexico), Licenciado en Ciencias Fisicas (Universidad Autonoma de Madrid), Professor, 1989, 2000.

Harter, William G., Ph.D. (University of California-Irvine), B.S. (Hiram College), Professor, 1986.
Hu, Jin, Ph.D. (Tulane University), B.S. (University of Science and Technology of China), Assistant Professor, 2017.
Joffe Minor, Tacy Marie, Ph.D. (Northwestern University), M.A., B.S. (University of Arkansas), Teaching Assistant Professor, 2011, 2018.

Kennefick, Daniel John, Ph.D., M.A. (California Institute of Technology), B.S. (University College Cork, Ireland), Professor, 2003, 2021.

Kennefick, Julia Dusk, Ph.D. (California Institute of Technology), B.S. (University of Arkansas), Associate Professor, 2003, 2014.
Kumar, Pradeep, Ph.D. (Boston University), M.Sc. (Indian Institute of Technology, Mumbai, India), Associate Professor, 2013, 2019.
Leftwich, Matthew, Ph.D., M.S. and B.S. (University of Arkansas), M.B.A. (Webster University), Research Professor, 2021.
Lehmer, Bret Darby, Ph.D. (Pennsylvania State University), B.S.
(University of lowa), Associate Professor, 2015, 2021.
Li, Jiali, Ph.D., M.S. (The City College of the City University of New York), M.S. (University of Science and Technology of China), B.S. (Hei Long Jiang University), Professor, 2002, 2016.
Manasreh, Bothina H., Ph.D., M.Sc. (University of Jordan), Research Assistant Professor, 2017.
Nakamura, Hiroyuki, Ph.D., M.S., B.S. (University of Tokyo), Assistant Professor, 2019.
Oliver, William, Ph.D., M.S. (University of Colorado-Boulder), B.S. (University of Arizona), Associate Professor, 1992, 1998.
Prosandeev, Sergey, Ph.D., M.S. (Rostov State University), Research Professor, 2005, 2016.
Salamo, Gregory J., Ph.D. (City University of New York), M.S. (Indiana University-Purdue University-Indianapolis), B.S. (City University of New York, Brooklyn College), Distinguished Professor, 1975, 2005.
Shew, Woodrow L., Ph.D. (University of Maryland-College Park), B.A. (College of Wooster), Associate Professor, 2012, 2017.
Singh, Surendra P., Ph.D., M.A. (University of Rochester), M.Sc., B.Sc. (Banaras Hindu University, India), University Professor, 1982, 2016.
Skinner, Stephen R., M.S., B.S. (University of Arkansas), Instructor, 1998.

Snyder, Tamara D., M.S. (University of Arkansas), B.S. (University of California-Los Angeles), Teaching Assistant Professor, 2004.
Thibado, Paul M., Ph.D. (University of Pennsylvania), B.S. (San Diego State University), Professor, 1996, 2005.
Vyas, Reeta, Ph.D. (State University of New York at Buffalo), M.S., B.S. (Banaras Hindu University), Professor, 1984, 2002.
Wang, Yong, Ph.D., M.S. (University of California, Los Angeles), B.S. (University of Science and Technology of China), Assistant Professor, 2016.

Xiao, Min, Ph.D. (University of Texas at Austin), B.S. (Nanjing University), Distinguished Professor, 1990, 2004.

## Astronomy Courses

ASTR 2001L. Survey of the Universe Laboratory (ACTS Equivalency = PHSC 1204 Lab). 1 Hour.
Daytime and nighttime observing with telescopes and indoor exercises on selected
topics. Pre- or Corequisite: ASTR 2003. (Typically offered: Fall, Spring and Summer)

## ASTR 2001M. Honors Survey of the Universe Laboratory. 1 Hour.

An introduction to the content and fundamental properties of the cosmos. Topics include planets and other objects of the solar system, the sun, normal stars and interstellar medium, birth and death of stars, neutron stars, and black holes. Pre- or Corequisite: ASTR 2003 or ASTR 2003H. (Typically offered: Fall)
This course is equivalent to ASTR 2001L.
ASTR 2003. Survey of the Universe (ACTS Equivalency = PHSC 1204 Lecture). 3 Hours.
An introduction to the content and fundamental properties of the cosmos. Topics include planets and other objects of the solar system, the Sun, normal stars and interstellar medium, birth and death of stars, neutron stars, pulsars, black holes, the Galaxy, clusters of galaxies, and cosmology. Corequisite: ASTR 2001L or ASTR 2001M. (Typically offered: Fall, Spring and Summer)

ASTR 2003H. Honors Survey of the Universe. 3 Hours.
An introduction to the content and fundamental properties of the cosmos. Topics include planets and other objects of the solar system, the Sun, normal stars and interstellar medium, birth and death of stars, neutron stars, pulsars, black holes, the Galaxy, clusters of galaxies, and cosmology. Corequisite: ASTR 2001M. (Typically offered: Fall)
This course is equivalent to ASTR 2003.
ASTR 4033. Astrophysics I: Stars and Planetary Systems. 3 Hours.
An introduction to astrophysics covering stellar structure and evolution, the properties of the solar system, and extrasolar planetary systems. Prerequisite: PHYS 3613 or CHEM 3504. (Typically offered: Fall Odd Years)

ASTR 4043. Astrophysics II: Galaxies and the Large-Scale Universe. 3 Hours. An introduction to astrophysics covering the interstellar medium, the Milky Way galaxy, extragalactic astronomy, and introduction to cosmology. Prerequisite: ASTR 4033. (Typically offered: Spring Even Years)

ASTR 4073. Cosmology. 3 Hours.
An introduction to modern Big Bang cosmology. The course covers the origin, evolution, and structure of the Universe, based on the Theory of Relativity. Prerequisite: PHYS 3613 or CHEM 3504. (Typically offered: Spring Odd Years)
ASTR 4083. Data Analysis and Computing in Astronomy. 3 Hours.
Study of the statistical analysis of large data sets that are prevalent in the physical sciences with an emphasis on astronomical data and problems. Includes computational lab 1 hour per week. Corequisite: Lab component. Prerequisite: PHYS 3613. (Typically offered: Fall Even Years)

## Physics Courses

PHYS 1021L. Physics and Human Affairs Laboratory. 1 Hour.
Laboratory 2 hours per week. Pre- or Corequisite: PHYS 1023. (Typically offered: Fall, Spring and Summer)

PHYS 1021M. Honors Physics and Human Affairs Laboratory. 1 Hour.
Laboratory 2 hours per week. Pre- or Corequisite: PHYS 1023H. (Typically offered: Fall, Spring and Summer)
This course is equivalent to PHYS 1021L.

## PHYS 1023. Physics and Human Affairs. 3 Hours.

The great ideas of physics, together with their philosophical and social impact. Scientific topics include cosmology, relativity, quantum mechanics. Philosophical and social topics include methods and values of science, problems related to energy sources, and implications of modern weapons. Non-mathematical. Designed for non-science majors. Along with PHYS 1021L, can be used to satisfy a 4-year physical science requirement for a B.A. degree. Students who have received credit in PHYS 2013 and PHYS 2033, or PHYS 2054 and PHYS 2074 cannot also receive degree credit in this course. Corequisite: PHYS 1021L. (Typically offered: Fall, Spring and Summer)

## PHYS 1023H. Honors Physics and Human Affairs. 3 Hours.

The great ideas of physics, together with their philosophical and social impact. Scientific topics include cosmology, relativity, quantum mechanics. Philosophical and social topics include methods and values of science, problems related to energy sources, and implications of modern weapons. Non-mathematical. Designed for non-science majors. Along with PHYS 1021L, can be used to satisfy a 4-year physical science requirement for a B.A. degree. Students who have received credit in PHYS 2013 and PHYS 2033, or PHYS 2054 and PHYS 2074 cannot also receive degree credit in this course. Corequisite: PHYS 1021M. (Typically offered: Fall, Spring and Summer)
This course is equivalent to PHYS 1023.

PHYS 1034. Physics for Elementary Education Majors. 4 Hours.
For elementary education majors. Physical science concepts based on state frameworks are explored in a mixed lecture/lab environment. The inquiry-based lab activities can be transferable for school classroom use. Topics covered include: scientific inquiry, motion and forces, conservation of energy, heat, light, electricity and simple circuits, and magnetism. Prerequisite: Elementary education major. Corequisite: Lab component. (Typically offered: Spring)

PHYS 1044. Physics for Architects I. 4 Hours.
Algebra-based physics covering forces and motion with emphasis on architectural structural support systems such as beams, cables, columns, and trusses. Topics include physical concepts such as linear motion, position, velocity, acceleration, forces, free-body diagrams, rotational motion, torque, center of gravity, impulse, oscillations, equilibrium, stability, balance, stress, strain, and material strength. Corequisite: Lab component. Prerequisite: Major in architecture or interior design or agricultural education communication \& technology. (Typically offered: Fall)

## PHYS 1054. Physics for Architects II. 4 Hours.

Algebra-based physics covering thermal materials, fluid flow, acoustics, electricity, and optics with emphasis on architectural design. Topics include physical concepts such as potential and thermal energy, heat pumps, water pressure, fluid dynamics, sound waves, loudness, electrical systems, direct and alternating current, series and parallel circuits, optical instruments, reflection, and refraction. Corequisite: Lab component. Prerequisite: Major in architecture or interior design or agricultural education communication \& technology. (Typically offered: Spring)

PHYS 2011L. College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab). 1 Hour.
Laboratory 2 hours per week. Corequisite: PHYS 2013. (Typically offered: Fall and Summer)

PHYS 2013. College Physics I (ACTS Equivalency = PHYS 2014 Lecture). 3 Hours.
A non-calculus survey of the principles of physics including mechanics, heat and sound. Lecture 3 hours per week and drill 1 hour per week. Corequisite: Drill component and PHYS 2011L. Prerequisite: (MATH 1203 and MATH 1213) or (MATH 1284C or MATH 2043 or MATH 2554) or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT, or 620 on the math component of the new SAT. (Typically offered: Fall and Summer)

PHYS 2031L. College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab). 1 Hour.
Laboratory 2 hours per week. Corequisite: PHYS 2033. (Typically offered: Summer)
PHYS 2033. College Physics II (ACTS Equivalency = PHYS 2024 Lecture). 3 Hours.

Continuation of PHYS 2013. Topics include electricity and magnetism, light, relativity, quantum mechanics, atomic and nuclear structure. Lecture 3 hours, drill 1 hour per week. Corequisite: Drill component and PHYS 2031L. Prerequisite: PHYS 2013 or PHYS 2054 or PHYS 2054H. (Typically offered: Spring and Summer)

PHYS 2054. University Physics I (ACTS Equivalency = PHYS 2034). 4 Hours.
Introduction to the principles of mechanics, wave motion, temperature and heat, with calculus. Lecture three hours per week and practicum two hours a week (included in lab component). Corequisite: Lab component. Prerequisite: MATH 2554. (Typically offered: Fall, Spring and Summer)

## PHYS 2054H. Honors University Physics I. 4 Hours.

Introduction to the principles of mechanics, wave motion, temperature and heat, with calculus. Lecture three hours per week and practicum two hours a week (included in lab component). Corequisite: Lab component. Prerequisite: MATH 2554. (Typically offered: Fall, Spring and Summer)

This course is equivalent to PHYS 2054.

PHYS 2074. University Physics II (ACTS Equivalency = PHYS 2044 Lecture). 4 Hours.
Continuation of PHYS 2054. Topics covered include electricity, magnetism, light and geometric optics. Lecture three hours per week and practicum two hours per week. Corequisite: Lab component. Prerequisite: PHYS 2054 and MATH 2564. (Typically offered: Fall, Spring and Summer)

## PHYS 2074H. Honors University Physics II. 4 Hours.

Continuation of PHYS 2054H. Topics covered include electricity, magnetism, light and geometric optics. Lecture three hours per week and practicum two hours per week. Corequisite: Lab component. Prerequisite: (PHYS 2054 or PHYS 2054H) and MATH 2564. (Typically offered: Spring)

This course is equivalent to PHYS 2074.
PHYS 2094. University Physics III. 4 Hours.
A continuation of PHYS 2054 and PHYS 2074. Topics include waves, physical optics, thermodynamics, kinetic theory, and an introduction to quantum mechanics Lecture 3 hours per week and practicum 2 hours per week (included in lab component). Pre- or Corequisite: MATH 2574. Corequisite: Lab component. Prerequisite: PHYS 2074. (Typically offered: Fall)

## PHYS 306V. Projects. 1-3 Hour.

Individual experimental or theoretical research problems for advanced undergraduates. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

PHYS 3113. Analytical Mechanics. 3 Hours.
Newton's laws of motion applied to particles, systems of particles, and rigid bodies. Introduction to Hamilton's and Lagrange's equations. Pre- or Corequisite: MATH 2584. (Typically offered: Fall)

PHYS 3213. Electronics in Experimental Physics. 3 Hours.
DC \& AC electronics, semiconductors, operational amplifiers, and digital logic circuits with lab applications in experimental physics. Corequisite: Lab component. Prerequisite: PHYS 2094 or instructor consent. (Typically offered: Spring Odd Years)

PHYS 3273. Inquiry and Modeling in Science Education. 3 Hours.
Study of science practices with emphasis on modeling and inquiry for learning/ teaching. Includes practical, philosophical, cognitive, and disciplinary specific dimensions of doing science in academic and nonacademic settings. Includes planning and implementing multiple scientific inquiries, engaging in reflective practices, writing and presenting scientific information. Safety and ethical issues are included. Corequisite: Drill component. Prerequisite: 8 hours of PHYS courses. (Typically offered: Fall)
This course is cross-listed with CHEM 3273, BIOL 3273.

## PHYS 3453. Electromagnetic Theory I. 3 Hours

Basics of Electromagnetic Theory, focusing on statics and introducing Maxwell's equations. Topics covered are: vector calculus and the solution of partial differential equations by separation of variables, electrostatics, dielectric media, electric currents, magnetic fields, magnetic properties of matter, electromagnetic induction, force and energy in electrodynamics, and Maxwell's equations. Pre- or Corequisite: MATH 2584. Prerequisite: MATH 2574 and PHYS 2074. (Typically offered: Spring)

PHYS 3463. Electromagnetic Theory II. 3 Hours.
Basics of Electromagnetic Theory, focusing on dynamical aspects. Topics to be covered include: Time-varying electric and magnetic fields including propagation of electromagnetic plane waves in vacuum and in matter, reflection, refraction, and guided wave propagation, radiation from point charges and dipoles, and relativity and the relativistic formulation of electrodynamics. Prerequisite: PHYS 3453. (Typically offered: Fall)

PHYS 3544. Optics. 4 Hours.
Elements of geometrical, physical, and quantum optics. Lecture 3 hours, laboratory 2 hours. Corequisite: Lab component. Prerequisite: PHYS 2074 and MATH 2564. (Typically offered: Fall)

## PHYS 3603. Introduction to Modern Physics. 3 Hours.

An introduction to the basic ideas of 20th century physics, with an emphasis on those that form the foundations of modern technology: quantum theory and its application to atomic, nuclear, optical and condensed matter physics. No credit is given toward a B.S. degree in physics. Prerequisite: PHYS 2033 and MATH 2043 or MATH 2554. (Typically offered: Fall)

PHYS 360VL. Introduction to Modern Physics Laboratory. 1-3 Hour.
Experiments illustrating the development and concepts of modern physics. No credit given toward a B.S. major in physics. Prerequisite: PHYS 3603. (Typically offered:

## Fall)

PHYS 3613. Modern Physics. 3 Hours.
Introduction to special relativity, statistical physics, quantum physics, and a survey of molecules, solids, and statistical physics. Prerequisite: PHYS 2074. (Typically offered: Fall, Spring and Summer)

PHYS 361VL. Modern Physics Laboratory. 1-3 Hour.
Advanced experiments, projects, and techniques in atomic, nuclear, and solid state physics. Pre- or corequisite: PHYS 3613. (Typically offered: Fall) May be repeated for up to 3 hours of degree credit.

## PHYS 3923H. Honors Colloquium. 3 Hours.

Covers a special topic or issue, offered as part of the honors program. No more than 3 hours may be offered toward fulfillment of the requirements for the B.S. or B.A. degree in Physics. Prerequisite: Honors candidacy (not restricted to candidacy in physics). (Typically offered: Spring) May be repeated for degree credit.
PHYS 399VH. Honors. 1-6 Hour.
Independent study for physics students enrolled in the honors program. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

PHYS 4073. Introduction to Quantum Mechanics. 3 Hours.
A survey of quantum mechanics from the wave mechanical point of view including the application of quantum mechanics to the simple harmonic oscillator, angular momentum, and the hydrogen atom. Required course for B.S. Physics majors. Prerequisite: PHYS 3613, MATH 2574, and MATH 2584. (Typically offered: Fall)
PHYS 4083. Advanced Quantum Mechanics. 3 Hours.
Advanced topics in introductory quantum mechanics including identical particles, approximation methods; time-independent perturbations theory, variational principle, time-dependent perturbations theory, and scattering. Prerequisite: PHYS 4073, MATH 2574, and MATH 2584. (Typically offered: Spring)

## PHYS 4113. Physics in Perspective. 3 Hours.

Human implications of physics, including life's place in the universe, the methods of science, human sense perceptions, energy utilization, social impacts of technology, and the effect of physics on modern world views. Prerequisite: PHYS 3613. (Typically offered: Irregular)

## PHYS 4213. Physics of Devices. 3 Hours.

Principles of physics applied in a selection of technologically important devices in areas including computing, communications, medical imaging, lasers, and energy utilization. Students will utilize technical journals. Prerequisite: PHYS 3613. (Typically offered: Irregular)

## PHYS 4333. Thermal Physics. 3 Hours.

Equilibrium thermodynamics, statistical physics, and kinetic energy. Prerequisite: PHYS 3613. (Typically offered: Spring)

PHYS 4613. Introduction to Biophysics and Biophysical Techniques. 3 Hours. Origins of biophysics, biological polymers and polymer physics, properties of DNA and proteins, techniques to study DNA and proteins, biological membrane and ion channels, biological energy, experimental techniques to study single DNA and proteins. Two experiments are included: (1) DNA Gel electrophoresis; (2) Measurement of double-stranded DNA melting point. Prerequisite: PHYS 3613 or consent. (Typically offered: Spring)

PHYS 4653. Subatomic Physics. 3 Hours.
Nuclear structure and nuclear reactions. Nature and properties of elementary particles and resonances, their interactions and decays. Phenomenological theory and discussion of experimental evidence. Prerequisite: PHYS 3613. (Typically offered: Fall Odd Years)

## PHYS 4713. Solid State Physics. 3 Hours.

Crystal structure, diffraction and symmetry. Lattice vibrations, elasticity and optical properties. Electronic structure, band theory, transport and magnetism. Course emphasizes applications and current topics in semiconductors, optics and magnetism. Pre- or Corequisite: PHYS 4073. (Typically offered: Spring Even Years)
PHYS 4734. Introduction to Laser Physics. 4 Hours.
A combined lecture/laboratory course covering the theory of laser operation, laser resonators, propagation of laser beams, specific lasers such as gas, solid state, semiconductor and chemical lasers, and laser applications. Prerequisite: PHYS 3544. (Typically offered: Spring)

PHYS 4773. Introduction to Optical Properties of Materials. 3 Hours.
A course covering crystal symmetry optical transmission and absorption, light scattering (Raman and Brillouin) optical constants, carrier mobility, and polarization effects in semi-conductors, quantum wells, insulators, and other optically important materials. Prerequisite: PHYS 3544. (Typically offered: Spring)
PHYS 498V. Senior Thesis. 1-6 Hour.
Senior Thesis. (Typically offered: Fall, Spring and Summer)

## PHYS 4991. Physics Senior Seminar. 1 Hour.

Student mastery of the principles of physics are assessed by means of a research paper, a presentation on the research topic, and a reflection essay over coursework completed as part of the physics degree. A quantitative assessment examination will also be administered. Satisfies the Fulbright College writing requirement. (Typically offered: Fall, Spring and Summer)

## Political Science (PLSC)

William D. Schreckhise
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Department of Political Science Website (http://fulbright.uark.edu/ departments/political-science/)

The Department of Political Science offers a major leading to a Bachelor of Arts degree, three combined majors, also leading to Bachelor of Arts degrees, and two minors, one in legal studies and a second interdisciplinary minor in urban planning. Political science is the traditional undergraduate degree choice for those considering law school. It is also ideal preparation for a career in government service, including internationally-oriented paths like the foreign service, intelligence, and foreign aid/development agencies, and domestic political careers like consulting, research, polling, and policy/campaign staff.

For requirements for the M.A. degree in political science, the M.P.A degree, or the dual J.D./M.A. and J.D./M.P.A. degrees, see the Graduate School Catalog.

University and College Requirements for a Bachelor of Arts in Political Science: In addition to the state minimum core (p. 81) and the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

| State minimum co |  | 35 |
| :---: | :---: | :---: |
| PLSC 2003 | American National Government (ACTS Equivalency = PLSC 2003) | 3 |
| PLSC 2013 | Introduction to Comparative Politics | 3 |
| PLSC 2813 <br> or PLSC 3103 | Introduction to International Relations and Global Studies <br> Public Administration | 3 |
| 18 credit hours in 3000-level or high PLSC 300V, PLS | political science (PLSC) courses numbered her. No more than 9 credit hours may come from C 394V, PLSC 498V, or PLSC 499VH. | 8 |
| $\begin{aligned} & \text { PLSC } 4153 \\ & \text { or PLSC } 4913 \\ & \text { or PLSC } 499 \mathrm{Vt} \end{aligned}$ | Public Policy International Studies Seminar -Honors Essay | 3 |
| Students must satis below. | atisfy either Requirement A or Requirement B from | 12 |
| Requirement A |  |  |
| Completion o level. ${ }^{1}$ | world language course up to the Intermediate II |  |
| Requirement B |  |  |
| PHIL 2003 | Introduction to Philosophy (ACTS Equivalency = PHIL 1103) ${ }^{2}$ |  |
| Or PHIL | 3Logic (ACTS Equivalency = PHIL 1003) |  |
| STAT 2303 or BUSI 103 | Principles of Statistics (ACTS Equivalency $=$ MATH 2103) <br> 3:Data Analysis and Interpretation |  |
| MATH 2043 | ```Survey of Calculus (ACTS Equivalency = MATH 2203)``` |  |
| or MATH 20 or MATH 21 or MATH 25 | કجnite Mathematics <br> 18\|lathematical Reasoning in a Quantitative World <br> 554alculus I (ACTS Equivalency = MATH 2405) |  |
| PLSC 3603 | Scope and Methods of Political Science |  |
| Any Fulbright Coll | lege credit hours 3000-level or higher | 3 |
| Any UA offered cre | redit hours 3000-level or higher | 6 |
| Any 3000-level or that have a course | higher credit hours or any 2000-level credit hours e prerequisite | 10 |
| General Electives |  | 24 |
| Total Hours |  | 120 |
| ${ }^{1}$ Students pursuing Requirement A must complete a different Humanities state minimum core (p. 81) course in addition to the Intermediate I level course of a world language, which otherwise would normally count toward this requirement. <br> ${ }^{2}$ Students pursuing Requirement B must complete a different Humanities state minimum core (p. 81) course in addition to either PHIL 2003 or PHIL 2203, which otherwise would normally count toward this requirement. |  |  |
|  |  |  |

Writing Requirement: The college writing requirement is fulfilled by submitting an acceptable research/analytical paper to the department for approval at least four weeks prior to graduation. The paper may be derived from completion of an honors essay (PLSC 499VH), a senior thesis (PLSC 498V), or some other advanced course in political science. The student is urged to consult with his or her faculty adviser no later than early in the first semester of the senior year.

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations
chapter for university requirements of the program as well as Fulbright College requirements.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives. Students should consult with their academic adviser.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| Satisfies General Education Outcome 2.1: |  |  |
| MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency $=$ MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency $=$ MATH 1103) <br> or any MATH course numbered higher than MATH 1203 | 3 |  |
| PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) (Satisfies General Education Outcomes 3.3 and 4.2) | 3 |  |
| Fine Arts state minimum core (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| General Electives | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  |  |
| PLSC 2013 Introduction to Comparative Politics (Satisfies General Education Outcomes 4.1 and 5.1) |  |  |
| Social Sciences state minimum core (Satisfies General Education Outcome 3.3) ${ }^{2}$ |  |  |
| Humanities state minimum core (Satisfies General Education Outcome 3.2) ${ }^{3}$ |  |  |
| General Electives |  |  |
| Year Total: | 15 | 15 |

Second Year Fall | Units |
| ---: |
| Spring |

PLSC 2813 Introduction to International Relations 3
and Global Studies
or PLSC 3103 Public Administration
Requirement A or B course
Social Sciences state minimum core (Satisfies 3
General Education Outcome 3.3)
Science state minimum core with corequisite lab 4
(Satisfies General Education Outcome 3.4)
General Electives
Requirement A or B course 3
Science state minimum core with corequisite lab 4
(Satisfies General Education Outcome 3.4)
PLSC course numbered 3000-level or higher
General Electives
Year Total:

16

|  | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Requirement A or B course | 3 |  |
| PLSC course numbered 3000-level or higher | 6 |  |
| Any Fulbright College credit hours 3000--level or higher | 3 |  |
| Any 3000-level or higher credit hours or any 2000level credit hours which have a course prerequisite | 3 |  |
| Requirement A or B course |  | 3 |
| PLSC course numbered 3000-level or higher |  |  |
| Any UA offered credit hours 3000-level or higher |  | 3 |
| Any 3000-level or higher credit hours or any 2000level credit hours which have a course prerequisite |  | 3 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| Satisfies General Education Outcomes 1.2 and 6.1: |  |  |
| PLSC 4153 Public Policy or PLSC 4913 International Studies Seminar or PLSC 499VH Honors Essay | 3 |  |
| Any 3000-level or higher credit hours or any 2000level credit hours which have a course prerequisite | 3 |  |
| General Electives | 9 |  |
| PLSC course numbered 3000-level or higher |  | 3 |
| Any UA offered credit hours 3000-level or higher |  | 3 |
| Any 3000-level or higher credit hours or any 2000level credit hours which have a course prerequisite |  |  |
| General Electives |  | 6 |
| Year Total: | 15 | 3 |
| Total Units in Sequence: |  | 120 |
| ${ }^{1}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: <br> ARCH 1003, ARHS 1003, COMM 1003, DANC 1003,LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H. |  |  |
| ${ }^{2}$ The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: <br> AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033. <br> ${ }^{3}$ The Humanities Elective courses which satisfy General Education Outcome 3.2 include: <br> AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, |  |  |
|  |  |  |

THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Requirements for the Combined Major in Journalism and Political Science

All university students must fulfill the minimum University Core requirements (http://catalog.uark.edu/undergraduatecatalog/ academicregulations/universitycore/). A minimum of 72 hours in nonjournalism courses must be applied toward the 120 hours required by the college for a Bachelor of Arts degree. Bolded courses from the list below may be applied to portions of the University Core requirements.

Select one of the following: 3

| MATH 2043 | ```Survey of Calculus (ACTS Equivalency = MATH 2203)``` |
| :---: | :---: |
| MATH 2053 | Finite Mathematics |
| MATH 2183 | Mathematical Reasoning in a Quantitative World |
| or Higher Level MATH |  |
| STAT 2303 | ```Principles of Statistics (ACTS Equivalency = MATH 2103)``` |
| Intermediate I (course number 2003) of a World Language ${ }^{1}$ |  |
| Select one of the following: |  |
| WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) |
| WLIT 1123 | World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123) |
| An Advanced Literature Course |  |
| A Language Literature Course |  |
| Select one of the following: |  |

PHIL 2003 Introduction to Philosophy (ACTS Equivalency $=$ PHIL 1103)
PHIL 2103 Introduction to Ethics (ACTS Equivalency = PHIL 1003)
Any Philosophy Course at the 3000-level or higher (recommended: PHIL 3103 Ethics and the Professions)

| PLSC 2003 | American National Government (ACTS |
| :--- | :--- | :--- |
|  | Equivalency = PLSC 2003) |

A second PLSC course (the following are recommended options): 3
PLSC 2813 Introduction to International Relations and Global Studies
PLSC 3233 The American Congress
PLSC 4233 The American Chief Executive
ECON 2143 Basic Economics: Theory and Practice 3-6
or ECON 2013 Principles of Macroeconomics (ACTS Equivalency
\& ECON 2023 = ECON 2103) and Principles of Microeconomics (ACTS Equivalency = ECON 2203)
COMM $1313 \quad$ Public Speaking (ACTS Equivalency $=$ SPCH 3 1003)

3000-4000 Level HIST Course * 3
3 hours of cultural/diversity studies to be selected from the following 3 or as approved by the School of Journalism and Strategic Media. Select one of the following:

ANTH 4533 Middle East Cultures
COMM 4343 Intercultural Communication

| HIST 3233 | African American History to 1877 * |
| :--- | :--- |
| HIST 3243 | African American History Since 1877 |
| HIST 3263 | History of the American Indian * |
| SCWK 3193 | Human Diversity and Social Work |
| JOUR 3263 | African Americans in Film ** |
| JOUR 4923 | History of the Black Press ** |
| SOCI 3193 | Race, Class, Gender, and Sexuality |

Other cultural/diversity-related topics as approved by the School of Journalism and Strategic Media

1 The number of credit hours taken to complete this level of proficiency depends on placement level in the language course sequence.

* A cultural/diversity-approved HIST course is allowed to also satisfy the major's 3000-4000 level HIST course requirement.
** A cultural/diversity-approved JOUR course is also allowed to satisfy a JOUR elective.


## Political Science Requirements

The political science requirement for the combined major may be satisfied by 24 semester hours of courses, including PLSC 2003, PLSC 2013, PLSC 4373, and either an additional 15 hours of advanced political science courses elected entirely from American political affairs courses:

## American Political Affairs

| PLSC 3103 | Public Administration | 3 |
| :--- | :--- | ---: |
| PLSC 4153 | Public Policy | 3 |
| PLSC 3223 | Arkansas Politics and the Nation | 3 |
| PLSC 3233 | The American Congress | 3 |
| PLSC 3243 | The Judicial Process | 3 |
| PLSC 3253 | Urban Politics | 3 |
| PLSC 3603 | Scope and Methods of Political Science | 3 |
| PLSC 3853 | American Foreign Policy | 3 |
| PLSC 3923H | Honors Colloquium | 3 |
| PLSC 394V | Readings in Political Science | $1-3$ |
| PLSC 3983 | Politics in Literature | 3 |
| PLSC 4193 | Administrative Law | 3 |
| PLSC 4203 | American Political Parties | 3 |
| PLSC 4213 | Campaigns and Elections | 3 |
| PLSC 4253 | The U.S. Constitution I | 3 |
| PLSC 4283 | Federalism and Intergovernmental Relations | 3 |

Or an additional 15 hours of advanced political science courses elected entirely from foreign affairs courses:

## Foreign Affairs

| PLSC 3503 | Governments and Politics of East Asia | 3 |
| :--- | :--- | :--- |
| PLSC 3523 | Politics of the Middle East | 3 |
| PLSC 3573 | Governments and Politics of Latin America | 3 |
| PLSC 3603 | Scope and Methods of Political Science | 3 |
| PLSC 3803 | International Organization | 3 |
| PLSC 3813 | International Law | 3 |
| PLSC 3823 | Theories of International Relations | 3 |
| PLSC 3853 | American Foreign Policy | 3 |
| PLSC 3923H | Honors Colloquium | 3 |


| PLSC 394V | Readings in Political Science | $1-3$ |
| :--- | :--- | ---: |
| PLSC 4513 | Creating Democracies | 3 |
| PLSC 4563 | Government and Politics of Russia | 3 |
| PLSC 4573 | Gender and Politics | 3 |
| PLSC 4593 | Islam and Politics | 3 |
| PLSC 4803 | Foreign Policy Analysis | 3 |
| PLSC 4843 | The Middle East in World Affairs | 3 |

## Journalism Requirements

The journalism requirement may be satisfied by a minimum of 24 semester hours of JOUR courses, including JOUR 1023, JOUR 1033, and JOUR 3633. The remaining hours are filled from the following options.

All majors and minors must complete the Grammar, Spelling and Punctuation (GSP) requirement as a prerequisite or co-requisite to JOUR 1033 Media Writing by completing one of these two options: 1) Pass JOUR 1003 Journalistic Writing Skills with a grade of $C$ or better; or 2) Pass JOUR 1100 Grammar Spelling Punctuation Requirement with a Satisfactory (S) grade by scoring a $75 \%$ or better on the GSP test that is administered through the class. Once you officially declare a Journalism major or minor, you will obtain access to the GSP Blackboard course for Option 2. Students who do not complete both the GSP requirement and JOUR 1033 with a C or better cannot enroll in any courses for which JOUR 1033 is a prerequisite. The GSP test is only administered a certain number of times each semester. Students must request a GSP test time a minimum of two weeks before they plan to take the test. There is no guarantee that GSP testing slots will be open when desired, so students must schedule well in advance.

Those wishing to emphasize Political Advertising and Promotion take the following courses:

## Advertising/Public Relations Concentration, Political Advertising and Promotion Track:

| ADPR 3723 | Advertising Principles | 3 |
| :---: | :---: | :---: |
| ADPR 3743 | Public Relations Principles | 3 |
| JOUR 4043 | Government and the Media | 3 |
| Six hours of Advanced Journalism Courses. |  | 6 |
| Students should check course prerequisites. |  |  |
| Those wishing to pursue the Public Affairs Reporting track can choose from either news/editorial or broadcast concentration: |  |  |
| Broadcast Concentration, Public Affairs Reporting Track: |  |  |
| JOUR 2032 <br> \& JOUR 2031L | Broadcast News Reporting I and Broadcast News Reporting I Laboratory | 3 |
| JOUR 3072 <br> \& JOUR 3071L | Broadcast News Reporting II and Broadcast News Reporting II Laboratory | 3 |
| JOUR 4043 | Government and the Media | 3 |
| JOUR 4863 | Television News Reporting I | 3 |
| JOUR 4873 | Television News Reporting II | 3 |

## News/Editorial Concentration, Public Affairs Reporting Track:

| JOUR 2013 | News Reporting I | 3 |
| :--- | :--- | :--- |
| JOUR 3013 | Editing | 3 |
| JOUR 3023 | News Reporting II | 3 |
| or JOUR 4503 | Magazine Writing |  |

JOUR $4043 \quad 3$
One additional Journalism course
Journalism/Political Science B.A.
Eight-Semester Degree Program
Students wishing to follow the eight-semester degree plan should see
the Eight-Semester Degree Policy (p. 67) for university requirements of
the program. Core requirement hours may vary by individual, based on
placement and previous credit granted. Once all core requirements are
met, students may substitute a three-hour (or more) general elective in
place of a core area.

First Year Units

|  | Fall | Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency $=$ | 3 |  |
| ENGL 1013) |  |  |
| MATH 1203 College Algebra (ACTS Equivalency $=$ | $3-4$ |  |

or MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203)
or MATH 2053 Finite Mathematics
or MATH 2183 Mathematical Reasoning in a
Quantitative World
or MATH 2554 Calculus I (ACTS Equivalency =
MATH 2405)
or STAT 2303 Principles of Statistics (ACTS
Equivalency $=$ MATH 2103)

JOUR 1023 Media and Society
3
or JOUR 1033 Media Writing
Social science university/state core requirement
3
(HIST recommended)
1013 Elementary II world language
3
ENGL 1023 Composition II (ACTS Equivalency =
ENGL 1023)
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) (if higher MATH still needed, else non-JOUR General Elective)
or MATH 2053 Finite Mathematics
or MATH 2183 Mathematical Reasoning in a
Quantitative World
or MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)
or STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
PLSC 2003 American National Government (ACTS
Equivalency = PLSC 2003)
JOUR 1033 Media Writing
or JOUR 1023 Media and Society
2003 Intermediate I world language
Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| PLSC 2013 Introduction to Comparative Politics | 3 |  |
| JOUR course from selected concentration |  |  |

COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)
PLSC course from selected concentration ${ }^{\dagger \ddagger}$
JOUR course from selected concentration ${ }^{\dagger}$
WLIT 1113 World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) or WLIT 1123 World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123)
science university/state core lecture w/ corequisite
lab requirement
General Elective
Year Total: 16
Third Year Units

JOUR course from selected concentration ${ }^{\dagger \ddagger}$ Fall
PLSC course from selected concentration ${ }^{\dagger \ddagger} 3$
PHIL 2003 Introduction to Philosophy (ACTS
Equivalency $=$ PHIL 1103)
or PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003)
ECON 2143 Basic Economics: Theory and
3
Practice
General Elective
3
JOUR 3633 Media Law (or JOUR course from 3
selected concentration) ${ }^{\dagger \ddagger}$
PLSC 4373 Political Communication (or PLSC 3
course from selected concentration) ${ }^{\dagger \ddagger}$
3000+ HIST course ${ }^{\dagger \ddagger}$
Cultural/Diversity course
non-JOUR General Elective $\quad 3$
Year Total: 15 15

Fourth Year | Units |
| ---: |
| Fall |

PLSC course from selected concentration or PLSC 3
4373 Political Communication (as needed) ${ }^{\dagger \ddagger}$
3 JOUR course from selected concentration or $\dagger \ddagger$ JOUR 3633 Media Law(as needed) ${ }^{\dagger \ddagger}$
3 General Electives (1 hour of non-JOUR electives might be needed to reach a minimum of 72 hours of non-JOUR coursework required by the major) Year Total:

## Combined Major

Political Science and Journalism: The combined major in political science and journalism is recommended for those students who have a strong interest in the reporting of public affairs as a career. For requirements, please refer to the combined major in Journalism and

Political Science (p. ). Students should consult with their adviser in each department.

## Minor in Political Science

A total of 18 credit hours in PLSC courses to include PLSC 2003 and PLSC 2013, with at least 9 credit hours numbered 3000 or above. Students should consult with the political science advisor in Fulbright College for the selection of appropriate courses

## Minor in Legal Studies

This minor introduces undergraduate students to the study and application of law by taking law-related courses in a number of disciplines. It provides a focus for students who are interested in the law, whose careers will require a measure of legal knowledge, or for those considering entering law school.

Requirements for a Minor in Legal Studies: 15 credit hours from the following:

| AGEC 3503 | Agricultural Law I | 3 |
| :--- | :--- | :--- |
| BLAW 3033 | Commercial Law | 3 |
| CRIM 2043 | Sociology of Criminal Law | 3 |
| CRIM 3503 | Criminal Procedures | 3 |
| CRIM 3513 | Criminal Evidence | 3 |
| COMM 4113 | Legal Communication | 3 |
| FDSC 3202 | Introduction to Food Law | 2 |
| JOUR 3633 | Media Law | 3 |
| OMGT 4313 | Law and Ethics | 3 |
| PHIL 4143 | Philosophy of Law | 3 |
| PLSC 3203 | Introduction to Legal Studies | 3 |
| PLSC 3213 | The South and the Law: Race, Gender, and | 3 |
|  | Citizenship | 3 |
| PLSC 3243 | The Judicial Process | 3 |
| PLSC 3813 | International Law | 3 |
| PLSC 4193 | Administrative Law | 3 |
| PLSC 4253 | The U.S. Constitution I | 3 |

Students should consult with their adviser each semester.

The departments of Landscape Architecture and Political Science collaboratively offer an interdisciplinary minor in Urban and Regional Planning.

## Requirements for Urban and Regional Planning Minor

A student who is interested in the Urban and Regional Planning minor should notify either the Departments of Landscape Architecture or Political Science and consult with their academic advisor. The minor consists of 18 hours of required and elective courses and subdivided into three tiers: core courses, tier-one electives and tier-two electives. The minor's required and elective courses include:

## Required Core Courses:

| PLSC 4103 | Introduction to Urban Planning | 3 |
| :--- | :--- | ---: |
| LARC 5493 | Environmental Land Use Planning | 3 |
| Tier-One Electives |  | $\mathbf{6 - 1 2}$ |

Select 6-12 hours from the following:
LARC-approved design studio focused on planning (may only
count once)
LARC Advocacy Module focused on planning
ANTH 5113

| PLSC 4173 | Anthropology of the City |
| :--- | :--- |
| PLSC 390V | Special Topics |
| HDFS 4603 | Environmental Sociology |
| GEOS 4073 | Urban Geography |
| PLSC 3253 | Urban Politics |
| LARC 4753 | Incremental Sprawl Repair |
| LARC 402 V | Special Studies |
| SOCI 3153 | Urban Sociology |

Tier-Two Electives (up to six hours of electives may come from 0-6 the following options)

| LARC 4033 | Landscape Architecture Theory |
| :--- | :--- |
| GEOS 3043 | Sustaining Earth |
| GEOS 4393 | American Public Lands \& Policy |
| GEOS 4693 | Environmental Justice |
| LARC 5053 | Historic Landscape Preservation |
| ANTH 4443 | Cultural Resource Management I |
| ANTH 4603 |  |
| ENSC 3223 | Ecosystems Assessment |
| ENSC 3221L | Ecosystems Assessment Laboratory |
| ENSC 3933 | Environmental Ethics |
| ENSC 3413 | Principles of Environmental Economics |
| PLSC 4283 | Federalism and Intergovernmental Relations |
| ARCH 5493 | History of Urban Form |
| SCMT 3443 | DELIVER: Transportation and Distribution |
|  | Management |

## Total Hours

18
Requirements for Graduation with Honors in Political Science: Both the College and the Departmental Honors Program in Political Science provide undergraduate students the opportunity to participate in directed independent study and scholarly activity. Admission to the Fulbright Honors Program is open to Political Science majors with a minimum cumulative grade point average of 3.5 in all their coursework. Honors candidates must complete at least 12 hours of honors courses, which includes 6 hours of PLSC 499VH Honors Essay.

Honors candidates carry out independent study and research under the guidance of political science faculty and participate in special honors classes and colloquia. To successfully complete the required thesis, students should choose an honors thesis adviser as early as possible. An adviser should be selected and an Honors Agreement completed no later than the first semester in a student's junior year.

Honors candidates must meet the College's requirements for an honors degree. Students graduating with honors typically graduate with the distinction cum laude. Higher degree distinctions (magna cum laude, summa cum laude) are awarded by the Honors Council, are recommended only in truly exceptional cases, and are based on the whole of the candidate's program of honors studies.

Political Science (B.A.) Social Studies Teaching Licensure
Requirements:

Please refer to the Secondary Education Requirements (p. 276) for Fulbright College Students.

Students wanting to teach social studies in middle school should consult with a middle level adviser in the College of Education and Health Professions.

## Faculty

Adam, Thomas, Ph.D., M.A. (University of Leipzig), Professor, 2020, 2022.

Ayala, Jose Transito, M.A., B.A. (University of Arkansas), Lecturer, 2021.

Baptist, Najja K., Ph.D. (Howard University), M.A. (Jackson State University), B.A. (North Carolina Central University), Assistant Professor, 2020.

Barkat, Sophia, Ph.D., M.A. (Northern Arizona University), B.A. (Mount Holyoke College), Visiting Assistant Professor, 2021.
Bayram, A. Burcu, Ph.D. (Ohio State University), M.I.S. (North Carolina State University), B.A. (Middle East Technical University), Associate Professor, 2016, 2021.
Campos, Alejandra, Ph.D. (University of Notre Dame), M.A., B.A. (University of Arkansas), Assistant Professor, 2023.
Conge, Patrick J., Ph.D. (University of Texas at Austin), M.A., B.S.
(Arizona State University), Associate Professor, 1995, 2002.
Crawford, Cory, J.D. (University of Arkansas), Lecturer, 2019.
Diallo, Anne B., Ph.D., M.P.A., B.A. (University of Arkansas), Lecturer, 2012.

Dowdle, Andrew J., Ph.D. (Miami University), M.A. (University of Iowa), B.A. (University of Tennessee), Professor, 2003, 2015.

Evans, Matthew James, Ph.D. (Northern Arizona University), M.A, B.A. (University of Louisville), Lecturer, 2022.
Ghadbian, Najib, Ph.D. (City University of New York), M.A. (City
University of New York), M.A. (Rutgers University), B.Sc. (United Arab Emirates University), Associate Professor, 1999, 2005.
Hill, Kennedy, Ph.D., M.P.A., B.A. (University of Arkansas), Lecturer, 2022.

Huett, Briana Marie, Ph.D., M.S., M.P.A. (University of Arkansas), B.A. (Davidson College), Lecturer, 2021.
Hunt, Valerie H., Ph.D., J.D., B.A. (University of Arkansas), Associate Professor, 2005, 2014.
Johnson, Alex, M.S., B.A. (University of Arkansas), Lecturer, 2020.
Kerr, Brinck, Ph.D. (Texas A\&M University), B.A. (University of Texas at Austin), University Professor, 1994, 2021.
Kim, Seokeun, Ph.D. (University of Georgia), M.P.A. (lowa State University), B.P.A. (University of Seoul), Visiting Assistant Professor, 2022.

Looney, Nathan C., J.D. (University of Arkansas at Little Rock), M.P.S. (University of Arkansas Clinton School of Public Service), B.A. (University of Arkansas), Lecturer, 2012.
Maxwell, Angie, Ph.D., M.A. (University of Texas at Austin), B.A. (University of Arkansas), Professor, Diane D. Blair Professor of Southern Studies, 2008, 2022.
Mitchell, Joshua Lee, Ph.D. (Southern Illinois University), M.P.A., B.S. (Murray State University), Associate Professor, 2010, 2019.
Moyer, Rachael M., Ph.D., M.S., M.A. (University of Arkansas), B.A. (University of Missouri), Lecturer, 2020.
Nastasi, Angelina, M.P.A. (University of Arkansas), B.A. (Texas State University), Lecturer, 2021.
Overstreet, Tyler, M.A. (University of Illinois), B.S. (Missouri Southern State University), Lecturer, 2022.
Parry, Janine A., Ph.D., M.A. (Washington State University), B.A.
(Western Washington University), University Professor, 1998, 2021.

Renteria, Kimberly, J.D. (University of Arkansas at Little Rock), B.S. (Arkansas Tech University), Lecturer, 2023.
Riggs, Chloe B., M.P.A., B.A. (University of Arkansas), Lecturer, 2021.
Ryan, Jeffrey J., Ph.D., M.A. (Rice University), B.A. (Colorado State University), Associate Professor, 1990, 1996.
Saeidi, Shirin, Ph.D. (University of Cambridge, United Kingdom), M.A. (George Mason University), B.A. (University of Maryland-College Park), Assistant Professor, 2018.
Schreckhise, William D., Ph.D., M.A., B.A. (Washington State University), Professor, 1998, 2020.
Sebold, Karen Denice, Ph.D., M.A. (University of Arkansas), B.S. (Campbell College), B.S. (Rogers State University), Assistant Professor, 2011, 2020.
Shields, Todd G., Ph.D., M.A. (University of Kentucky), B.A. (Miami University), Professor, 1994, 2005.
Song, Geoboo, Ph.D. (University of Oklahoma), B.A. (Korea University), B.A. (Hanyang University), Associate Professor, 2012, 2019.

Stewart, Patrick A., Ph.D., (Northern Illinois University), M.A., B.A. (University of Central Florida), Professor, 2008, 2021.
Sullivan, W. Curt, M.A. (University of Arkansas), B.A. (Harding University), Lecturer, 2015.
Tucker, Mary Honore, J.D., B.C.L. (Louisiana State University), M.Ed. (University of Arkansas), B.S. (Tulane University), Lecturer, 2019.
Tumlison, Creed, Ph.D., M.A. (University of Arkansas), B.S. (Arkansas State University), Visiting Assistant Professor, 2020.
Villalonga, Patrick, Ph.D., M.S., B.A. (Florida International University), Visiting Assistant Professor, 2022.
Woehr, Summer Dawn, M.A. (University of Arkansas), B.S. (Campbell University), Lecturer, 2020.
Young, Wes, M.P.A. (University of Arkansas), B.S. (University of Phoenix), A.S. (Ashworth University), Lecturer, 2022.
Zeng, Ka, Ph.D. (University of Virginia), M.A. (Virginia Polytech Institute and State University), B.A. (Foreign Affairs College, Beijing), Distinguished Professor, 2000, 2022.

## Courses

PLSC 1003H. Honors Perspectives in Political Science. 3 Hours.
This course takes a topical approach to introducing first-year students to the academic skills essential to success in college and the methods of the political science discipline. The course emphasizes the transition to the UA and universitylevel work by addressing topics such as the advising process and civic engagement. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
PLSC 2003. American National Government (ACTS Equivalency = PLSC 2003). 3 Hours.
Survey of the history, basic ideas, structure, and political processes of the national government of the United States, including the fundamental relationships of the federal system. Required of all political science majors. (Typically offered: Fall, Spring and Summer)
PLSC 2003H. Honors American National Government. 3 Hours.
Survey of the history, basic ideas, structure, and political processes of the national government of the United States, including the fundamental relationships of the federal system. Prerequisite: Honors standing. (Typically offered: Fall) This course is equivalent to PLSC 2003.

PLSC 2013. Introduction to Comparative Politics. 3 Hours.
An introductory survey of comparative political systems. (Typically offered: Fall, Spring and Summer)

PLSC 2203. State and Local Government (ACTS Equivalency = PLSC 2103). 3 Hours.
Organization and functions of state and local governments in the United States, intergovernmental relations, administration, adjudication, and the organization and function of political parties on state and local levels. (Typically offered: Fall Even Years; Summer)

PLSC 2813. Introduction to International Relations and Global Studies. 3 Hours.
An interdisciplinary survey of the state system, the role of non-state actors, and the processes and outcomes of globalization. Topics include theories of international conflict and peace, international norms and ethics, international law and organizations, global cultural interactions, and contemporary transnational challenges. (Typically offered: Fall and Spring)
This course is equivalent to INST 2813.
PLSC 2813H. Honors Introduction to International Relations and Global Studies. 3 Hours.
An interdisciplinary survey of the state system, the role of non-state actors, and the processes and outcomes of globalization. Topics include theories of international conflict and peace, international norms and ethics, international law and organizations, global cultural interactions, and contemporary transnational challenges. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to INST 2813.
PLSC 300V. Internship in Public Affairs. 1-6 Hour.
Work experience in a public sector agency arranged by the student under the guidance of a faculty member. Written assignment required. Can be taken remotely through Global Campus. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

PLSC 3103. Public Administration. 3 Hours.
Trends and organization of public administration, dynamics of management; fiscal and personnel management; administrative powers and responsibility. Prerequisite: PLSC 2003. (Typically offered: Spring)

## PLSC 3203. Introduction to Legal Studies. 3 Hours.

An examination of the legal profession, legal writing, and the substantive areas of law in the U.S. Prerequisite: PLSC 2003. (Typically offered: Fall and Spring)
PLSC 3213. The South and the Law: Race, Gender, and Citizenship. 3 Hours. Examines the experience of racial and ethnic minorities, as well as women, in the post-Civil War South. Explores legal ramifications and tracks cultural and political legacies of landmark cases and/or legislative acts. (Typically offered: Fall)

PLSC 3223. Arkansas Politics and the Nation. 3 Hours.
An examination of Arkansas Politics including the political process, public policies, social problems, political behavior, governmental structure, and contemporary issues with an emphasis on the historical, regional, and national context. Prerequisite: PLSC 2003. (Typically offered: Spring)
PLSC 3233. The American Congress. 3 Hours.
Thorough examination of the constitutional role of the legislative branch under the Constitution; the internal procedures and personalities of the Senate and House; the central place of Congress in shaping domestic and foreign policy. Prerequisite: PLSC 2003. (Typically offered: Fall)

PLSC 3243. The Judicial Process. 3 Hours.
The structure and operation of the state and national court systems. Emphasis is upon the role of the judiciary in the American political system and the political aspects and consequences of judicial decision-making. Prerequisite: PLSC 2003. (Typically offered: Fall)
PLSC 3253. Urban Politics. 3 Hours.
Analysis of comparative urban systems, including political process, public policy, social problems, governmental structure, and voter behavior. Prerequisite: PLSC 2003. (Typically offered: Spring)

## PLSC 3263. Latino Politics. 3 Hours.

An overview of Latino political behavior that analyzes the social, economic, and political issues impacting the Latino/Hispanic community in the United States. The course focuses on understanding relationships of power and interaction within the institutional contexts that shape diverse Latino experiences. (Typically offered: Fall)

## PLSC 3293. Black Politics. 3 Hours.

This is a survey course is designed to provide students with a comprehensive overview of Black political participation in the United States and throughout the diaspora. In addition to analyzing important events in Black politics in the U.S., the course also examines evolving patterns of diasporic political participation throughout the world. Prerequisite: PLSC 2003. (Typically offered: Fall)
This course is cross-listed with AAST 3293.

## PLSC 3393. Civil Rights Policy and Politics. 3 Hours.

This course will draw from linkages between the protest phase of the civil rights and American political institutions. The course explores the institutional impact of the civil rights movement on the presidency, congress, the courts, administrative regulatory agencies, and civil rights advisory organizations. Prerequisite: PLSC 3293. (Typically offered: Spring)
This course is cross-listed with AAST 3393.

## PLSC 3503. Governments and Politics of East Asia. 3 Hours.

Comparative analysis of structures, processes, and problems of the political systems of the Democratic Republic of Vietnam, Japan, and the Peoples Republic of China.
Prerequisite: PLSC 2013. (Typically offered: Fall)
This course is cross-listed with AIST 3503.

## PLSC 3523. Politics of the Middle East. 3 Hours.

Survey of the unity and diversity in the political development of the Middle East, as evident in historical legacies, state formation, civil society, social class, and political identity. (Typically offered: Fall)

## PLSC 3543. Introduction to Citizenship Studies. 3 Hours.

Introduction to the field of citizenship studies with a focus on theoretical and empirical illustrations. Covers citizenship in the Middle East, Latin America, and contemporary Africa. Theoretically grounded in comparative politics, students should develop understanding of the complex debates and real-time challenges which shape this sub-field of political science. (Typically offered: Spring)

## PLSC 3553. Western European Politics. 3 Hours.

Comparative analysis of Western European parliamentary systems with special attention to political traditions, constitutional arrangements, socio-economic structure, and the political and legislative processes in countries such as Britain, France, and Germany. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Irregular)
PLSC 3573. Governments and Politics of Latin America. 3 Hours.
Comparative survey of Latin America political forces and institutions with special attention to patterns and problems of political change and development in that area. Prerequisite: PLSC 2013. (Typically offered: Irregular)

## PLSC 3603. Scope and Methods of Political Science. 3 Hours.

The basic principles and assumptions of political inquiry (methodology) and research techniques for gathering and analyzing data about political phenomena. Prerequisite: PLSC 2003. (Typically offered: Fall, Spring and Summer)

PLSC 3683. International Conflict and National Security Policy. 3 Hours.
This course examines international conflict and national security policy. The first part of the course analyzes the causes and consequences of international conflict and mechanisms for conflict resolution. The second part examines the formulation and implementation of national security in comparative perspective and U.S. national security policy. Prerequisite: PLSC 2813. (Typically offered: Fall Even Years)

PLSC 3803. International Organization. 3 Hours.
This course is about how state and non-state actors try to organize the international system to help manage crucial issues such as the development and use of force, the efficiency and fairness of markets, and the realization and protection of human rights and environmental health (Typically offered: Spring)
This course is cross-listed with INST 3803.

## PLSC 3813. International Law. 3 Hours.

Analysis of the traditional principles of public international law including the law of war, the law of sea and air, and the legal nature of statehood; and analysis of selected principles of private international law relevant to such topics as the multinational corporation, international arbitration, commerce with Communist states, and the expropriation of foreign property. Prerequisite: Junior standing. (Typically offered: Fall)

PLSC 3823. Theories of International Relations. 3 Hours.
Analysis of major intellectual traditions in the field of international relations, including realism, liberalism, and social constructivism. Emphasis will be placed on how they help us to understand war, revolution, global capitalism, nationalism, peace, and other significant international phenomena. Prerequisite: PLSC 2003 and PLSC 2013. (Typically offered: Spring)

## PLSC 3853. American Foreign Policy. 3 Hours.

The structure and process for making and implementing the foreign policy of the United States, and an evaluation of current policies in the contemporary international milieu. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Fall)
PLSC 390V. Special Topics. 1-3 Hour.
Special topics in political science. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
PLSC 3923H. Honors Colloquium. 3 Hours.
Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit.
PLSC 394V. Readings in Political Science. 1-3 Hour.
For advanced students who wish to study some field of political science beyond the course offering available in that field. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## PLSC 394VH. Honors Readings in Political Science. 1-3 Hour.

For advanced students who wish to study some field of political science beyond the course offering available in that field. Prerequisite: Junior standing and honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is equivalent to PLSC 394 V .

## PLSC 3983. Politics in Literature. 3 Hours.

Analysis of political theories and issues through extensive reading and discussion of selected works of literature. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Spring)

## PLSC 400V. Special Topics. 1-3 Hour.

Topics in political science not usually covered in other courses. (Typically offered: Irregular) May be repeated for degree credit.

PLSC 406V. Independent Study in Political Science. 1-3 Hour.
Independent study in political science. Arranged in agreement and under the guidance of a faculty member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
PLSC 4083. Portrayals of Hitler in Film. 3 Hours.
Introduction to the construction and deconstruction of Hitler's image in fictional movies produced in the United States, the United Kingdom, and Germany after 1945, through a lens of postmodern thought and cultural theory. (Typically offered: Irregular)

PLSC 4093. Politics and Policy on Film. 3 Hours.
An examination of the ways in which politics, government, policymakers, and public policy issues are portrayed on film. Selections vary, but may include historic and contemporary works, independent films and blockbusters, fictional works, biopics, and documentaries. Heavy emphasis on independent research and informed discussion, focused on the context in which the works were made and the ways they were received by audiences. (Typically offered: Irregular)
PLSC 4103. Introduction to Urban Planning. 3 Hours.
Reviews the many forms, functions, and purposes of American cities. Covers basic planning theories, surveys the various sub-fields of planning, discusses trends in the planning field, and utilizes computer simulations. (Typically offered: Fall)

## PLSC 4113. Introduction to Urban Planning II. 3 Hours.

Advanced analysis of comparative urban systems, including political process, public policy, social problems, governmental structure, and voter behavior. Prerequisite: PLSC 4103 or instructor consent. (Typically offered: Irregular)

## PLSC 4143. U.S. Environmental Politics and Policy. 3 Hours.

Surveys recent patterns of environmentalism in the U.S. and explores the nature of policy making with regard to environmental and economic development issues. Topics may include conservation vs. preservation, multiple use vs. sustainability, intergovernmental policy implementation, incentives, and free market environmentalism. Prerequisite: PLSC 2003. (Typically offered: Spring and Summer)

## PLSC 4153. Public Policy. 3 Hours.

A study of public policy formulation, implementation, and evaluation at various levels of government. Prerequisite: PLSC 2003. (Typically offered: Fall)

## PLSC 4173. Community Development. 3 Hours.

Encompasses the political, economic, and social issues that shape contemporary communities. This class examines substantive issues in community development, related theories and techniques. A major focus of the course will be on low-income and minority neighborhoods and efforts to create more inclusive communities in the United States and abroad. Prerequisite: Junior standing. (Typically offered: Fall)

## PLSC 4183. The Evolution of Nonprofits and Philanthropy. 3 Hours.

Introduction to the history of philanthropy. Examines philanthropy at the intersection of anthropological theories of giving, social theories related to types of capital and capital exchanges, and economic theories about the role of philanthropy for national economies. (Typically offered: Irregular)

## PLSC 4193. Administrative Law. 3 Hours.

Legal aspects of the administrative process and the effect of legal principles and processes upon administrative decision-making. Emphasis is given to the limitation of administrative discretion and the judicial review of administrative decisions. Prerequisite: PLSC 2003. (Typically offered: Spring)

## PLSC 4203. American Political Parties. 3 Hours.

The nature, function, and history of political parties in the United States with emphasis on party membership, organization, campaign techniques, finance and electoral alliances. Prerequisite: PLSC 2003. (Typically offered: Irregular)

## PLSC 4213. Campaigns and Elections. 3 Hours.

This course examines the American electoral process. It is an empirical course that provides opportunities for original analysis of survey data and election returns. Emphasis is placed on the most recent federal election. Prerequisite: PLSC 2003 (Typically offered: Irregular)

## PLSC 4223. Gender and Justice in the U.S.. 3 Hours.

Provide students with a historic and contemporary overview of the laws, policies, and politics surrounding gender, citizenship, and justice in the United States. Explores how law and public policy have affected the lives of marginalized sex and gender groups in the United States as well as the political dynamics surrounding gender and sexuality law. (Typically offered: Spring Odd Years)
This course is cross-listed with GNST 4223.

PLSC 4233. The American Chief Executive. 3 Hours.
Offices and roles of the President and state governors of the United States focusing on the evolution of the offices in terms of responsibilities and political leadership. Prerequisite: PLSC 2003. (Typically offered: Spring)

## PLSC 4243. Minority Politics. 3 Hours.

Reviews political action and concepts of political activity by minority groups, focusing on contemporary political behavior. Prerequisite: PLSC 2003. (Typically offered: Spring)

## PLSC 4253. The U.S. Constitution I. 3 Hours.

United States Supreme Court decisions involving the functions and powers of Congress, the Supreme Court, and the President and federalism. Prerequisite: PLSC 2003. (Typically offered: Spring)

PLSC 4263. The U.S. Constitution II. 3 Hours.
United States Supreme Court decisions interpreting the political, economic, and civil rights of individuals and groups. Prerequisite: PLSC 2003. (Typically offered: Irregular)

## PLSC 4273. Political Psychology. 3 Hours.

Examines role of the individual in the polity including basic psychological constructs of relevance to political action, the formulation and maintenance of stable political orientations, the patterns linking the individual to the polity, and major modes of inquiry. Prerequisite: PLSC 2003. (Typically offered: Irregular)

## PLSC 4283. Federalism and Intergovernmental Relations. 3 Hours.

Analysis of changes in intergovernmental relations in the American federal system. Discussions will focus on political, economic/fiscal and administrative aspects of policy changes of the pre-and post-Reagan eras. (Typically offered: Spring Even Years)

## PLSC 4303. History of Political Parties in the U.S. 1789-1896. 3 Hours.

Origin and development of the American party system from the implementation of the Constitution to the election of McKinley. (Typically offered: Fall Even Years) This course is cross-listed with HIST 4503.

## PLSC 4313. History of Political Parties in the United States Since 1896. 3

## Hours.

Response of the party system to America's emergence as an industrial nation and world power from the election of 1896 to present. (Typically offered: Spring Odd Years)
This course is cross-listed with HIST 4513.
PLSC 4323. Racial Identity, Politics, and Public Policy. 3 Hours.
Examines how race and perceived racial differences affect political discourse, mobilization, representation, and political outcomes. Prerequisite: PLSC 3293 or AAST 1003 or Junior standing. (Typically offered: Spring Even Years)
This course is cross-listed with AAST 4323.
PLSC 4333. Southern Politics. 3 Hours.
Evaluates the significance of the southern region within the national political scene, as well as discusses the unique political history and workings of the region. Explores the various groups within the region that continue to fight for political influence and power. (Typically offered: Spring)

PLSC 4343. Money and Politics. 3 Hours.
Familiarizes students with the world of money and politics in the United States. Examines the function of money in elections, the legal aspects, and the consequences of the regulatory environment. Provides a means to gain analytic computer skills and a strong foundation for further study of political science.
(Typically offered: Fall)
PLSC 4373. Political Communication. 3 Hours.
Study of the nature and function of the communication process as it operates in the political environment. (Typically offered: Spring Even Years)
This course is cross-listed with COMM 4373.

PLSC 4513. Creating Democracies. 3 Hours.
Analyses of the creation of democracies in Europe, South America, Asia, Africa, the Middle East, East Europe, and the former Soviet Union. Prerequisite: PLSC 2013. (Typically offered: Fall Even Years)

PLSC 4523. Introduction to Gender and Politics in the Middle East. 3 Hours. Introduces the complexities of women's political lives in the Middle East by studying gender roles, relations and how identities are constructed during different political moments. (Typically offered: Fall)

PLSC 4533. China's Foreign Trade and International Order: History, Policy, and Theory. 3 Hours.
This interdisciplinary course explores China's foreign trade and international order by introducing students to the historical context and economic theory necessary for understanding China's role in the international trading system from the ancient past to the contemporary era. (Typically offered: Irregular)

## PLSC 4563. Government and Politics of Russia. 3 Hours.

Study of Russian and Soviet politics after 1917 and of the democratization of Russia and the other successor states. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Spring Even Years)

## PLSC 4573. Gender and Politics. 3 Hours.

Examines the significance of gender in politics. Includes discussion of the women's movement and feminist theory, but emphasizes the content and process of public policy as it relates to women and men. Focus is on the U.S. but final third is devoted to comparative topics. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Irregular)

## PLSC 4583. Political Economy of East Asia. 3 Hours.

Development strategies and policies of major economies in East Asia. Topics include theories for East Asia's economic growth, dynamics and process of East Asian political and economic developments, strengths and limits of the East Asian development model, Asian values and their implications for Asian-style democracy, and dynamics of regional cooperation. (Typically offered: Spring)

## PLSC 4593. Islam and Politics. 3 Hours.

Compares contemporary Islamist political movements. Seeks to explain causes, debates, agendas, and strategies of Islamists in the political realm. Addresses sovereignty, the rule of law, visions of the good state and society, and relations between nationalism, religion and political development. Focus on Middle East with comparative reference to other cases. (Typically offered: Fall)

## PLSC 4613. Social Network Analysis. 3 Hours.

Introduces the fundamentals of Social Network Analysis (SNA), and its applications for research in various social science fields. Prerequisite: SOCI 2013. (Typically offered: Fall)
This course is cross-listed with SOCI 4183.

## PLSC 4633. Citizenship in the Middle East. 3 Hours.

Explores citizenship in the Middle East and North Africa (MENA) with a focus on theoretical and empirical illustrations. Theoretically grounded in comparative politics, and empirically engaged with case studies on citizenship formation, students will develop an understanding of the complex debates and challenges which shape this sub-field of political science. (Typically offered: Fall Odd Years)

## PLSC 4793. Latino/Hispanic Political Thought. 3 Hours.

A survey course designed to examine the development of Latino/Hispanic political thought from Iberian and Latin American political culture and philosophy to contemporary US political ideology/thought. (Typically offered: Spring)

PLSC 4793H. Honors Latino/Hispanic Political Thought. 3 Hours.
A survey course designed to examine the development of Latino/Hispanic political thought from Iberian and Latin American political culture and philosophy to contemporary US political ideology/thought. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to PLSC 4793.

PLSC 4803. Foreign Policy Analysis. 3 Hours.
Comparative analysis of foreign policy, with attention paid to explanations at a variety of levels, such as the individual, group, organizational, societal, systemic. (Typically offered: Irregular)

## PLSC 4813. Chinese Foreign Policy. 3 Hours.

Provides an introduction to Chinese foreign policy. Key topics covered include the historical, domestic, and international contexts of Chinese foreign policy, China's relations with key partner countries, security strategies, foreign economic relations, and evolving role in global governance. (Typically offered: Fall)

## PLSC 4823. Foreign Policy of East Asia. 3 Hours.

This course provides an introduction to the international relations of two major East Asian states, China and Japan. Key topics include: China and Japan's interaction with the world political and economic systems; domestic sources of international behavior and major dimensions of foreign policy in the 1980s and 1990s. (Typically offered: Spring)
This course is cross-listed with AIST 4823.
PLSC 4833. International Political Economy. 3 Hours.
This course provides an analysis of the interaction between politics and markets in the world economy. Its central objective is to illustrate how political and state actions have shaped and been shaped by the development of the global economy. (Typically offered: Fall)

## PLSC 4843. The Middle East in World Affairs. 3 Hours.

An analysis of geo-political and socio-economic characteristics of Middle Eastern societies and their impact on world economic and political order. Special attention to such issues as the Arab-Israeli conflict, the promotion of lasting peace in the region, impact of oil on world politics, the involvement of superpowers, rehabilitation of Palestinian refugees and the role of the United Nations. (Typically offered: Spring)
PLSC 4853. International Norms and Corporate Social Responsibility. 3 Hours. This course focuses on the interplay between international social expectations and business strategy. How norms prevail and why norms emerge will be observed from a business vantage point. Pre- or corequisite: PLSC 2003 or PLSC 2013. (Typically offered: Spring)

## PLSC 4863. Political Psychology and International Relations. 3 Hours.

Examines psychological approaches to international relations and examines how these perspectives advance the study of world politics. (Typically offered: Irregular)

PLSC 4883. Politics of International Law. 3 Hours.
This course examines the interaction between law and politics in the international system, focusing on international law. (Typically offered: Irregular)

## PLSC 4893. International Negotiation and Mediation. 3 Hours.

This course examines international negotiations and mediation. International negotiation refers to the processes and methods by which state and non-state actors reach agreements through persuasion and similar non-violent means. This course analyzes the processes, methods, and mechanisms, and challenges of international negotiations and the growing use of mediation. (Typically offered: Irregular) This course is cross-listed with INST 4893.
PLSC 4913. International Studies Seminar. 3 Hours.
Intensive study of key global issues and aspects of international affairs, culminating in a research project that meets the Fulbright College writing requirement. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit. This course is equivalent to INST 4913.

## PLSC 4913H. Honors International Studies Seminar. 3 Hours.

Intensive study of key global issues and aspects of international affairs, culminating in a research project that meets the Fulbright College writing requirement.
Prerequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to INST 4913.

PLSC 4933. African American Political Ideology. 3 Hours.
A survey course designed to identify and examine characteristics and functions of several variants of black political ideology/thought. (Typically offered: Spring Odd Years)
This course is cross-listed with AAST 4933.
PLSC 498V. Senior Thesis. 1-6 Hour.
Senior Thesis. (Typically offered: Fall, Spring and Summer)
PLSC 499VH. Honors Essay. 1-6 Hour.
To be used for completing a Political Science Honors Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## Psychology (PSYC)

Douglas A. Behrend
Chair of the Department
216 Memorial Hall
479-575-4256
Email: psycapp@uark.edu
Department of Psychological Science Website (https://fulbright.uark.edu/ departments/psychological-science/)

The Department of Psychological Science offers a major leading to a Bachelor of Arts in psychology. Psychologists are the scientists of human behavior and mental processes. They approach these areas from a variety of perspectives.

Clinical psychologists seek to identify the causes of abnormal behavior and to change these behaviors so their clients can live more satisfying and rewarding lives. Cognitive psychologists are interested in how knowledge and behavior are acquired, retained, and retrieved. Developmental psychologists study physical, cognitive, and social changes that occur throughout an individual's life. Neuroscientists are concerned with the biological bases of behavior. Social psychologists investigate Social psychologists study our thoughts and feelings about ourselves and other people. Each of these perspectives is represented by members of the faculty in the Fulbright College Department of Psychological Science.

The Department of Psychological Science is one of the largest and most productive departments in the university in many ways. Our faculty members are active researchers who bring their scientific excitement and curiosity into the classroom. In addition the faculty is deeply committed to providing individualized training to our students, which is accomplished through experience in a faculty member's lab, or perhaps doing an honors project. We are one of the largest undergraduate majors, and our graduates pursue graduate training in many areas, including counseling, psychology, business, law, and medicine. Other graduates enter the workforce in diverse areas, including human and social services, business, banking, and non-profit organizations.

For requirements for advanced degrees in psychology, see the Graduate School Catalog.

## Requirements for B.A. Degree with a Major in Psychology

Students must complete 120 degree credit hours to include the minimum University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/), the Fulbright College of Arts and Sciences Graduation Requirements (p. 273), and following course requirements for the major. Bolded courses from the list below may be applied to portions of the University Core requirements.

A minimum of 42 semester hours, including:
2003 Intermediate I of any World Language. ${ }^{1}$

| PHIL 2003 | Introduction to Philosophy (ACTS Equivalency <br> o PHIL 1103) |
| ---: | :--- |
| or PHIL 2103 | Introduction to Ethics (ACTS Equivalency = PHIL <br> 1003 ) |

Select one of the following. Must complete with a grade of "C" or 3-4 better:

| MATH 2043 | Survey of Calculus (ACTS Equivalency $=$ MATH <br> 2203) |
| :---: | :--- |
| MATH 2053 | Finite Mathematics |

MATH 2053 Finite Mathematics
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)
33 semester hours in psychology to include:

| PSYC 2003 | General Psychology (ACTS Equivalency = PSYC 1103) | 3 |
| :---: | :---: | :---: |
| PSYC 2013 | Introduction to Statistics for Psychologists | 3 |
| PSYC 3073 | Research Methods | 3 |
| Select two of the following: |  | 6 |
| PSYC 3013 | Social Psychology |  |
| PSYC 3023 | Abnormal Psychology |  |
| PSYC 3093 | Developmental Psychology (ACTS Equivalency = PSYC 2103) |  |
| PSYC 4053 | Psychological Tests |  |
| PSYC 4063 | Psychology of Personality |  |
| Select two of the following: |  | 6 |
| PSYC 3103 | Cognitive Psychology |  |
| PSYC 4073 | Psychology of Learning |  |
| PSYC 4123 | Perception |  |
| PSYC 4143 | History and Systems of Psychology |  |
| PSYC 4183 | Behavioral Neuroscience |  |
| PSYC 4193 | Comparative Psychology |  |
| Select three hours from one of the following: |  | 3 |

$$
\begin{array}{ll}
\text { PSYC } 4083 & \text { Advanced Research } \\
\text { PSYC } 4283 & \text { Advanced Seminar }
\end{array}
$$

Nine hours of electives and may be chosen from any psychology
course in this catalog, with no more than a total of six hours in PSYC 206V, PSYC 207V, and PSYC 399VH combined.
A grade of "C" or better is required in all psychology courses used to satisfy the 33 hours of psychology courses. In addition, a 2.00 cumulative grade-point average is required on all work completed in the Department of Psychology.

## Total Hours

42-46
1 This is usually accomplished through completion of a sequence of two language courses: 1013 and 2003.

Students who want to pursue graduate training in psychology are advised to begin preparations early in their undergraduate careers. Grade-point average, scores on the Graduate Record Examinations, effective communications skills, preparation in the natural sciences and mathematics, and research experience (e.g., honors project, directed readings, laboratory experience) are the major criteria considered by admissions committees. To gain this research experience students are strongly encouraged to take the advanced research course, PSYC 4083.

Students with applied, paraprofessional, or human-service interests who plan to enter the job market with a B.A. in psychology are strongly encouraged to take relevant courses in other areas of interest, including, but not limited to, anthropology, sociology, social work, human development and family studies, education, and business administration.

Students interested in business applications of psychology (e.g., marketing, management) are similarly encouraged to take related courses in the Sam M. Walton College of Business; minors are also available in several areas of business. For more information concerning psychology as a major or careers in psychology and related fields, please contact the Psychology Advising Coordinator, Memorial Hall, room 203.

Writing Requirement: Students majoring in psychology will satisfy the Fulbright College writing requirement by successful completion (a grade of at least a "C") in either PSYC 4083 or PSYC 4283, each of which requires a final research paper written in American Psychological Association style.

## Psychology B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university core requirements of the program. Courses in psychology groups A, B and Capstone courses are listed after the program plan.

| First Year | Fnits |
| :--- | ---: | ---: |
| Spring |  |

PSYC 2013 Introduction to Statistics for Psychologists ${ }^{1}$
or PSYC 2003 (if not taken earlier)
Science State Minimum Core Lecture with
Corequisite Lab requirement (Satisfies General
Education Outcome 3.4)
2003 Intermediate I World Language Course (as
needed)

| Year Total: | 15 | 16 |
| :--- | ---: | ---: |
| Second Year | Fall | Units <br> Spring |
| PSYC Course from Group A |  |  |
| Select one of the following: | 3 |  |
| S.3 | 3 |  |

ect one of the following.
PSYC 3073 Research Methods ${ }^{1,3}$
PSYC 2013 Introduction to Statistics for Psychologists ((if not taken earlier)) ${ }^{1}$
Satisfies General Education Outcomes 3.2 and 5.1:
PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103)
or PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003)
State Core Fine Arts or U.S. History/Government requirement (Satisfies General Education Outcome 3.1 or 4.2$)^{4}$

State Minimum Core Social Sciences requirement
(Select a course which satisfies General Education
Outcomes 3.3 and 4.1) ${ }^{5}$
Advanced Level Elective ${ }^{1}$
Select one of the following:
PSYC 3073 Research Methods ${ }^{1,3}$
State Minimum Core Social Sciences
requirement (Satisfies General Education
Outcome 3.3) ${ }^{2}$
PSYC from Group A or $B^{1,3}$
State Minimum Core U.S. History/Government or Fine Arts requirement (as needed) (Satisfies
General Education Outcome 4.2 or 3.1$)^{4}$
General Elective
Year Total:
Third Year
PSYC Course from Group A or B (as ne
Select one of the following (Satisfies Ge
Education Outcomes 1.2 and 6.1 ):
PSYC 4083 Advanced Research
PSYC 3000-4000-level Elective

Science State Minimum Core Lecture with
Corequisite Lab requirement (Satisfies General
Education Outcome 3.4)
General Electives
6
Select one of the following:
${ }_{3}$ PSYC Course from Group A or B (as needed) ${ }^{1 \text {, }}$ 3

## Group A

Select two of the following:

| PSYC 3013 | Social Psychology |
| :--- | :--- |
| PSYC 3023 | Abnormal Psychology |
| PSYC 3093 | Developmental Psychology (ACTS Equivalency = <br> PSYC 2103) |
| PSYC 4063 | Psychology of Personality |
| PSYC 4053 | Psychological Tests |
| Group B |  |

Select two of the following:

| PSYC 3103 | Cognitive Psychology |
| :--- | :--- |
| PSYC 4073 | Psychology of Learning |
| PSYC 4123 | Perception |
| PSYC 4143 | History and Systems of Psychology |
| PSYC 4183 | Behavioral Neuroscience |
| PSYC 4193 | Comparative Psychology |

## PSYC Capstone Courses

Three hours required with a grade of "C" or higher.

```
    PSYC 4083 Advanced Research
    PSYC 4283 Advanced Seminar
```


## Requirements for a Minor in Psychology

Minimum of 18 hours in psychology including:

| PSYC 2003 | General Psychology (ACTS Equivalency = PSYC <br> 1103) | 3 |
| :--- | :--- | ---: |
| PSYC 2173 | Research Literacy in Psychological Science | 3 |
| PSYC Electives |  | 12 |

A maximum of three hours of PSYC 206V and/or PSYC 207V can be counted toward meeting the minor requirement.

## Total Hours

A grade of "C" or better is required in all psychology courses used to satisfy the 18 hours of the minor. In addition, a 2.00 cumulative gradepoint average is required on all work completed in the Department of Psychology. Students must consult with, and obtain the signature of, the Director of Undergraduate Studies in the department in order to declare a minor.

Requirements for Graduation with Honors in Psychology: Both the College and the Departmental Honors Program in Psychology provide undergraduate students with an opportunity to formally participate in scholarly psychology activities. Honors candidates carry out independent study and research under the guidance of the Psychological Science faculty and participate in special honors classes, seminars, and colloquia. Admission to the Fulbright College Honors Program is open to psychology majors with a minimum, cumulative grade point average of 3.5 in all coursework. Honors candidates must complete a minimum of 12 hours of honors courses, which may include up to 6 hours of thesis. In addition to satisfying the general college honors requirements, honors candidates in psychology are required to complete and orally defend an honors thesis based upon the independent study carried out in PSYC 399VH. To complete the required thesis successfully, students should choose an honors adviser as early as possible. An adviser should be selected, and an Honors Agreement completed, no later than the first semester in a student's junior year. Students must register for, and complete, a minimum of 6 hours of PSYC 399VH. PSYC 399VH may be taken for 1 to 6 hours of credit each semester and repeated for a maximum of 12 hours.

Nine hours are ordinarily needed to complete the research project and to prepare the honors thesis.

College honors candidates must meet the college's requirements for an honors degree. Departmental honors candidates in psychology are encouraged to enroll in as many honors classes, seminars, and colloquia as possible, or as required by the honors program in which they are enrolled. Students graduating with honors typically graduate cum laude. Higher degree distinctions (magna cum laude, summa cum laude) are awarded by the Honors Council, recommended only in truly exceptional cases, and are based upon the whole of the candidate's program of honors studies.

## Psychology (B.A.) Teacher Licensure in Social Studies Requirements:

Please refer to the Secondary Education Requirements (p. 276) for Fulbright College Students.

Students wanting to teach social studies in middle school should consult with a middle level adviser in the College of Education and Health Professions.

## Faculty

Alwood, Nancy D., Ph.D., M.S. (University of Arkansas), Instructor, 2012. Behrend, Douglas A., Ph.D. (University of Minnesota), B.A. (Kalamazoo College), Professor, 1989, 2009.
Beike, Denise R., Ph.D., B.A. (Indiana University), Professor, 1995, 2010.
Bridges, Ana Julia, Ph.D. (University of Rhode Island), M.S. (Illinois State University), B.S. (University of Illinois-Urbana-Champaign), Professor, 2007, 2019.
Brown, Mitchell J., Ph.D. (University of Southern Mississippi), M.A. (University of Dayton), B.A. (Lake Erie College), Instructor, 2022.
Cavell, Timothy A., Ph.D. (Louisiana State University), M.S. (Texas A\&M University), B.A. (Louisiana State University), Professor, 2002.
Chapman, Kate M., Ph.D., M.S. (Penn State University), B.A. (New Florida College), Teaching Assistant Professor, 2016.
Ditzfeld, Christopher, M.S. (University of Oklahoma), Instructor, 2011. Dopp, Alex R., Ph.D., M.A. (University of Missouri), B.A. (University of Michigan), Assistant Professor, 2016.
Eidelman, Scott H., Ph.D. (University of Kansas), B.A. (University of Wisconsin-Madison), Associate Professor, 2008, 2013.
Feldner, Matthew T., Ph.D. (University of Vermont), M.A. (West Virginia University), B.S. (University of Wisconsin-Stevens Point), Professor, 2005, 2015.

Forscher, Patrick, Ph.D. (University of Wisconsin), B.A. (Macalester College), Assistant Professor, 2017.
Ham-Holm, Lindsay S., Ph.D., M.A., B.A. (University of NebraskaLincoln), Associate Professor, 2007, 2012.
Holm, Jeremy, M.A., B.S. (University of Nebraska), Instructor, 2008.
Judah, Matt, Ph.D., M.S. (Oklahoma State University), B.A. (Ozark Christian College), Assistant Professor, 2020.
Lamm, Connie, Ph.D., M.A. (University of Toronto, Canada), B.A. (University of Waterloo), Assistant Professor, 2016.
Lampinen, James Michael, Ph.D., M.S. (Northwestern University), B.S. (Elmhurst College), Distinguished Professor, 1998, 2016.
Leen-Feldner, Ellen Winifred, Ph.D. (University of Vermont), M.A. (West Virginia University), B.A. (University of Notre Dame), Professor, 2005, 2017.

Leong, Josiah, Ph.D. (Stanford University), B.A. (University of California, Berkeley), Assistant Professor, 2020.
Levine, William H., Ph.D., M.S. (State University of New York at Binghamton), B.S. (DePaul University), Associate Professor, 2001, 2007.

Makhanova, Anatasia, Ph.D. (Florida State University), B.A. (Hendrix College), Assistant Professor, 2019.
Parks, Nathan A., Ph.D., M.S. (Georgia Institute of Technology), B.A. (University of Virginia), Assistant Professor, 2012.
Quetsch, Lauren, Ph.D., M.S. (West Virginia University), B.A.
(Georgetown University), Assistant Professor, 2019.
Shields, Grant, Ph.D., M.A. (University of California, Davis), B.A.
(Simpson College), Assistant Professor, 2020.
Vargas, Ivan, Ph.D. (University of Michigan), B.S. (Notre Dame University), Assistant Professor, 2019.
Veilleux, Jennifer Celene, Ph.D., M.A. (University of Illinois at Chicago), B.A. (Macalaster College), Associate Professor, 2011, 2017.

Zabelina, Darya, Ph.D. (Northwestern University), Assistant Professor, 2017.

Zamboanga, Byron L., Ph.D., M.A. (University of Nebraska), B.A. (University of California, Berkeley), Professor, 2020.
Zies, Brenda June, Ph.D., M.A. (University of Arkansas), B.S. (East Texas State University), Teaching Assistant Professor, 2005.

## Courses

PSYC 2003. General Psychology (ACTS Equivalency = PSYC 1103). 3 Hours.
An introduction to the field of Psychology, including the investigation of the biological bases of behavior; learning and cognitive processes; developmental and social psychology; and personality, psychopathology, and the treatment of psychological disorders. Students will be expected to complete a research requirement. (Typically offered: Fall, Spring and Summer)

## PSYC 2003H. Honors General Psychology. 3 Hours.

An introduction to the field of Psychology, including the investigation of the biological bases of behavior; learning and cognitive processes; developmental and social psychology; and personality, psychopathology, and the treatment of psychological disorders. Students will be expected to complete a research requirement. (Typically offered: Fall and Spring)
This course is equivalent to PSYC 2003.

## PSYC 2013. Introduction to Statistics for Psychologists. 3 Hours.

Introduction to the descriptive and inferential statistics commonly used by psychologists. A grade of C or better in PSYC 2013 is required as a prerequisite for PSYC 3073. Corequisite: Drill component. Prerequisite: PSYC 2003 and MATH 2043 or MATH 2053 or MATH 2554, with a grade of $C$ or better, and a Psychology major. (Typically offered: Fall, Spring and Summer)
PSYC 2043. The Psychology of Health and Well-being. 3 Hours.
Introduces students to the application of psychological science to healthy, meaningful living across the age span. Explores key research findings related to issues in modern living, including social connections, emotional adjustment, romantic relationships, parenting and schooling, family life, and work life. Prerequisite: PSYC 2003. (Typically offered: Spring)
PSYC 206V. Directed Readings. 1-4 Hour.
For undergraduate majors in psychology. Prerequisite: Six hours of psychology; Instructor's permission. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## PSYC 207V. Laboratory Experience. 1-4 Hour.

Laboratory experience in psychology obtained by working as part of a faculty member's research team. Prerequisite: PSYC 2003 and Instructor's permission. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

PSYC 2173. Research Literacy in Psychological Science. 3 Hours.
Training in critical evaluation of research in psychological science, including understanding statistics and research methods used by psychologists. Prerequisite: PSYC 2003 and a psychology minor. (Typically offered: Fall and Spring)

PSYC 3013. Social Psychology. 3 Hours.
Theories and representative research in social psychology, emphasizing the influence of the social world on human behavior. Introduction to the problems, theories, and experiments of social psychology. Prerequisite: PSYC 2003. (Typically offered: Fall and Spring)

PSYC 3023. Abnormal Psychology. 3 Hours.
Theories and representative research about the causes and treatment of the major forms of abnormal behavior. Prerequisite: PSYC 2003. (Typically offered: Fall and Spring)

## PSYC 3063. Psychology of Diversity. 3 Hours.

Introduction to the psychology of diversity, including historical perspectives, biological and social bases of bias, individual differences, social identity, intergroup interactions, and power and privilege. Prerequisite: PSYC 2003. (Typically offered: Fall Even Years)

## PSYC 3073. Research Methods. 3 Hours.

Training in execution and interpretation of experiments using the classical experimental designs. Limited enrollment. Prerequisite: PSYC 2013 and (MATH 2043, or MATH 2053, or MATH 2554) with a grade of "C" or better and a psychology major. (Typically offered: Fall and Spring)
PSYC 3093. Developmental Psychology (ACTS Equivalency = PSYC 2103). 3 Hours.
Theories and representative research in the psychological factors influencing development, including both hereditary and environmental influences, from conception through adolescence. Prerequisite: PSYC 2003. (Typically offered: Fall and Spring)

## PSYC 3103. Cognitive Psychology. 3 Hours.

Introduction to theories and research in cognition including memory, language, and problem-solving. Prerequisite: PSYC 2003. (Typically offered: Spring)

## PSYC 3173. Biopsychology. 3 Hours.

An introduction to the biological basis of behavior. Lectures cover current research about the neural correlates underlying sensory, motor, cognitive, and emotional processes. Prerequisite: PSYC 2003. (Typically offered: Spring)

## PSYC 3923H. Honors Colloquium. 3 Hours.

Treats a special topic or issue, offered as part of the honors program. May be repeated when the content is changed. Prerequisite: honors candidacy (not restricted to candidacy in psychology). (Typically offered: Irregular) May be repeated for degree credit.

## PSYC 399VH. Honors Course. 1-6 Hour.

Honors course. Prerequisite: Junior standing and instructor's permission. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.
PSYC 4033. Educational Psychology. 3 Hours.
Psychological theories and concepts applied to the educational process. Investigates the learner and instructional variables in a wide range of educational settings. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular)

## PSYC 4053. Psychological Tests. 3 Hours.

Nature and theory of individual and group tests of intelligence, personality, interests, and attitudes. Prerequisite: Nine hours of psychology, including a C or better in PSYC 2013. (Typically offered: Irregular)

## PSYC 4063. Psychology of Personality. 3 Hours.

Theories and representative research concerning the development and nature of the normal personality. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular)

## PSYC 4073. Psychology of Learning. 3 Hours

Theories and representative research on basic principles of learning and memory in both animals and humans. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Spring)

## PSYC 4083. Advanced Research. 3 Hours.

A lecture/laboratory course covering research in a specialized area of psychology. Provides experience with design, conduct, analysis, and presentation of research projects related to class topics. Successful completion of the class, including a formal paper in APA style, with a grade of $C$ or better will fulfill the senior writing requirement. Prerequisite: Eighteen hours of psychology including a grade of at least a C in PSYC 3073 and senior standing. (Typically offered: Fall and Spring)

## PSYC 409V. Psychology Seminar. 1-3 Hour.

Provides intensive coverage of specialized psychological topics. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

## PSYC 4123. Perception. 3 Hours.

Theories and representative research in the areas of sensation and perception. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular)

PSYC 4143. History and Systems of Psychology. 3 Hours.
Examination of the concepts, methods, and systems which have contributed to the development of modern psychology. Prerequisite: Fifteen hours of psychology and senior standing. (Typically offered: Irregular)

## PSYC 4183. Behavioral Neuroscience. 3 Hours.

Examination of the biological basis of behavior. Surveys the anatomy, physiology and pharmacology of the mammalian brain and examines brain mechanisms underlying a wide range of behaviors and cognitive processes. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Fall)

PSYC 4193. Comparative Psychology. 3 Hours.
Analysis of animal behavior from an evolutionary perspective, with emphasis on the role of the environment and interactions with other animals in shaping the evolution of behavior within a species, and the evolution of differences in behavior between species. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Spring)

## PSYC 4283. Advanced Seminar. 3 Hours.

A seminar/discussion class covering research in specialized areas of psychology. Students will read original sources and present their ideas and conclusions several formats. Successful completion of the class, including a formal paper in APA style, with a grade of C or better will fulfill the senior writing requirement. Prerequisite: Eighteen hours of psychology including a grade of at least a C in PSYC 3073; senior standing. (Typically offered: Fall and Spring)

## PSYC 4433. Philosophy of Psychology. 3 Hours.

Explores philosophical issues concerning the domain, foundations and methodology of psychology, and the relation of psychological explanations to other scientific and philosophical investigations of the mind. Topics include cognitive architecture and the evolution of minds, extended or embodied cognition, perception and introspection, consciousness and attention, social cognition, thought and language. (Typically offered: Irregular)
This course is cross-listed with PHIL 4433.

## Religious Studies (RLST)

Nikolay Antov
Director of Religious Studies
503 Old Main
479-575-5882

Religious Studies Website (https://fulbright.uark.edu/programs/religiousstudies/)

Minor Program Requirements: Students must complete at least 15 credit hours for the minor. Of those 15 credit hours, only 3 credit hours may be from the introductory courses listed below. The remaining 12 hours must come from upper-level courses (3000-4000) selected from the 3 areas of emphasis listed below. Students must take at least one course in each area of emphasis. A maximum of 6 credit hours from the student's major may be applied toward the minor. Students may petition the Director of Religious Studies to count toward the minor special topics courses or Honors colloquia not listed below but containing significant religious studies content.

## Introductory Courses

Choose one course:
HUMN 2013 Introduction to Buddhism
HUMN 2213 Introduction to World Religions
JWST 2003 Introduction to Judaism
MEST 2003 Introduction to Islam
Areas of Emphasis
Choose at least one course from each area of emphasis and a fourth 12 from any of the areas

## History

| ARHS 4843 | Medieval Art |
| :--- | :--- |
| HIST 3003 | History of Christianity |
| HIST 3033 | Islamic Civilization |
| HIST 3083 |  |
| HIST 4043 | Late Antiquity and the Early Middle Ages |
| HIST 4053 | Late Middle Ages |
| HIST 4073 | Renaissance and Reformation, 1300-1600 |
| HIST 4103 | Byzantine Empire |
| HIST 4323 | Wars of Religion: From the Crusades to 9/11 |
| HIST 4333 | Modern Islamic Thought |
| HIST 4393 | Early Modern Islamic Empires, 1300-1750 |
| HIST 4493 | Religion in America to 1860 |
| Social Sciences |  |
| ANTH 3123 | The Anthropology of Religion |
| ANTH 3213 | Indigenous Peoples of North America: |
| ANTH 3553 | Religion in Latin America |
| ANTH 4093 | The Archeology of Death |
| ANTH 4513 |  |
| PLSC 4593 | Islam and Politics |

Philosophy/Literature/Languages
ENGL/WLIT The Bible as Literature
3623
JWST 4003 Modern Jewish Thought
JWST 4013 Contemporary Jewish Thought
MEST 3003 Islam: Beliefs and Practices
PHIL 3203 Philosophy and the Christian Faith
PHIL 4023
PHIL 4303 Philosophy of Religion
Total Hours

Topics Courses/Seminars/Honors Colloquia: Students may also choose "topics/seminar" classes or an Honors colloquium in any

Department or Program approved by the director as having a religious studies focus.

## Rhetoric and Writing Studies (RHET)

The minor in Rhetoric and Writing Studies provides non-English majors with advanced instruction in rhetorical studies and document design. Students will learn to examine the roles of language, writing, and communication in different social and professional settings. In addition to receiving practical instruction in effective writing, students will also develop analytical tools for understanding language as social action.

## Requirements for a minor in Rhetoric and Writing Studies

| Students must complete 15 hours from among the following courses: | 15 |
| :--- | :--- |
| ENGL 2003 | Advanced Composition |
| ENGL 2013 | Essay Writing |
| ENGL 2173 | Literacy in America |
| ENGL 3053 | Technical and Professional Writing (ACTS |
|  | Equivalency = ENGL 2023) |
| ENGL 3603 | Topics in Rhetoric and Composition |
| ENGL 4003 | Style and Grammar for Professional Writers |
| ENGL 4903 | Studies in Rhetoric and Composition |

Total Hours

## Social Work (SCWK)

Yvette Murphy-Erby, Director of the School of Social Work Sara Collie, Graduate Program Director
Carly Franklin, Undergraduate Program Director
Ananda Rosa, Field Education Program Director
106 SCSW
479-575-5039
School of Social Work Website (https://fulbright.uark.edu/departments/ social-work/)

The School of Social Work offers an undergraduate major leading to a Bachelor of Social Work degree. The principal objective of the undergraduate social work program is to prepare students for beginning generalist social work practice.

Social work is the professional activity of helping individuals, groups, or communities enhance or restore their capacity for social functioning and creating societal conditions favorable to this goal. Social work is a gratifying career for people who care about others, want to relieve human suffering, like a challenge, and want their work to make a difference in the world. The profession is dedicated to assisting individuals, families, groups, organizations, and communities in reaching their full potential.

Social work is particularly concerned with achieving social and economic justice for vulnerable populations and respecting and valuing human diversity. The School of Social Work at the University of Arkansas reflects the profession's fundamental concerns in its educational goals and objectives. In order to achieve its basic purposes, the school faculty, students, staff, and agency field instructors are involved in a variety of teaching, research, and outreach activities.

## Accreditation

The social work program is fully accredited at the baccalaureate and graduate level by the Council on Social Work Education (CSWE).

## Requirements for B.S.W. in Social Work Pre-Social Work (PSCWK)

The pre-social work program identifies that a student has declared social work as a major but has not yet been accepted into the professional social work core. Students classified as pre-social work are completing the course requirements necessary to qualify for admission into the professional social work core. As members of the School of Social Work, pre-social work students are encouraged to participate in events, opportunities and activities sponsored the School of Social Work in accordance with the student's progress in the program. Once a student is accepted into professional social work core, the student's designation will change to Social Work major.

## Criteria for Admission to B.S.W. Program and Professional Social Work Core

Students may declare themselves as pre-social work at any point, however formal admission to the professional core is required before a student is allowed to take the following courses that comprise the professional social work core:

| SCWK 4073 | Social Work Research and Technology I | 3 |
| :--- | :--- | :--- |
| SCWK 4103 | Human Behavior and the Social Environment II | 3 |
| SCWK 4333 | Social Work Practice I | 3 |
| SCWK 4343 | Social Work Practice II | 3 |
| SCWK 4733 | Social Work Practice III | 3 |
| SCWK 4434 | Social Work Internship I | 4 |
| SCWK 4412 | Field Seminar I | 2 |
| SCWK 4444 | Social Work Internship II | 4 |
| SCWK 4422 | Field Seminar II | 2 |

Each student must meet the following minimum academic course requirements and complete the application process outlined below.

## Minimum Academic Course Requirements

- Maintain a cumulative GPA of 2.5.
- Complete the following 9 courses, each with a grade of " C " or better.

| COMM 1313 | Public Speaking (ACTS Equivalency = SPCH <br> 1003) | 3 |
| :--- | :--- | :---: |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| PLSC 2003 | American National Government (ACTS <br> Equivalency = PLSC 2003) | 3 |
| PSYC 2003 | General Psychology (ACTS Equivalency = PSYC <br> 1103) | 3 |
| SCWK 2133 | Introduction to Social Work | 3 |
| SCWK 3193 | Human Diversity and Social Work | 3 |
| SCWK 4093 | Human Behavior and the Social Environment I | 3 |
| SCWK 4153 | Social Welfare Policy | 3 |
| SOCI 2013 | General Sociology (ACTS Equivalency = SOCI 3 <br>  1013) |  |

Complete BIOL 1543/BIOL 1541L Principles of Biology and Lab or ANTH 1013/ANTH 1011L Biological Anthropology and Lab with a grade of "D" or better.

Students must have at least a 2.5 GPA in the 10 courses listed above.

## Application Process

The application process must be completed by the announced application deadline prior to the semester in which the student will enroll in SCWK 4333 Social Work Practice I. The application packet includes the following materials:

Application Form. This form becomes the cover sheet for the application packet. Application forms are available from the online B.S.W. Student Handbook or from the social work webpage (https://fulbright.uark.edu/ departments/social-work/undergraduate/admissions.php).

Volunteer/Work Experience Form. This form provides documentation of satisfactory completion of the volunteer experience assignment in SCWK 2133 Introduction to Social Work or equivalent and submission of a positive "Supervisor's Reference Form" from the supervisor of the experience. A minimum of 30 hours of work or volunteer experience are required for admission to the Social Work Professional Core. (See appendices of B.S.W. Student Handbook (https://fulbright.uark.edu/ departments/social-work/undergraduate/) for forms).

Personal Statement. This narrative statement should include: motivation for becoming a social worker; relevant work, volunteer or life experiences; strengths and limitations for effective social work practice; personal commitment and agreement to abide by the values and ethics of the social work profession; career goals and indication of fields of practice preference or areas where one would not feel comfortable working.

Ethical Principles/Guidelines for University of Arkansas Social Work Students. By signing this statement you are acknowledging that you have read, understand and agree to abide by and behave in accordance with the "Ethical Principles/Guidelines for Social Work Students." This statement is contained in the admissions packet, and is available from the online B.S.W. Student Handbook (https://fulbright.uark.edu/departments/ social-work/undergraduate/) (see appendices) or from the social work office. A copy of this signed statement will be included in the student's advising file.

Professional Habits Reference Form. This form must be completed by two Social Work professors. These references need to be from SCWK 4153 Social Welfare Policy and SCWK 4093 Human Behavior and the Social Environment I (HBSE I) unless both courses were taken online. If this is the case, the student will choose another Social Work professor they have had in a face-to-face class along with their choice of either their SCWK 4093 or SCWK 4153 professor. If the student has had all Social Work courses in person, they will use both their Policy and HBSE I professors as references. It is the student's responsibility to request the reference from the professors via email. The email should include the student's full name and student ID\#. The instructor will submit the form directly to the B.S.W. Director. If one or both of these courses (SCWK 4093 or SCWK 4153) were successfully completed at another institution, please see the B.S.W. Director for further instructions. In addition, students should be aware that feedback from other faculty will be taken into account during the admission process. Students may view the professional habits reference form in the online B.S.W. Student Handbook (see appendices).

Documentation of Completion of Pre-Professional Courses. Students applying to the professional core must have completed the following courses:

| BIOL 1543 | $\begin{aligned} & \text { Principles of Biology (ACTS Equivalency = BIOL } \\ & 1014 \text { Lecture) } \end{aligned}$ | 3 |
| :---: | :---: | :---: |
| or ANTH 1013 | Introduction to Biological Anthropology |  |
| COMM 1313 | ```Public Speaking (ACTS Equivalency = SPCH 1003)``` | 3 |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| PLSC 2003 | American National Government (ACTS Equivalency = PLSC 2003) | 3 |
| PSYC 2003 | $\begin{aligned} & \text { General Psychology (ACTS Equivalency = PSYC } \\ & \text { 1103) } \end{aligned}$ | 3 |
| SCWK 2133 | Introduction to Social Work | 3 |
| SCWK 3193 | Human Diversity and Social Work | 3 |
| SCWK 4093 | Human Behavior and the Social Environment I | 3 |
| SCWK 4153 | Social Welfare Policy | 3 |
| SOCI 2013 | $\begin{aligned} & \text { General Sociology (ACTS Equivalency }=\text { SOCI } \\ & \text { 1013) } \end{aligned}$ | 3 |

All courses above must be successfully completed with a "C" or better, with the exception of BIOL 1543 or ANTH 1013. Note: Students must have at least a 2.5 GPA in the pre-professional courses listed above.

There are University and College requirements for general education and the Social Work degree in addition to those listed in Items 5 above. Consult your University Catalog, Social Work Student Handbook or your adviser if you have questions about these. The statistics requirement must be taken prior or during SCWK 4073 Social Work Research and Technology I.

Copy of current transcript documenting the minimum academic course requirements listed above.

The above materials are submitted to the B.S.W. Program Director and reviewed by the B.S.W. Admission Committee. If the Admissions Committee has any questions concerning the content of the materials, the student may be asked to interview with a faculty member to resolve any questions or to provide additional information.

Upon completion of the materials review and interview (if necessary), the student will be informed in writing by the B.S.W. Program Director of his or her admission status.

There are three possible admission decisions:
Unconditional Admission: These students have demonstrated through their application materials (and interview, if required) that they have the motivation and potential for competent professional social work practice and that they agree to uphold and conduct themselves in accordance with the values and ethics of professional social work practice. In addition, these students have at least a 2.5 GPA in the pre-professional courses and have an overall GPA of 2.5 .

Conditional Admission: Students with deficiencies related to the admission criteria may be granted conditional admission to the major. Students must resolve any pending issues within the time frame identified by the admission committee. Students will receive a letter that outlines the deficiencies and a plan to resolve the concerns. The letter will include specific deadlines and must be signed by both the student and the B.S.W. director. The student will be unconditionally admitted once they have met
the conditions outlined by the plan. Conditional admission may be granted for low GPA or non-GPA concerns such as writing skills, assertiveness, stress management, or working with diverse populations.

Non-acceptance: A decision of non-acceptance will be made when the student is found to be unsuited for professional social work practice. There are two criteria for non-acceptance: 1) the lack of acceptable academic performance necessary to successfully complete the requirements of the social work program, and/or 2) the inability to demonstrate commitment to social work values and ethics as they are reflected in the "Ethical Principles and Guidelines for UA Social Work Students" document that is available on-line in the B.S.W. Student Handbook and included with the forms for applying to the professional social work core (see Appendices). A decision of non-acceptance will result in the student's inability to progress in the social work program. In the event of non-acceptance, assistance with a transfer to another major will be provided upon request.

## Criteria for Retention and Continuation

In addition to the admission process, the B.S.W. Program also has requirements for retention and continuation in the major.

## Retention

Maintenance of an overall GPA of 2.5 .
Maintenance of a 2.5 GPA in social work courses.
Students must abide by and behave in accordance with the "Ethical Principles/Guidelines for UA Social Work Students".

Social work students should not engage in any activity or behavior which, according to university policy or regulations, would result in dismissal from the university community. Such activity or behavior includes, but is not limited to, sexual harassment, physical or sexual assault, and academic dishonesty. (See Undergraduate Studies Catalog for description of Academic Dishonesty, and Undergraduate Studies Catalog, Appendix C: Student Handbook for details).

## Continuation and Grading Policies

A grade of $C$ or better must be earned in all social work courses. If a student receives a grade of $D$ or $F$ in one of the professional social work core courses, the course must be retaken with a grade of $C$ or better prior to taking the course for which that course serves as a prerequisite.

1. Once matriculated into the B.S.W. program, B.S.W. students who earn a D or $F$ will be allowed to repeat this course one time. Students can repeat up to two different social work courses.
2. A student may repeat a course from which they earned a W no more than one time.
3. Any professional social work core course in which the student receives a grade of I (Incomplete) must be satisfactorily completed (with a grade of C or better) prior to entering the course for which the course receiving the Incomplete is a prerequisite.
4. Any core social work course in which the student receives a grade of 'l' (Incomplete) must be satisfactorily completed (with a grade of C or better) prior to entering the course for which the course receiving the Incomplete is a prerequisite. For example, a student receiving an 'l' in SCWK 4093 may not take SCWK 4103 or SCWK 4333 until SCWK 4093 is completed with a final grade.
5. If the student's core and/or overall GPA falls below the 2.5 GPA required for retention, the student may remain in the B.S.W. program
and take up to an additional 15 credit hours to raise their GPA to the required level. Failure to do so within these parameters will result in dismissal from the B.S.W. program. Students will be referred to the Fulbright Advising Center to change their major course of study.

## Criteria for Termination

Students may be terminated from the B.S.W. Program for the following reasons:

1. Failure to maintain minimum GPA requirements ( 2.5 cumulative overall, 2.5 for all social work courses). See item 5 under Continuation and grading policies.
2. Failure to earn a C or better in a professional social work core course after the second attempt.
3. Engaging in any activity or behavior which, according to university policy or regulations, would result in dismissal from the university community. Such activity or behavior includes, but is not limited to, sexual harassment, physical or sexual assault, and academic dishonesty.
4. Engaging in any activity or behavior incompatible with the "Standards for Social Work Education" via the process outlined in the Three Levels of Review (Section 3.2 of "Standards for Social Work Education").

Students engaging in any activity or behavior incompatible with the "Standards for Social Work Education" (available online and with the materials for application to the professional social work core; see Appendices) will result in a review by the School of Social Work's Student Retention and Success Committee. Details of the referral process for a review by the Student Retention and Success Committee can be found online in the B.S.W. Student Handbook and in the Standards for Social Work Education document.

The School of Social Work utilizes a level system to address student activity and behaviors that constitute a violation of the "Standards for Social Work Education." A Level 1 referral includes an intervention provided by an individual instructor. A Level 2 referral is made if continued issues arise after a Level 1 referral or if a student's actions take place outside of the classroom setting. Level 2 referrals require a remediation plan to address concerns and a meeting with the appropriate Program Director (B.S.W. or Field Directors). A Level 3 referral is made in cases in which a remediation plan has not been successful, or the action/behavior constitutes a serious violation. A Level 3 referral is reviewed by the Student Retention and Success Committee. If a referral is made to the Student Retention and Success Committee, this may result in termination by the School of Social Work or a decision that continuation is contingent upon completion of a corrective action plan specified by the School.

Students who disagree with these decisions may appeal. Procedures for this entire process are found in the Standards for Social Work Education. Students in the field program are governed by the UA School of Social Work Field Manual and the UA student handbook. Note: Students that have been terminated from the B.S.W. Program as a result of the having engaged in any activity or behavior incompatible with the "Standards for Social Work Education" are not eligible to re-apply for admission to the program.

## Requirements for a Major in Social Work

In addition to the state minimum core (p. 81) and the Fulbright College of Arts and Sciences Graduation Requirements (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/), the following cognate and
major course requirements must be met. Bolded courses from the list below may be applied to portions of the state minimum core requirements.

| BIOL 1543 <br> \& BIOL 1541L | Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS Equivalency $=$ BIOL 1014 Lab) |
| :---: | :---: |
| or ANTH 1013 \& ANTH 1011L | Introduction to Biological Anthropology Land Introduction to Biological Anthropology Laboratory |
| COMM 1313 | $\begin{aligned} & \text { Public Speaking (ACTS Equivalency }=\text { SPCH } \\ & \text { 1003) } \end{aligned}$ |
| $\begin{aligned} & \text { ENGL } 2003 \\ & \text { or ENGL } 2013 \end{aligned}$ | Advanced Composition Essay Writing |
| HIST 1113 | Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) |
| HIST 1123 | Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123) |
| PHIL 2003 | Introduction to Philosophy (ACTS Equivalency = PHIL 1103) |
| or PHIL 2103 | ```Introduction to Ethics (ACTS Equivalency = PHIL 1003)``` |
| PLSC 2003 | American National Government (ACTS Equivalency = PLSC 2003) |
| PSYC 2003 | General Psychology (ACTS Equivalency = PSYC 1103) |
| SOCI 2013 | ```General Sociology (ACTS Equivalency = SOCI 1013)``` |

One Statistics Course
Six hours of 3000- or 4000-level courses from AAST, ANTH, COMM,
GEOS, HESC, PLSC, PSYC, SOCI and courses applicable to gender studies as approved by the School of Social Work
Six hours of a single world language beginning at the $1013 \quad 6$
Elementary II level or higher. ${ }^{1}$
And 45 semester hours of social work courses including:

| SCWK 2133 | Introduction to Social Work | 3 |
| :--- | :--- | :--- |
| SCWK 3193 | Human Diversity and Social Work | 3 |
| SCWK 4073 | Social Work Research and Technology I | 3 |
| SCWK 4093 | Human Behavior and the Social Environment I | 3 |
| SCWK 4103 | Human Behavior and the Social Environment II | 3 |
| SCWK 4153 | Social Welfare Policy | 3 |
| SCWK 4333 | Social Work Practice I | 3 |
| SCWK 4343 | Social Work Practice II | 3 |
| SCWK 4412 | Field Seminar I | 2 |
| SCWK 4422 | Field Seminar II | 2 |
| SCWK 4434 | Social Work Internship I | 4 |
| SCWK 4444 | Social Work Internship II | 4 |
| SCWK 4733 | Social Work Practice III | 3 |
| Two Social Work | Electives | 6 |

${ }^{1}$ World language courses at the 1003 Elementary I level cannot be used to satisfy any part of the social work major's six-hour world language requirement.

Students must adhere to requirements cited for each social work course. A grade of " $C$ " or better must be earned in all core social work courses. If
a student receives a grade of " $D$ " in a core social work course, the course must be retaken with a grade of " $C$ " or better prior to taking the course for which that course serves as a prerequisite.

Writing Requirement: Social work students complete the research/ analytical writing requirement by passing SCWK 4073 with a C or better.

## Social Work B.S.W. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program. State minimum core (p. 81) hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| Satisfies General Education Outcome 2.1: |  |  |
| MATH 1203 College Algebra (ACTS Equivalency = | 3 |  |
| MATH 1103) (either math 1203 or Math 1313) |  |  |
| or MATH 1313 Quantitative Reasoning (ACTS |  |  |
| Equivalency = MATH 1113) |  |  |
| Select one of the following (Satisfies General | 3 |  |
| Education Outcome 3.3): |  |  |
| PLSC 2003 American National Government |  |  |
| (ACTS Equivalency = PLSC 2003) |  |  |
| PSYC 2003 General Psychology (ACTS |  |  |
| Equivalency = PSYC 1103) |  |  |
| SOCI 2013 General Sociology (ACTS |  |  |
| Equivalency = SOCI 1013) |  |  |
| State Minimum Core Fine Arts Course (Satisfies |  |  |
| General Education Outcome 3.1) |  |  |
| 1013 Elementary II World Language Course (or |  |  |
| higher level, depending on placement) |  |  |
| ENGL 1023 Composition II (ACTS Equivalency |  |  |
| = ENGL 1023) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| Select one of the following (Satisfies General |  |  |
| Education Outcome 3.4): |  |  |
| BIOL 1543 Principles of Biology (ACTS |  |  |
| Equivalency = BIOL 1014 Lecture) |  |  |
| \& BIOL 1541L Principles of Biology Laboratory |  |  |
| (ACTS Equivalency = BIOL 1014 Lab) |  |  |
| ANTH 1013 Introduction to Biological |  |  |
| Anthropology |  |  |
| \& ANTH 1011L Introduction to Biological |  |  |
| Anthropology Laboratory |  |  |
| Select one of the following as needed (Satisfies |  |  |
| General Education Outcome 3.3): |  |  |
| PSYC 2003 General Psychology (ACTS |  |  |
| Equivalency = PSYC 1103) |  |  |
| SOCI 2013 General Sociology (ACTS |  |  |
| Equivalency = SOCI 1013) |  |  |



| SCWK 3163 | On Death and Dying |
| :--- | :--- |
| SCWK 3233 | Contemporary Issues in Juvenile Justice |
| SCWK 4143 | Addiction and the Family |
| SCWK 4153 | Social Welfare Policy |
| SCWK 3633 | Child Welfare: 21st Century Perspectives |
| SCWK 4643 | Child Advocacy IV: Global Issues in Child Welfare |

## Requirements for a Minor in Social Work

18 hours including SCWK 2133, SCWK 3193, and SCWK 4153 (required) and any other nine hours of social work electives. A student must notify the department of his or her intent to minor. The social work minor is not preparation for social work practice and is not recognized by the CSWE.

## Requirements for a Minor in Substance Use Disorders

The minor in substance use disorders is designed to educate students in various aspects of substance use disorders. Students must notify the School of Social Work of intention to pursue this minor.

18 hours are required for the minor.
Students must pass the following three courses with a C or better:

| SCWK 4143 | Addiction and the Family | 3 |
| :--- | :--- | :--- |
| SCWK 4213 | The Diagnosis and Treatment of Substance Use <br> Disorders | 3 |
| SCWK 4243 | Impact of Policy on Addiction | 3 |
| Choose three of the following courses and pass each one with a C or | 9 |  | better:


| SCWK 3163 | On Death and Dying |
| :--- | :--- |
| SCWK 3233 | Contemporary Issues in Juvenile Justice |
| SCWK 3013 | Child Advocacy I: Perspectives on Child <br> Maltreatment and Child Advocacy |
| SCWK 4013 | Child Advocacy II: Professional and System <br> Responses to Child Maltreatment |
| SCWK 4023 | Child Advocacy III: Responding to the Survivor of <br> Child Abuse |
| SCWK 4093 | Human Behavior and the Social Environment I |
| SCWK 4153 | Social Welfare Policy |
| SCWK 3633 | Child Welfare: 21st Century Perspectives |
| SCWK 3193 | Human Diversity and Social Work |

Total Hours

## Requirements for a Child Advocacy Studies Training Undergraduate Certificate

The Child Advocacy Studies Training online certificate program is designed to better prepare future child protection workers, law enforcement officers, and other child-serving professionals in child welfare. Students may only receive credit for the minor or the certificate, but not both. Admission requirements for the Child Advocacy Studies Training online certificate program:

- Meet the admission requirements for the University of Arkansas.
- Complete 60 semester hours of credit from a regionally accredited institution of higher education.

Course requirements for an undergraduate certificate in Child Advocacy Studies Training (CHAS) include 9 credit hours:

SCWK 3013
SCWK 4013
SCWK 4023

Child Advocacy I: Perspectives on Child Maltreatment and Child Advocacy
Child Advocacy II: Professional and System Responses to Child Maltreatment
Child Advocacy III: Responding to the Survivor of Child Abuse

Requirements for Departmental Honors in Social Work: The Departmental Honors Program in Social Work is an upper-division course of study with an independent investigation on a topic in social work. Students work closely with an adviser of their choice to define the goals of an honors project and to develop it to completion. They must take 12 hours (which may include 6 hours of thesis) in Honors Studies. In developing the project, students are encouraged to take honors courses, participate in honors colloquia, and do extensive background reading. The honors thesis may entail a library research project, a social work intervention project to be conducted in the field, or a policy analysis project. A research study that requires original data collection and analysis is preferred. In any case, the honors work is a serious long-term undertaking that should have direct value in supplementing the student's regular departmental academic program. Enrollment in SCWK 399VH takes place after the student has done background reading and has actually begun a project. Students normally enroll in this course for three hours of credit. The course may be repeated for an additional 3 hours of credit if the student's project is an extensive one. Regardless of the type of project, it is presented in written form and defended at an oral examination before an Honors Council Committee. Projects of extraordinarily high quality may be designated High Honors by the Committee. Successful completion of the requirements will be recognized by the award of the distinction "Social Work Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Faculty

Allbright, Sara, M.S.W (University of Arkansas), B.S. (John Brown University), Lecturer, 2018.
Atwood, Casey, B.S.W. (University of Arkansas), Lecturer, 2013.
Barnett, Tracey, PhD. (University of Texas at Arlington), M.S.W. (University of Alabama), Assistant Professor, 2018.
Bennett, Marion, Ph.D. (University of North Carolina at Chapel Hill), M.S.W. (University of Pennsylvania), B.S.W (Hampton University), Assistant Professor, 2023.
Bostian-Neal, Elisabeth, M.S.W., B.S.W. (University of Arkansas), Lecturer, 2020.
Bryson, Sarah J., M.S.W. (Colorado State University), Lecturer, 2014. Christy, Kameri, Ph.D., M.S.W. (University of Kansas), B.A. (University of Missouri-Kansas City), Professor, 2003, 2013.
Clingan, Shelley Diane, M.S.W. (University of Arkansas at Little Rock), Lecturer, 2014.
Collie, Sara J., M.S.W. (University of Arkansas at Little Rock), B.A.
(University of Arkansas), Associate Professor, 2011.
Dickson, Ernestine, M.S.W. (Florida State University), B.S.W. (University of Florida), Lecturer, 2020.
Elliot, Jonathan, M.S.W. (University of Texas at Austin), B.S.W. (University of Alabama), Lecturer, 2019.
Ferguson, Alishia Juanelle, Ph.D., M.S., B.A. (University of Texas Arlington), Clinical Associate Professor, 2008, 2022.
Fields, Lashawnda, Ph.D., M.S.W. (Washington University), Assistant Professor, 2020.

Franklin, Carly T.S., M.S.W. (University of Arkansas), Clinical Associate Professor, 2014, 2021.
Freeman, Katherine, M.S.W. (University of Georgia), B.A. (University of Arkansas), Lecturer, 2017.
Gallagher, John M., Ph.D., M.S.W. (Arizona State University), B.A. (State University of New York at Plattsburgh), Associate Professor, 2016, 2022.
Hurd, Debra, Ph.D., M.P.A., B.A. (University of Arkansas), Clinical Professor, 1992, 2012.
Long, Christiane, Ph.D. (Our Lady of the Lake University-San Antonio), M.S.W. (University of Arkansas at Little Rock), B.S. (University of Central Arkansas), Assistant Professor, 2022.
Moore, Brian, M.S.W, B.S.W (University of Arkansas), Lecturer, 2004.
Murphy-Erby, Yvette, Ph.D. (University of North Carolina at Greensboro), M.S.W. (University of North Carolina, Chapel Hill), B.A. (University of North Carolina, Charlotte), Professor, 2004, 2013.
Nolen, Erin, Ph.D. (University of Texas at Austin), M.S.W., B.S.W. (Baylor University), Assistant Professor, 2023.
Page, Patricia, J.D. (University of Arkansas at Little Rock), M.S.W. (Florida State University), B.S.W. (University of Arkansas), Lecturer, 2014. Parker, Betty, M.S.W., B.S.W. (University of Arkansas), Lecturer, 2013, 2017.

Payne, Whitney, M.S.W (University of Arkansas), B.S.W (University of Alaska-Anchorage), Clinical Assistant Professor, 2013, 2014.
Plassmeyer, Mark P., Ph.D. (University of Denver), M.S.W. (University of Pittsburg), B.A (Fort Lewis College), Assistant Professor, 2019.
Rosa, Ananda, M.S.W. (University of Arkansas at Little Rock), B.A.
(University of Arkansas), Clinical Associate Professor, 2010, 2022.
Scott, Adrienne R., M.S.W. (University of Texas, Arlington), B.A.
(University of Arkansas), Clinical Assistant Professor, 2014, 2022.
Shobe, Marcia A., Ph.D. (University of Kansas), M.S.W. (University of Hawaii at Manoa), B.A. (State University of New York at Plattsburgh), Professor, 2007, 2012.
Spears, Kari R., M.S.W., B.A. (University of Arkansas), Instructor, 2016.
Stauss, Kim, Ph.D. (University of Utah), M.S.W. (California State University at Sacramento), B.S. (Stephen F. Austin State University), Associate Professor, 2006, 2012.
Stephens, Mary Paige, M.S.W., B.A. (University of Missouri-Columbia), Lecturer, 2013.
Thomas, Johanna, Ph.D., M.S.W. (Louisiana State University), B.A. (University of Akron), Associate Professor, 2015, 2022.
Thomas, Stephanie, M.S.W. (University of Maryland at Baltimore), B.S. (Old Dominion University), Lecturer, 2017.
Torres, Maria, M.S.W., B.S.W. (University of Arkansas), Lecturer, 2020.
Tyler, Susan, M.S.W., B.S.W (University of Arkansas), Clinical Assistant Professor, 2018.
Valandra, Ph.D., M.S.W. (University of Minnesota), M.B.A., B.S. (University of Nebraska at Omaha), Associate Professor, 2013, 2019.
Woodruff, Emily, M.S.W., B.S. (University of Illinois at Urbana-
Champaign), Clinical Assistant Professor, 2022.

## Courses

SCWK 2133. Introduction to Social Work. 3 Hours.
Introduction to social work as a profession and to social welfare institutions from the perspective of the generalist, entry level social worker. Emphasis on empowerment function of social work. (Typically offered: Fall, Spring and Summer)
SCWK 3013. Child Advocacy I: Perspectives on Child Maltreatment and Child Advocacy. 3 Hours.
Introductory course in child advocacy studies training. Covers the history, comparative perspectives, legal framework, responses to child maltreatment, skills necessary to do the work, other pertinent issues pertaining to child maltreatment and child advocacy. (Typically offered: Fall)

SCWK 3163. On Death and Dying. 3 Hours.
Reviews the theory and humanistic importance of the concepts of death and dying in society. An experimental option and interdisciplinary faculty presenters will be part of the format. (Typically offered: Irregular)

## SCWK 3193. Human Diversity and Social Work. 3 Hours.

An introduction to information basic concepts related to human diversity and social work. Provides content on differences and similarities in the experiences, needs, and beliefs of people distinguished by race, ethnicity, culture, class, gender, sexual orientation, religion, physical or mental ability, age or national origin. Prerequisite: On-campus sections for Social Work major, minor, or Pre-SCWK students only; Online sections are open to all majors. (Typically offered: Fall, Spring and Summer)
SCWK 3233. Contemporary Issues in Juvenile Justice. 3 Hours.
This course is designed as a discussion of contemporary issues in juvenile justice. The focus is on the child and family system, including various theories related to underlying causes for involvement in the juvenile courts. This course will also describe the current workings of the juvenile court system and implications for the future. (Typically offered: Fall, Spring and Summer)
SCWK 3633. Child Welfare: 21st Century Perspectives. 3 Hours.
Study of the needs of deprived children with some attention to methods and standards of care. Cultural competence and family-centered practice are emphasized. (Typically offered: Irregular)
SCWK 399VH. Honors Course. 1-18 Hour.
Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

SCWK 4013. Child Advocacy II: Professional and System Responses to Child Maltreatment. 3 Hours.
Continuation of Child Advocacy Studies I. Focuses on the responses of professionals to allegations of child maltreatment. Covers competency-based skills training including forensic interviewing and documentation. Prerequisite: SCWK 3013. (Typically offered: Spring)
SCWK 4023. Child Advocacy III: Responding to the Survivor of Child Abuse. 3 Hours.
Continuation of Child Advocacy Studies II. Provides training to recognize the effects of child maltreatment and to develop intervention strategies for children and their families. Outside experiential activities for this course involve court room observations. Prerequisite: SCWK 3013 and SCWK 4013. (Typically offered: Summer)

## SCWK 405V. Special Topics in Social Work. 1-6 Hour.

Comprehensive study of various topics of importance in contemporary social welfare and social work practice. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for degree credit.
SCWK 4073. Social Work Research and Technology I. 3 Hours.
An overview of forms and sources of social work research including existing social data, techniques for collecting original social data, and techniques of organization, interpretation, and presentation of data. Students will also become proficient in the use of current technology for social work research and practice. Pre- or Corequisite: One of the following: STAT 2303, SOCI 3303 and SOCI 3301L, PSYC 2013, or ESRM 2403. Prerequisite: SCWK 4093 and SCWK 4153. (Typically offered: Fall and Spring)
SCWK 4093. Human Behavior and the Social Environment I. 3 Hours.
Provides a conceptual framework for knowledge of human behavior and the social environment with a focus on individuals. Social systems, life-course, assets, and resiliency-based approaches are presented. Special attention is given to the impact of discrimination and oppression on the ability to reach or maintain optimal health and well-being. Prerequisite: COMM 1313, PSYC 2003, SOCI 2013, SCWK 2133, and SCWK 3193 and (BIOL 1543 and BIOL 1541L, or ANTH 1013 and ANTH 1011L). (Typically offered: Fall and Spring)

SCWK 4103. Human Behavior and the Social Environment II. 3 Hours.
This course applies the basic framework for creating and organizing knowledge of human behavior and the social environment acquired in HBSE I to the understanding of family, group, organizational, community, and global systems. Attention is given to discrimination, oppression, the impact of technology, and poverty at each system level. Prerequisite: SCWK 4093 and SCWK 4153. (Typically offered: Fall and Spring)

## SCWK 4143. Addiction and the Family. 3 Hours.

Introduction to the biophysical basis of chemical and behavior compulsions with special focus on family impacts. Childhood development within addictive families is also examined. Social work intervention with substance abusing families is highlighted. (Typically offered: Irregular)

## SCWK 4153. Social Welfare Policy. 3 Hours.

Describes and analyzes the policies and services rendered by local, state, regional, national, and international agencies as well as the policy implications for social work practice. Students prepare to advocate social policy changes designed to improve social conditions, promote social and economic justice, and to empower at-risk populations. Prerequisite: COMM 1313, PLSC 2003, SCWK 2133, and SCWK 3193. (Typically offered: Fall and Spring)
SCWK 4163. African American Perspectives of Trauma, Loss, and Recovery. 3 Hours.
Explores dimensions of trauma, loss, and recovery within the lived experiences of African American individuals, families, and communities in the United States. Prerequisite: Junior standing or instructor consent. (Typically offered: Fall) This course is cross-listed with AAST 4163.
SCWK 4173. Social Work with African American Families. 3 Hours.
An overview of historical and contemporary issues of African American families using culturally competent and strengths based frameworks. Focuses on the Black family as a social institution. Covers current trends affecting Black families, historical influences, evaluation of social policies, and programs of today. Prerequisite: Junior standing or instructor consent. (Typically offered: Irregular)
This course is cross-listed with AAST 4173.
SCWK 4183. Social Work With Elders. 3 Hours.
Survey of theories of gerontology, service programs and unmet needs of the aging citizen. (Typically offered: Irregular)
SCWK 4213. The Diagnosis and Treatment of Substance Use Disorders. 3 Hours.
Explores the use and abuse of drugs and alcohol with an emphasis on evidencebased treatment approaches to help engage and treat chemically dependent clients. Best practices to be reviewed will include Motivational Interviewing (MI), Cognitive Behavioral Therapy (CBT), harm reduction approaches, Medication Assisted
Treatment (MAT), and Dialectical Behavioral Therapy (DBT). (Typically offered: Fall, Spring and Summer)

## SCWK 4243. Impact of Policy on Addiction. 3 Hours.

Explores the history of drug policy in the United States, focusing on the relationship between people, drugs, and the criminalization of certain substances. Examines how other countries have developed and utilized harm reduction and decriminalization approaches and policies. (Typically offered: Fall, Spring and Summer)
SCWK 4253. Spirituality and Social Work Practice. 3 Hours.
This course prepares students to respond competently and ethically to diverse spiritual and religious perspectives. Utilizing social work ethics and values as a guide, students will develop a comparative, critically reflective approach to practice. Prerequisite: SCWK 3193 or instructor consent. (Typically offered: Fall and Spring)

## SCWK 4333. Social Work Practice I. 3 Hours.

This is the first in the sequence of practice courses introducing students to the generalist approach to micro social work. This course focuses on developing a solid foundation for practice with individuals, including learning basic communication and helping skills, values, principles, and the connection of theory to practice. Pre- or Corequisite: SCWK 4103. Prerequisite: SCWK 4093 and SCWK 4153. (Typically offered: Fall and Spring)

## SCWK 4343. Social Work Practice II. 3 Hours.

This is the second course in the social work practice sequence, emphasizing theories, models, and techniques related to generalist practice with families and groups. The course elaborates on system theory as it impacts groups and families, and use of experiential teaching methods. Prerequisite: SCWK 4103 and SCWK 4333. (Typically offered: Fall and Spring)

## SCWK 4412. Field Seminar I. 2 Hours.

An integrative seminar to assist students in comparing their practice experiences, integrating knowledge acquired in the classroom, and expanding knowledge beyond the scope of the practicum setting. Corequisite: SCWK 4434 and social work majors only. (Typically offered: Fall, Spring and Summer)

## SCWK 4422. Field Seminar II. 2 Hours.

An integrative seminar to assist students in comparing their practice experiences, integrating knowledge acquired in the classroom, and expanding knowledge beyond the scope of the practicum setting. Corequisite: SCWK 4444. Prerequisite: Social Work majors only. (Typically offered: Fall, Spring and Summer)

## SCWK 4434. Social Work Internship I. 4 Hours.

Arranged in connection with social service agencies. Credit is based on completion of all course objectives, including a minimum of 220 hours of field work under the supervision of a licensed social worker. Corequisite: SCWK 4412. Prerequisite: Social work major, SCWK 4073, SCWK 4103, and SCWK 4333. (Typically offered: Fall, Spring and Summer)

## SCWK 4444. Social Work Internship II. 4 Hours.

Arranged in connection with social service agencies. Credit is based on completion of all course objectives, including a minimum of 220 hours of field work under the supervision of a licensed social worker. Corequisite: SCWK 4422. Prerequisite: SCWK majors only, SCWK 4343, SCWK 4733 and SCWK 4434. (Typically offered: Fall, Spring and Summer)

## SCWK 4523. Ethics and Aging. 3 Hours.

Explores the complexities of aging and ethical decision making with older adult clients. Students learn to identify ethical dilemmas and to appreciate structured ethical decision making, generalizing the information learned across all populations served. (Typically offered: Irregular)
SCWK 4643. Child Advocacy IV: Global Issues in Child Welfare. 3 Hours.
Prepares students to identify, assess, and respond to the various historical and contemporary factors impacting the welfare of children around the world and focuses on factors such as health, maltreatment, culture, policy, education, and social advocacy. (Typically offered: Fall, Spring and Summer)

SCWK 4733. Social Work Practice III. 3 Hours.
Students acquire and practice the skills, knowledge, and values necessary for culturally competent generalist social work practice with organizations and communities. Special attention is given to the implications of discrimination and oppression for attaining social and economic justice. Pre- or Corequisite: SCWK 4103 and SCWK 4343. Prerequisite: SCWK 4333. (Typically offered: Fall and Spring)

## SCWK 4753. Grantwriting. 3 Hours.

Provides advanced theoretical and practical approaches to program planning and development in order to write grant applications. Emphasis is placed on the importance of developing the practice skills of program planning, understanding program performance, identifying funders, responding to requests for proposals and writing successful grant proposals. (Typically offered: Irregular)

SCWK 496V. Independent Study. 1-6 Hour.
Independent Study designed to meet the particular needs of individual students. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## Sociology (SOCI)

Shauna Morimoto
Department Chair
211 Old Main
479-575-3205
Department of Sociology and Criminology Website (http:// fulbright.uark.edu/departments/sociology/)

The Department of Sociology and Criminology offers a major leading to a Bachelor of Arts degree in sociology. Sociology is a comprehensive liberal arts degree that provides an excellent foundation and springboard for working in today's diverse social, organizational and business environments. The Sociology major provides marketable skills in research, theory, and data analytics and knowledge related to social institutions, interactions, cultures, social inequality, and organizations. We offer robust undergraduate internship opportunities (https:// fulbright.uark.edu/departments/sociology/internships/) that help sociology students develop a better understanding of a prospective career and determine whether their interests match a chosen career path, while simultaneously gaining experience with professionals in the field.

The department also offers a major in criminology (p. 364), double major in sociology and criminology, a minor in sociology (https:// fulbright.uark.edu/departments/sociology/undergraduate-programs/ minor-in-sociology.php) and a fully online minor in criminal justice (https:// online.uark.edu/programs/minor-criminal-justice.php). Our students also may pursue a dependent major in sociology and African and African American studies (p. 288).

For requirements for an M.A. degree in sociology, including criminology concentration, see the Graduate School Catalog (http://catalog.uark.edu/ graduatecatalog/programsofstudy/sociologyandcriminologysoci/).

## University and College Requirements for a Bachelor of Arts in Sociology

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor. Courses marked with an asterisk may also count toward the State Minimum Core.

| State Minimum Core <br> Select one course from the following: | 35 |  |
| :--- | :--- | ---: |
| MATH 2043 | Survey of Calculus (ACTS Equivalency = MATH <br> 2203) | $3-4$ |
| MATH 2053 | Finite Mathematics * |  |

World language up to the Elementary II level (1013) or higher
31 credit hours hours in sociology (SOCI) courses listed below. 31

| SOCI 2013 | ```General Sociology (ACTS Equivalency = SOCI 1013)``` |  |
| :---: | :---: | :---: |
| SOCI 3193 | Race, Class, Gender, and Sexuality |  |
| SOCI 3223 | Social Psychology |  |
| SOCI 3301L | Social Data and Analysis Laboratory |  |
| SOCI 3303 | Social Data and Analysis |  |
| SOCI 3313 | Social Research |  |
| SOCI 3423 | Social Theory |  |
| SOCI 4043 | Seminar in Sociology |  |
| Nine credit hours in sociology (SOCI) courses numbered 3000level or higher |  |  |
| Any UA offered credit hours 3000-level or higher |  | 2 |
| Any 3000-level or higher credit hours or any 2000-level credit hours that have a course prerequisite. |  | 7 |
| General Electives |  | 36 |
| Total Hours |  | 120 |

Writing Requirement: To fulfill the Fulbright College writing requirement, each sociology major will submit, prior to graduation, a substantial research or analytical paper, with a grade of "A" or "B" from an upper-division sociology course (3000-, 4000-, or 5000-level) to their departmental adviser. Satisfactory completion of an honors project or a senior thesis may fulfill this requirement.

## Sociology B.A. Eight-Semester Degree Program

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency <br> = ENGL 1013) (Satisfies General Education <br> Outcome 1.1) |  |  |
| Satisfies General Education Outcome 2.1:1 <br> MATH 1313 Quantitative Reasoning (ACTS | 3 |  |
| Equivalency = MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency = MATH 1103) <br> $\quad$ or any MATH course numbered higher than <br> MATH 1203 <br> SOCI 2013 General Sociology (ACTS Equivalency <br> = SOCI 1013) (Satisfies General Education <br> Outcomes 3.3, 4.1, and 4.2) <br> World language at the Elementary I (1003) level or <br> higher <br> State Minimum Core-U.S. History or Government <br> (Satisfies General Education Outcome 4.2) <br> ENGL 1023 Composition II (ACTS Equivalency <br> = ENGL 1023) (Satisfies General Education <br> Outcome 1.1) <br> Select one course from the following: | 3 |  |

MATH 2043 Survey of Calculus (ACTS
Equivalency $=$ MATH 2203)
MATH 2053 Finite Mathematics
MATH 2183 Mathematical Reasoning in a Quantitative World
MATH 2554 Calculus I (ACTS Equivalency $=$ MATH 2405)
STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)
World language at the Elementary II (1013) level or higher
State Minimum Core-Fine Arts (Satisfies General Education Outcome 3.1) ${ }^{1}$
General Electives
Year Total:

| Second Year |  |
| :---: | :---: |
|  | Fall |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ | 4 |
| State Minimum Core-Social Sciences (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |
| General Electives | 8 |
| SOCI 3313 Social Research |  |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  |
| State Minimum Core-Social Sciences (Satisfies General Education Outcome 3.3) ${ }^{1}$ |  |
| General Electives |  |
| Year Total: | 15 |


| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| SOCI 3193 Race, Class, Gender, and Sexuality | 3 |  |
| SOCI 3223 Social Psychology | 3 |  |
| State Minimum Core-Humanities (Satisfies General Education Outcome 3.2) ${ }^{1}$ | 3 |  |
| Any UA offered credit hours 3000-level or higher | 2 |  |
| General Electives | 1 |  |
| General Electives (Must complete a course that satisfies General Education Outcome 5.1) ${ }^{1}$ | 3 |  |
| SOCI 3303 Social Data and Analysis \& SOCI 3301L Social Data and Analysis Laboratory |  | 4 |
| SOCI 3423 Social Theory |  | 3 |
| SOCI electives 3000-level or higher |  | 3 |
| Any 3000-level or higher credit hours or any 2000level credit hours that have a course prerequisite |  | 4 |
| General Electives |  | 1 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| SOCI electives 3000-level or higher | 6 |  |

Any 3000-level or higher credit hours or any 2000-
level credit hours that have a course prerequisite
General Electives and Fulbright College Writing
Requirement (Satisfies General Education
Outcomes 1.2 and 6.1) ${ }^{1,2}$
SOCI 4043 Seminar in Sociology 3
General Electives
Year Total:
15 15

Requirements for a Minor in Sociology: 18 semester hours in sociology to include SOCI 2013, SOCI 3313, SOCI 3423 and at least nine hours of 3000-level classes or above, of which no more than three hours can come from CRIM. A student must notify the department of her or his intent to minor.

## Requirements for Departmental Honors in Sociology: The

 Departmental Honors Program in Sociology is an upper-division course of study based on independent investigation on a scholarly topic of sociological interest. To be eligible for sociology honors candidacy, students normally will have completed 28 semester hours and not more than 85 semester hours with a minimum cumulative grade-point average of 3.5 . They must take 12 hours in Honors Studies, which may include 6 hours of thesis. In the junior year, three hours of directed reading, planning, or other work on a research problem should be selected from the following courses:| SOCI 399VH | Honors Course | $1-6$ |
| :--- | :--- | ---: |
| SOCI 403V | Individual Study in Sociology | $1-3$ |
| SOCI 4043 | Seminar in Sociology | 3 |

In the senior year, the student will complete an honors project for up to six hours of credit in SOCI 399VH Honors Course. This honors research project will normally consist of an empirical investigation but may, with the approval of the honors director and the other departmental representatives, be intensive library research on a topic. All candidates
must pass an oral examination given by an Honors Council Committee. Successful completion of the requirements will be recognized by the award of the distinction "Sociology Scholar Cum Laude" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

## Sociology (B.A.) Teacher Licensure in Social Studies Requirements:

Please refer to the Secondary Education Requirements (p. 276) for Fulbright College Students.

Students wanting to teach social studies in middle school should consult with a middle level adviser in the College of Education and Health Professions.

## Faculty

Adams, Douglas James, Ph.D., M.A. (University of Arizona), Associate Professor, 1995, 2002.
Allison, Kayla, Ph.D., (Indiana University-Bloomington), M.A. (University of Arkansas), B.A. (Indiana University-Bloomington), Assistant Professor, 2020.

Angton, Alexia, Ph.D., M.S., B.A. (lowa State University Ames), Assistant Professor, 2022.
Bustamante, Juan Jose, Ph.D. (Michigan State University), M.S., B.A. (University of Texas Pan American), Associate Professor, 2012, 2018.
Drawve, Grant R., Ph.D. (University of Arkansas at Little Rock), M.A.,
B.A. (Southern Illinois University), Associate Professor, 2016, 2021.

Engen, Mindy Sue, Ph.D., M.A. (Pennsylvania State University), B.S. (Georgia State University), Professor, 2005, 2017.
Engen, Rodney L., Ph.D. (University of Washington), M.S., B.S. (University of Wisconsin-Milwaukee), Associate Professor, 2009.
Fitzpatrick, Kevin M., Ph.D. (State University of New York at Albany), M.A. (University of South Carolina at Columbia), B.A. (Susquehanna University), University Professor, Bernice Jones Chair in Community, 2005, 2014.
Gruenewald, Jeffrey A., Ph.D. (Michigan State University), Professor, 2019, 2022.
Harris, Casey Taggart, Ph.D., M.A. (Pennsylvania State University), B.S. (Texas A\&M University), Professor, 2011, 2023.
Holyfield, Lori C., Ph.D. (University of Georgia), M.A., B.S.E. (University of Arkansas), Professor, 1995, 2012.
Morimoto, Shauna, Ph.D., M.S. (University of Wisconsin-Madison), B.A. (University of Pittsburgh), Professor, 2008, 2023.
Niño, Michael D., Ph.D. (University of North Texas), M.A., B.S. (West Texas A\&M University), Assistant Professor, 2020.
Paez, Rocio Alejandra, Ph.D., M.A., B.A. (University of Arkansas at Little Rock), Teachinig Associate Professor, 2018, 2023.
Sabon, Lauren, Ph.D. (University of Tennessee-Knoxville), M.S/M.A. (Marshall University), B.S., B.A. (West Virginia University), Teaching Associate Professor, 2014, 2017.
Shields, Christopher A., Ph.D., J.D., M.A., B.A. (University of Arkansas), Teaching Associate Professor, 2003, 2017.
Thomas, Shaun A., Ph.D., M.A. (Louisiana State University), B.A. (University of Akron), Professor, 2015, 2023.
Worden, Steven K., Ph.D. (University of Texas at Austin), M.A., B.A. (Portland State University), Associate Professor, 1986.
Yang, Song, Ph.D., M.S. (University of Minnesota-Twin Cities), M.A. (Nankai University, China), B.A. (Branch College of Nankai, China), Professor, 2002, 2016.
Zajicek, Anna, Ph.D. (Virginia Polytechnic Institute and State University), M.S., B.S. (University of Silesia, Poland), Professor, 1994, 2006.

Zhang, Meredith, Ph.D., M.A. (The Ohio State University), B.A. (Susquehanna University), Assistant Professor, 2022.

## Courses

SOCI 2013. General Sociology (ACTS Equivalency = SOCI 1013). 3 Hours.
Applies a sociological perspective and develops critical thinking. Focuses on culture, identity, race, ethnicity, gender, class inequality, crime, deviance, globalization, social change, and social institutions. Overview of sociological theories and methods for systematic understanding of society. (Typically offered: Fall, Spring and Summer)

## SOCI 2013H. Honors General Sociology. 3 Hours.

Develops critical thinking, writing, and research skills by applying a sociological perspective. Focuses on culture, identity, race, ethnicity, gender, class inequality, collective behavior, crime, deviance, globalization, social change, and social institutions. Overview of sociological theories and methods for systematic understanding of society. (Typically offered: Fall, Spring and Summer) This course is equivalent to SOCI 2013.

SOCI 2033. Social Problems (ACTS Equivalency = SOCI 2013). 3 Hours. Sociological analysis of major social problems, with emphasis placed on social justice, poverty and economic inequality, racial and ethnic relations, gender, crime, education, and other contemporary issues. Develops critical thinking. (Typically offered: Irregular)
SOCI 3001L. Social Science Data Analytics Lab. 1 Hour.
Provides opportunities to implement social science data analytics skills through completing a series of data modules. The course prepares students to interpret data meaningfully within a variety of future employment fields. Students gain familiarity working with a number of marketable datasets, such as those generated by big data. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

SOCI 3011. Special Topics. 1 Hour.
Designed to develop the tools to write effectively in the social sciences, including skills related to organizing manuscripts, writing problem statements, identifying and synthesizing research, and revising and editing. Prerequisite: SOCI 2013 or CRIM 2003. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.
This course is cross-listed with CRIM 3011.

## SOCI 3023. Criminological Theory. 3 Hours.

Advanced survey of theories of crime causation. Examines broad sociological paradigms, as well as both individual and aggregate-level explanations of crime causation. Applies criminological theories to contemporary issues associated with crime and criminal justice. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is equivalent to CRIM 3023.

## SOCI 3053. Serial Crime. 3 Hours.

Exploration of the historical development of criminal profiling related to serial homicide, serial sex crimes, serial stalking, and serial arson. Examination of behavioral and criminological theories, focusing on different profiling techniques and their strengths and challenges. Case studies and published research on serial crime will be used whenever possible. Prerequisite: SOCI 2013. (Typically offered: Irregular)
This course is cross-listed with CRIM 3053.
SOCI 3063. Victimology. 3 Hours.
Introduction to the scientific study of victimization. Examines conceptual boundaries of victimology research, covers theories, statistics and trends relevant to victimology; reviews the victim blaming and defending perspectives; explores practical applications of victimology, and evaluates the social, legal, and criminological issues that stem from concern over victims. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is cross-listed with CRIM 3063.

## SOCI 3153. Urban Sociology. 3 Hours.

Examines growth of cities, urban inequalities, politics, social movements, built environment, ecology, sustainability, cultural identity, global cities, and immigration. Implications considered for policy and planning. Prerequisite: SOCI 2013. (Typically offered: Irregular)

## SOCI 3173. Latinos, Migration, and the U.S. South. 3 Hours.

Examines social, economic, and population changes in the U.S. South, including shift of Latinos' settlement patterns, actions taken by policy makers to adapt to new demographic context, and mechanisms immigrants use to facilitate their induction into the southern community. Prerequisite: SOCI 2013. (Typically offered: Fall)
SOCI 3193. Race, Class, Gender, and Sexuality. 3 Hours.
A critical examination of the layers of the global systems that shape and construct social inequalities. Overview of sociological theories and research on how race, class, gender, and sexuality intersect and function separately to organize systems of inequality. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

SOCI 3193H. Race, Class, Gender, and Sexuality in America. 3 Hours.
A critical examination of the layers of the global systems that shape and construct social inequalities. Overview of sociological theories and research on how race, class, gender, and sexuality intersect and function separately to organize systems of inequality. Prerequisite: Honors candidacy, SOCI 2013 or SOCI 2013H and junior standing. (Typically offered: Fall and Spring)
This course is equivalent to SOCI 3193.

## SOCI 3203. Corrections and Social Control. 3 Hours.

Overview of correctional systems and punishment. Focuses on theories of correctional philosophies, practices, and procedures, along with the historical development and modern practices of corrections, sentencing, facilities, and issues facing correctional populations. Also examines principles and practices of treatment and rehabilitation in correctional settings. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring)
This course is cross-listed with CRIM 3203.

## SOCI 3223. Social Psychology. 3 Hours.

A sociological approach to the study of the interaction between society and the self with an emphasis upon reference groups such as the family, friends, work, lifestyle, and deviance. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

## SOCI 3263. Families and Social Change. 3 Hours.

A sociological analysis of the diversity and inequality that exists among families, and the ways in which families have and continue to change over time. Topics discussed include sex, gender, and sexuality, race, ethnicity, and immigration, class and economic transformations. Prerequisite: SOCI 2013. (Typically offered: Spring)

## SOCI 3273. Sociology of China. 3 Hours.

Examines many aspects of Chinese people, their cultures, and practices, and also looks at Chinese Americans in the U.S. both historically and currently. Prerequisite: SOCI 2013. (Typically offered: Irregular)
This course is cross-listed with AIST 3273.

## SOCI 3301L. Social Data and Analysis Laboratory. 1 Hour.

The lab is an extension of the lecture in SOCI 3303. Using a variety of computer packages, the lab provides practical experience in managing and analyzing social data. Corequisite: SOCI 3303. (Typically offered: Fall and Spring)

SOCI 3301M. Honors Social Data and Analysis Laboratory. 1 Hour.
The lab is an extension of the lecture in SOCI 3303. Using a variety of computer packages, the lab provides practical experience in managing and analyzing social data. Corequisite: SOCI 3303H. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to SOCI 3301 L .

SOCI 3303. Social Data and Analysis. 3 Hours.
Introduction to descriptive and inferential statistics, with special emphasis on common techniques in social research. Course focuses on the practical usage of data and application to real-world issues. Corequisite: SOCI 3301L. Prerequisite: SOCI 2013 and junior standing. (Typically offered: Fall and Spring)

SOCI 3303H. Honors Social Data and Analysis. 3 Hours.
Introduction to descriptive and inferential statistics, with special emphasis on common techniques in social research. Course focuses on the practical usage of data and application to real-world issues. Corequisite: SOCI 3301L. Prerequisite: Honors candidacy, SOCI 2013 and junior standing. (Typically offered: Fall and Spring)
This course is equivalent to SOCI 3303.
SOCI 3313. Social Research. 3 Hours.
Study and experience in implementing a methodological "toolbox," including theorizing, designing, measuring, sampling, collecting, interpreting, and reporting empirical results for real-world social research applications. Prerequisite:
SOCI 2013. (Typically offered: Fall and Spring)
SOCI 3313H. Honors Social Research. 3 Hours.
Study and experience in implementing a methodological "toolbox," including theorizing, designing, measuring, sampling, collecting, interpreting, and reporting empirical results for real-world social research applications. Prerequisite: Honors candidacy, SOCI 2013 and junior standing. (Typically offered: Fall and Spring) This course is equivalent to SOCI 3313.

## SOCI 3413. Special Topics. 3 Hours.

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: SOCI 2013. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## SOCI 3413H. Honors Special Topics. 3 Hours.

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: Honors candidacy and SOCI 2013 or SOCI 2013H. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to SOCl 3413.

## SOCI 3423. Social Theory. 3 Hours.

Examines the philosophical underpinnings of sociology; introduces notable classical and contemporary social theorists; develops an appreciation for the ways classical works continue to form the basis for contemporary social thought. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

## SOCI 3423H. Honors Social Theory. 3 Hours.

Examines the philosophical underpinnings of sociology; introduces notable classical and contemporary social theorists; develops an appreciation for the ways classical works continue to form the basis for contemporary social thought. Prerequisite: Honors standing and SOCI 2013. (Typically offered: Fall and Spring)
This course is equivalent to SOCI 3423.
SOCI 3453. Immigration and Crime. 3 Hours.
Provides a comprehensive foundation of the relationship between immigration, one of the most powerful forces that influences a nation's social fabric, and crime. Focuses not only on U.S. immigration but also crime in the global context. Prerequisite: SOCI 2013. (Typically offered: Fall) This course is cross-listed with CRIM 3453.

## SOCI 3513. Criminal Evidence. 3 Hours.

Examination of how evidence is collected, processed, and presented in court, with an emphasis on the competing interests of crime control and individual liberties.
Prerequisite: CRIM 2003. (Typically offered: Fall)

## SOCI 3723. Deviant Behavior. 3 Hours.

Sociological overview of disconcerting conduct: its definition, theoretical understandings and research. Specific topics may include: interpersonal violence, self-destructive disorders, controversial lifestyles, substance abuse, as well as the relationship between inequality and disturbing acts. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is cross-listed with CRIM 3723.
SOCI 399VH. Honors Course. 1-6 Hour.
Honors. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

SOCI 4003. Internship in Sociology. 3 Hours.
Supervised experience in municipal, county, or state agencies, or any other agency which is approved by the instructor. Prerequisite: SOCI 2013. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## SOCI 4013. Special Topics in Sociology. 3 Hours.

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## SOCI 4013H. Honors Special Topics in Sociology. 3 Hours.

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: Honors candidacy and SOCI 2013 or SOCI 2013H. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to SOCI 4013.

## SOCI 403V. Individual Study in Sociology. 1-3 Hour.

In-depth individual or group study with a faculty member on advanced sociological readings and/or participation in supervised research as an experience-based course. Faculty permission required in advance of enrollment. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

## SOCI 4043. Seminar in Sociology. 3 Hours.

Capstone course in sociology. This course is intended to apply and demonstrate the knowledge and skills developed over a college career. Sociological theory and current research findings are applied to everyday life. Emphasis is given to personal, professional and career development. Prerequisite: Senior standing. (Typically offered: Fall and Spring)

## SOCI 4063. Organizations in Society. 3 Hours

Review of literature on work and organizations, with focus on race, class, gender inequalities, and interactions between society and organizations; discussion of topics related to white collar crime and deviant behavior inside modern corporations. Prerequisite: SOCI 2013. (Typically offered: Spring)
This course is cross-listed with CRIM 4063.
SOCI 4143. Juvenile Justice. 3 Hours.
Examination of juvenile justice system and juvenile crime, including historical development of the system and treatment of juvenile delinquents along with legal, correctional, and treatment processes and philosophies. Emphasis on current issues facing delinquents, the system, and delinquency prevention in addition to trends in juvenile crime. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring) This course is cross-listed with CRIM 4143.

## SOCI 4153. Race and Society. 3 Hours.

Sociological study of race within the U.S., with an emphasis on understanding how race operates within contemporary social institutions. Critical engagement and discussion of topics relating to race will be encouraged. Prerequisite: SOCI 2013 or AAST 1003 or AAST 2023. (Typically offered: Fall)
This course is cross-listed with AAST 4153.

## SOCI 4183. Social Network Analysis. 3 Hours.

Introduces the fundamentals of Social Network Analysis (SNA), and its applications for research in various social science fields. Prerequisite: SOCI 2013. (Typically offered: Fall)

This course is cross-listed with PLSC 4613.
SOCI 4233. Death Penalty. 3 Hours.
Examines problems and social issues related to the death penalty in the U.S., including the history of capital punishment, Supreme Court decisions, how various jurisdictions seek the death penalty, the comparative costs of incarceration and execution, miscarriages of justice, and how the criminal justice system responds to these issues. Prerequisite: CRIM 2003 or SOCI 2013. (Typically offered: Irregular) This course is cross-listed with CRIM 4233.

SOCI 4253. Social Impact of Data Analytics. 3 Hours.
Teaches students to assess social science data by raising awareness regarding the social impacts of data analytics. Particular attention is paid to the ethical issues involved in the potential benefits and risks across each of the four phases of the data cycle: data collection, consolidation, analytics, and use. Prerequisite: SOCI 2013. (Typically offered: Spring)

## SOCI 4263. Sociology of Mental Health and IIIness. 3 Hours.

Develops critical thinking, writing, and research skills by applying a sociological perspective to studying mental health and illness, including definitions, theories, measurements, and social correlates. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

SOCI 4263H. Honors Sociology of Mental Health and IIIness. 3 Hours.
Develops critical thinking, writing, and research skills by applying a sociological perspective to studying mental health and illness, including definitions, theories, measurements, and social correlates. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

This course is equivalent to SOCI 4263.

## SOCI 4603. Environmental Sociology. 3 Hours.

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. Prerequisite: Junior or above standing. (Typically offered: Spring)
This course is cross-listed with HDFS 4603, SUST 4603.

## Southern Studies (SOST)

Angie Maxwell
Director of Southern Studies
Old Main 506A
479-575-6007
amax@uark.edu
The Southern Studies minor is designed to provide students with a thorough, interdisciplinary grounding in the major themes, issues, and theoretical assumptions concerning southern history, literature, and politics. Students who secure a southern studies minor will be prepared to pursue careers in business, education, law, and in post-graduate work in history, literature, or political science, particularly as it relates to the Southern region of the United States.

Requirements for a Minor in Southern Studies: Students wishing to minor in Southern Studies must take SOST 2003 Introduction to Southern Studies, a 3-credit hour interdisciplinary course that explores the history, politics, literature, and culture of the U.S. South from the colonial era to the present. Students must also take an additional 15 elective credit hours
( 5 courses) from among numerous options listed below. Only 6 hours can count toward the requirements of another major or minor.

## Select five courses:

AAST 3233 African American History to 1877
or HIST 323:African American History to 1877
AAST 3243 African American History Since 1877 or HIST 3243African American History Since 1877
AAST 4093
or HIST 409:
AAST 3293 Black Politics
or PLSC 329Black Politics
AAST 4383 The American Civil Rights Movement or HIST 438: The American Civil Rights Movement
AAST 4933 African American Political Ideology
or PLSC 493African American Political Ideology
ENGL 3113 Folklore
ENGL 3853 Topics in African-American Literature and Culture
ENGL 3863 Topics in Literature and Culture of the American South
HIST 4503 History of Political Parties in the United States, 1789-1896
HIST 4563 The Old South, 1607-1865
HIST 4573 The New South, 1860 to the Present
HIST 4583 Arkansas in the Nation *
or HIST 338:Arkansas and the Southwest
HIST 4593 The Colonial French in the Mississippi Valley or WLLC 305Bhe Colonial French in the Mississippi Valley
HIST 4653 Antebellum America, 1828-1850
HIST 4663 Rebellion to Reconstruction, 1850-1877
HIST 4673 The American Civil War
PLSC 3213 The South and the Law: Race, Gender, and Citizenship
PLSC 3223 Arkansas Politics and the Nation ${ }^{1}$
PLSC 4333 Southern Politics
SOCI 3173 Latinos, Migration, and the U.S. South
SOST 399V Special Topics in Southern Studies ${ }^{2}$

## Total Hours

1 A maximum of 6 hours can be taken in Arkansas-specific courses.
2 A maximum of 6 hours of SOST 399V Special Topics in Southern Studies may be taken.

## Courses

SOST 2003. Introduction to Southern Studies. 3 Hours.
A three credit hour interdisciplinary course that explores the history, politics, literature, and culture of the U.S. South from the colonial era to the present. Students who minor in Southern Studies will be required to take Introduction to Southern Studies. (Typically offered: Fall Odd Years)

SOST 399V. Special Topics in Southern Studies. 1-3 Hour.
Topics that explore the American South which are not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## Statistics (STAT)

Giovanni Petris

Director of Statistics Program
314 Science-Engineering Building

## Requirements for a Minor in Statistics:

Coursework used toward the mathematics major may not be applied toward a statistics minor.

MATH $2554 \quad$ Calculus I (ACTS Equivalency $=$ MATH 2405) 4
12 hours of STAT courses, including 9 hours in courses numbered 12 3000 and above.

## Total Hours

## Courses

STAT 2303. Principles of Statistics (ACTS Equivalency = MATH 2103). 3 Hours.
A problem-oriented course with applications from many fields. Emphasis on understanding the nature of statistical orderliness implied by probability laws. Statistical analysis is treated as a means of decision making in the face of uncertainty. Prerequisite: MATH 1203 with a grade of C or better, or MATH 1313 with a grade of $C$ or better, or a score of at least 50 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

## STAT 2823. Biostatistics. 3 Hours.

An introductory course in biostatistics emphasizing methods for collecting, graphing, and understanding data. Special emphasis is placed upon available methods for both exploratory and confirmatory data analysis. Particular attention is given to statistical methods for data sets with discrete variables. Pre- or Corequisite: MATH 2554. Corequisite: Lab component. (Typically offered: Spring)

## STAT 3001L. Statistics Methods Laboratory. 1 Hour.

Introduction to the statistical software SAS, including its use for common statistical analyses. A practical complement to the statistical methodology covered in STAT 3003. (Typically offered: Fall and Spring)

## STAT 3003. Statistical Methods. 3 Hours.

Describing Data, Basic Probability, Random variables, Uniform, Normal and Binomial Distributions, Sampling Distributions, Confidence Intervals, Hypothesis testing, Correlation and Regression, Contingency table, Comparing two populations, ANOVA. Prerequisite: MATH 2554 or MATH 2554C. (Typically offered: Fall and Spring)

STAT 3013. Introduction to Probability. 3 Hours.
A calculus-based introduction to probability. Discrete probability spaces and counting techniques, discrete and continuous probability distributions, random variables, random samples, law of large numbers, central limit theorem. Prerequisite: MATH 2564. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with MATH 3013.

## STAT 3113. Introduction to Mathematical Statistics. 3 Hours.

A calculus-based introduction to mathematical statistics, revolving around estimation, hypothesis testing, and Bayesian inference. Emphasis is given to the unifying mathematical and decision-theoretical principles that provide a justification to different estimation and testing procedures. Prerequisite: STAT 3013 or departmental consent. (Typically offered: Spring)

## STAT 4013. Statistical Forecasting and Prediction. 3 Hours.

Provides an in depth look at the theory and practice of applied modeling of temporal data for data science, including model building, selection, autocorrelation, autoregression and moving averages, and prediction for correlated data. Students will gain experience using statistical software to learn from data using applied time series and models. Prerequisite: STAT 3003 or department consent. (Typically offered: Fall)

STAT 4023. Bayesian Methods. 3 Hours.
Provides an introductory look at the theory and practice of applied Bayesian modeling for data science: including model building, selection, regularization, classification and prediction. Students will gain experience using statistical software to learn from data using applied Bayesian models. Prerequisite: STAT 3003 or department consent. (Typically offered: Spring)

STAT 4033. Nonparametric Statistical Methods. 3 Hours.
Goodness-of-fit tests, nonparametric inference in one-sample and two-sample location model, one-way and two-way ANOVA, nonparametric measures of association, Empirical distribution function, Bootstrap and Jackknife, Kernel density estimation. Prerequisite: STAT 2823 or STAT 3003 or departmental consent. (Typically offered: Fall)

## STAT 4043. Sampling Techniques. 3 Hours.

Considers optimum techniques of simple random, stratified random, cluster, systematic and multistage sampling from finite populations subject to cost precision constraints. Wide range of applications. Prerequisite: STAT 3003 or department consent. (Typically offered: Fall, Spring and Summer)

STAT 405V. Internship in Professional Practice. 1-3 Hour.
Professional work experience involving significant use of mathematics or statistics in business, industry or government. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

STAT 4101L. Introduction to R. 1 Hour.
A hands-on introduction to R software, a free and open-source computing environment used for data manipulation and analysis across a broad spectrum of subject areas. Intended for new users. Content begins with simple data manipulation, then complex data structures and common statistical procedures are covered. (Typically offered: Fall)

## STAT 4333. Analysis of Categorical Responses. 3 Hours.

Statistical tools to analyze univariate and multivariate categorical responses. Emphasis is given to Generalized Linear Models, including logistic regression and loglinear models. Prerequisite: STAT 3003 or departmental consent. (Typically offered: Spring)

## STAT 4373. Experimental Design. 3 Hours.

Topics in the design and analysis of planned experiments, including randomized block, Latin square, split plot, and BIB designs, use of fractional factorial replication, and repeated measures. Prerequisite: STAT 3003 or department consent. (Typically offered: Spring)

## Theatre (THTR)

Michael Riha
Chair of the Department
619 Kimpel Hall
479-575-2953
Department of Theatre Website (http://fulbright.uark.edu/departments/ theatre/)

The Department of Theatre offers the Bachelor of Arts (B.A.) degree in Theatre, a broad spectrum program in the context of a liberal arts education, and the Master of Fine Arts (M.F.A.) degree in six concentrations: Acting, Directing, Playwriting, Costume Design, Scene

Design and Lighting Design. (Please see the Graduate Catalog for information regarding the M.F.A. Theatre degree (http://catalog.uark.edu/ graduatecatalog/programsofstudy/theatrethtr/).) Classes at both undergraduate and graduate levels are focused on providing a strong, professional orientation to theatre performance and technology in conjunction with appropriate research-based course work to address the required foundations in theatre history, dramatic literature and dramatic criticism.

The educational objectives of the Department of Theatre are centered on producing graduates prepared to enter the competitive world of professional play production as well as a variety of teaching and research fields. In addition a background in Theatre has proven to be a valuable asset to those wishing to pursue a wide range of corporate and industrial occupations.

The play production program is the "laboratory" for study in Theatre. To that end the department produces an average of 10 plays each year involving students in virtually all aspects of production. Auditions are open to all students on campus.

The Department of Theatre also supports course work in Dance, offering a variety of basic and advanced studio courses.

For requirements for the M.F.A. degrees in theatre, see the Graduate School Catalog.

## Requirements for B.A. in Theatre with Design and Technology Concentration

## University and College Requirements for a Bachelor of Arts in Theatre

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

State Minimum Core (THTR 1003 or THTR 1003H may not fulfill the Fine Arts core requirement for Theatre majors.)

30 credit hours in theatre (THTR) and dance (DANC) courses listed below (DANC is only applicable in the Performance concentration). A grade of ' C ' or better is required in all THTR and DANC courses.

| THTR 1223 | Introduction to Theatre ${ }^{1}$ |
| :---: | :---: |
| THTR 1313 | Stage Technology: Costumes and Makeup |
| THTR 1323 | Stage Technology: Scenery and Lighting |
| THTR 1423 | Script Analysis |
| THTR 1883 | Acting I for Theatre Majors ${ }^{2}$ |
| THTR 2313 | Fundamentals of Theatrical Design |
| THTR 3001 | Production Practicum (one or the other to be completed twice for two credit hours total) |
| or THTR 301Performance Practicum |  |
| THTR 3653 | Directing I |
| THTR 4233 | History of the Theatre $\mathrm{I}^{3}$ |
| THTR 4333 | History of the Theatre II ${ }^{3}$ |
| THTR 4991 | Theatre Capstone |
| 8 credit hours in a single concentration of theatre. Students may hoose from 1) Design and Technology, 2) Performance, or 3) heatre Studies. |  |
| y Fulbright C Fher (number | ege credit hours numbered at the 3000 -level or credit hours depends on concentration) |

Stage Technology: Costumes and Makeup

THTR 1423 Script Analysis
THTR 1883 Acting I for Theatre Majors
THTR 2313 Fundamentals of Theatrical Design
THTR 3001 Production Practicum (one or the other to be completed twice for two credit hours total)
or THTR 301Performance Practicum
THTR 3653 Directing I
THTR 4233 History of the Theatre I
THTR 4333 History of the Theatre II

18 credit hours in a single concentration of theatre. Students may
higher (number of credit hours depends on concentration)

Any UA-Fayetteville credit hours numbered at the 3000-level or higheß-11 (number of credit hours depends on concentration)

Any credit hours numbered at the 3000-level or higher or any 2000level credit hours that have a course prerequisite (number of credit hours depends on concentration)
General Electives (number of credit hours depends on concentrationt)2-27

## Total Hours

1 Theatre majors who have already completed THTR 1003 or THTR 1003H may substitute this course for THTR 1223. Theatre majors may not receive degree credit for both THTR 1003/THTR 1003H and THTR 1223.
2 Fulfills the State Minimum Core--Fine Arts requirement.
${ }^{3}$ Fulfills the Fulbright College writing requirement.

Writing Requirement: The Fulbright College research/analytical paper requirement for theatre majors will be fulfilled in THTR 4233 or THTR 4333. Satisfactory completion of an honors project or senior thesis may fulfill the requirement.

Senior Capstone: All theatre majors are required, in the semester before graduation, to successfully complete the Senior Capstone, a faculty assessment of each student's accomplishments in performance and production.

## Requirements for a Concentration in Design and Technology

Required courses (9 hours)

| THTR 3213 | Costume Design | 3 |
| :--- | :--- | :--- |
| THTR 3733 | Lighting Design | 3 |
| THTR 4653 | Scene Design | 3 |
| Choose 9 hours from the following: | 9 |  |


| THTR 3513 | Drafting for the Theatre |
| :--- | :--- |
| THTR 3683 | Stage Management |
| THTR 3903 | Makeup Design |
| THTR 4063 | Playwriting |
| THTR 4123 | Rendering for the Theatre |
| THTR 4663 | Sound Design and Engineering |
| THTR 4833 | Scene Painting |
| THTR 491V | Special Topics |
| THTR 493V | Special Topics in Design and Technology |
| THTR 4953 | Theatre in London |

Total Hours

## Bachelor of Arts in Theatre with a Concentration in Design and Technology

## Eight-Semester Degree Plan

Students selecting to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) in the Academic Regulations chapter for University requirements of the program as well as the Fulbright College requirements.

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| Satisfies General Education Outcome 2.1: |  |  |
| MATH 1313 Quantitative Reasoning (ACTS Equivalency = MATH 1113) <br> or MATH 1203 College Algebra (ACTS <br> Equivalency = MATH 1103) <br> or any MATH course numbered higher than MATH 1203 | 3 |  |
| THTR 1223 Introduction to Theatre (Satisifies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| THTR 1313 Stage Technology: Costumes and Makeup or THTR 1323 Stage Technology: Scenery and Lighting | 3 |  |
| THTR 1883 Acting I for Theatre Majors ${ }^{2}$ or THTR 1423 Script Analysis | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2) |  | 3 |
| THTR 1313 Stage Technology: Costumes and Makeup or THTR 1323 Stage Technology: Scenery and Lighting |  | 3 |
| THTR 1883 Acting I for Theatre Majors ${ }^{2}$ or THTR 1423 Script Analysis |  | 3 |
| General Electives |  | 3 |
| Year Total: | 15 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) | 4 |  |
| State Minimum Core-Social Sciences (Select a course that satisfies both General Education Outcomes 3.3 and 4.1) ${ }^{3}$ | 3 |  |
| State Minimum Core-Social Sciences (Satisfies General Education Outcome 3.3) ${ }^{4}$ | 3 |  |
| THTR 2313 Fundamentals of Theatrical Design | 3 |  |
| THTR 3001 Production Practicum ${ }^{5}$ | 1 |  |
| General Electives | 1 |  |
| State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) |  | 4 |
| State Minimum Core-Social Sciences (Satisfies General Education Outcome 3.3) ${ }^{4}$ |  | 3 |
| Design and Technology Concentration course 1 |  | 3 |
| Design and Technology Concentration course 2 |  | 3 |
| General Electives |  | 2 |
| Year Total: | 15 | 15 |


| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| State Minimum Core-Humanities (Select a course that satisfies both General Education Outcomes 3.2 and 5.1$)^{6}$ | 3 |  |
| THTR 4233 History of the Theatre I | 3 |  |
| Design and Technology Concentration course 3 | 3 |  |
| Design and Technology Concentration course 4 | 3 |  |
| General Electives | 3 |  |
| THTR 4333 History of the Theatre II (Satisfies General Education Outcome 1.2) |  | 3 |
| Design and Technology Concentration course 5 |  | 3 |
| General Electives |  | 9 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| THTR 3001 Production Practicum ${ }^{5}$ | 1 |  |
| THTR 4991 Theatre Capstone (Satisfies General Education Outcome 6.1) | 1 |  |
| Design and Technology Concentration course 6 | 3 |  |
| Any credit hours numbered at the 3000 -level or higher or any 2000-level credit hours that have a course prerequisite (if needed; otherwise, enroll in general electives) | 4 |  |
| General Electives | 6 |  |
| THTR 3653 Directing I |  | 3 |
| Any UA-Fayetteville credit hours numbered at the 3000-level or higher (if needed; otherwise, enroll in general electives) |  | 3 |
| General Electives |  | 9 |
| Year Total: | 15 | 15 |

## Total Units in Sequence:

${ }^{1}$ THTR 1003 or THTR 1003H may be substituted for THTR 1223 if the student has already completed the course. Otherwise, Theatre majors should enroll in THTR 1223.
${ }^{2}$ THTR 1883 satisfies the State Minimum Core--Fine Arts requirement.
${ }^{3}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123 , HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
4 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003,HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H,PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
5 Theatre majors must complete two semesters of THTR 3001 prior to graduation; however, students may not complete it more than two times.

6 The Humanities Elective courses which satisfy both the General
Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H,
CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H,
PHIL 2103, or PHIL 2103C.

## Requirements for B.A. in Theatre with Performance Concentration

## University and College Requirements for a Bachelor of Arts in Theatre

below (DANC is only applicable in the Performance concentration). A
grade of ' C ' or better is required in all THTR and DANC courses.

THTR 1223 Introduction to Theatre ${ }^{1}$
THTR 1313 Stage Technology: Costumes and Makeup
THTR 1323 Stage Technology: Scenery and Lighting
THTR 1423 Script Analysis
THTR 1883 Acting I for Theatre Majors ${ }^{2}$
THTR 2313 Fundamentals of Theatrical Design
THTR 3001 Production Practicum (one or the other to be completed twice for two credit hours total)
or THTR 301Performance Practicum

| THTR 3653 | Directing I |  |
| :--- | :--- | :--- |
| THTR 4233 | History of the Theatre I |  |
|  |  |  |
| THTR 4333 | History of the Theatre II |  |

Writing Requirement: The Fulbright College research/analytical paper requirement for theatre majors will be fulfilled in THTR 4233 or THTR 4333. Satisfactory completion of an honors project or senior thesis may fulfill the requirement.

Senior Capstone: All theatre majors are required, in the semester before graduation, to successfully complete the Senior Capstone, a faculty assessment of each student's accomplishments in performance and production.

## Requirements for a Concentration in Performance

| Required courses (12 hours) |  |  |
| :---: | :---: | :---: |
| THTR 2483 | Stage Movement | 3 |
| THTR 2683 | Acting II | 3 |
| THTR 2473 | Voice and Speech for the Actor | 3 |
| THTR 4063 | Playwriting | 3 |
| Choose 6 hours from the following: |  | 6 |
| Any dance (DANC) courses |  |  |
| THTR 2461 | Alexander Technique Lessons (may be completed twice for two credit hours total) |  |
| THTR 3663 | Acting: Scene Study |  |
| THTR 3673 | Acting: Auditioning |  |
| THTR 4141 | Singing for Musical Theatre (may be completed twice for two credit hours total) |  |
| THTR 4153 | Musical Theatre Performance |  |
| THTR 4483 | Acting: Meisner I |  |
| THTR 4493 | Acting: Meisner II |  |
| THTR 4683 | Acting: Shakespeare |  |
| THTR 494V | Special Topics in Performance |  |

## Theatre B.A. with Concentration in Performance <br> Eight-Semester Degree Program

Students selecting to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program as well as the Fulbright College requirements.

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| Satisfies General Education Outcome 2.1: |  |  |
| MATH 1313 Quantitative Reasoning (ACTS Equivalency = MATH 1113) or MATH 1203 College Algebra (ACTS | 3 |  |
| $\begin{aligned} & \text { Equivalency }=\text { MATH 1103) } \\ & \text { or any MATH course numbered higher than } \\ & \text { MATH } 1203 \end{aligned}$ |  |  |
| THTR 1223 Introduction to Theatre (Satisifies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |

THTR 1313 Stage Technology: Costumes and Makeup or THTR 1323 Stage Technology: Scenery and Lighting
THTR 1883 Acting I for Theatre Majors ${ }^{2}$
or THTR 1423 Script Analysis
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1)
State Minimum Core-U.S. History or Government
(Satisfies General Education Outcome 4.2)
THTR 1313 Stage Technology: Costumes and
Makeup
or THTR 1323 Stage Technology: Scenery and Lighting
THTR 1883 Acting I for Theatre Majors ${ }^{2}{ }^{2}$
or THTR 1423 Script Analysis
General Electives
Year Total:
Second Year

State Minimum Core-Science with corequisite lab 4
(Satisfies General Education Outcome 3.4)
State Minimum Core-Social Sciences (Select a course that satisfies both General Education Outcomes 3.3 and 4.1) ${ }^{3}$
State Minimum Core-Social Sciences (Satisfies
General Education Outcome 3.3) ${ }^{4}$
THTR 2313 Fundamentals of Theatrical Design
Performance Concentration course 1
State Minimum Core-Science with corequisite lab
(Satisfies General Education Outcome 3.4)
State Minimum Core-Social Sciences (Satisfies
General Education Outcome 3.3) ${ }^{4}$
Performance Concentration course 2
Performance Concentration course 3
General Electives
Year Total:

| Third Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| THTR 4233 History of the Theatre I | 3 |  |
| Performance Concentration course 4 | 3 |  |
| Any Fulbright College credit hours numbered at the | 3 |  |
| 3000-level or higher | 6 |  |

THTR 4333 History of the Theatre II (Satisfies 3
General Education Outcome 1.2)
Performance Concentration course 5 3
Performance Concentration course 6 3
Any Fulbright College credit hours numbered at the 2
3000-level or higher
General Electives
Year Total: 15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| State Minimum Core-Humanities (Select a course <br> that satisfies both General Education Outcomes | 3 |  |
| 3.2 and 5.1) |  |  |
| THTR 3011 Performance Practicum |  |  |
| THTR 4991 Theatre Capstone (Satisfies General | 1 |  |
| Education Outcome 6.1) <br> Any UA-Fayetteville credit hours numbered at the | 1 |  |
| 3000-level or higher <br> General Electives | 3 |  |
| THTR 3011 Performance Practicum${ }^{6}$ | 7 |  |
| THTR 3653 Directing I <br> Any UA-Fayetteville credit hours numbered at the <br> 3000-level or higher <br> General Electives <br> Year Total: |  | 3 |

## Total Units in Sequence:

120
${ }^{1}$ THTR 1003 or THTR 1003 H may be substituted for THTR 1223 if the student has already completed the course. Otherwise, Theatre majors should enroll in THTR 1223.
${ }^{2}$ THTR 1883 satisfies the State Minimum Core--Fine Arts requirement.
${ }^{3}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
4 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013 SOCI 2013H, or SOCI 2033.
5 The Humanities Elective courses which satisfy both the General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
${ }^{6}$ Theatre majors must complete two semesters of THTR 3011 prior to graduation; however, students may not complete it more than two times.

## Requirements for B.A. in Theatre with Theatre Studies Concentration

## University and College Requirements for a Bachelor of Arts in Theatre

In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met.

State Minimum Core (THTR 1003 or THTR 1003H may not fulfill the
Fine Arts core requirement for Theatre majors.)
30 credit hours in theatre (THTR) and dance (DANC) courses listed
below (DANC is only applicable in the Performance concentration). A
grade of ' C ' or better is required in all THTR and DANC courses.
THTR 1223 Introduction to Theatre ${ }^{1}$
THTR 1313 Stage Technology: Costumes and Makeup
THTR 1323 Stage Technology: Scenery and Lighting
THTR 1423 Script Analysis
THTR 1883 Acting I for Theatre Majors ${ }^{2}$
THTR 2313 Fundamentals of Theatrical Design
THTR 3001 Production Practicum (one or the other to be completed twice for two credit hours total)
or THTR 301Performance Practicum
THTR 3653 Directing I
THTR 4233 History of the Theatre $I^{3}$
THTR 4333 History of the Theatre II ${ }^{3}$
THTR 4991 Theatre Capstone
18 credit hours in a single concentration of theatre. Students may 18 choose from 1) Design and Technology, 2) Performance, or 3) Theatre Studies.
Any Fulbright College credit hours numbered at the 3000-level or 0-5 higher (number of credit hours depends on concentration)
Any UA-Fayetteville credit hours numbered at the 3000-level or higheß-11 (number of credit hours depends on concentration)
Any credit hours numbered at the 3000-level or higher or any 2000- 7-9 level credit hours that have a course prerequisite (number of credit hours depends on concentration)
General Electives (number of credit hours depends on concentrationt)2-27

## Total Hours

1 Theatre majors who have already
completed THTR 1003 or THTR 1003H may substitute this course for THTR 1223. Theatre majors may not receive degree credit for both THTR 1003/THTR 1003H and THTR 1223.
2 Fulfills the State Minimum Core--Fine Arts requirement.
${ }^{3}$ Fulfills the Fulbright College writing requirement.

## Requirements for a Concentration in Theatre Studies

| Required courses (12 hours) |  |  |
| :--- | :--- | :--- |
| THTR 2473 | Voice and Speech for the Actor | 3 |
| THTR 2683 | Acting II | 3 |
| THTR 3683 | Stage Management | 3 |
| THTR 4153 | Musical Theatre Performance | 3 |
| Choose 6 hours from the following: | 6 |  |
| THTR 3213 | Costume Design |  |
| THTR 3733 | Lighting Design |  |
| THTR 3903 | Makeup Design |  |
| THTR 4653 | Scene Design |  |
| THTR 4663 | Sound Design and Engineering |  |
| THTR 4833 | Scene Painting |  |

Total Hours

## Bachelor of Arts in Theatre with a Concentration in Theatre Studies <br> Eight-Semester Degree Plan

Students selecting to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for University requirements of the program as well as the Fulbright College requirements.

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency <br> = ENGL 1013) (Satisfies General Education | 3 |

ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{4}$
Satisfies General Education Outcome 2.1: ${ }^{4}$
MATH 1313 Quantitative Reasoning (ACTS
Equivalency $=$ MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency $=$ MATH 1103)
or any MATH course numbered higher than MATH 1203
THTR 1313 Stage Technology: Costumes and Makeup
or THTR 1323 Stage Technology: Scenery and Lighting
THTR 1883 Acting I for Theatre Majors ${ }^{2}$
or THTR 1423 Script Analysis
General Electives
Year Total: 15

| Second Year |  |
| :---: | :---: |
|  | Fall |
| State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2) ${ }^{4}$ | 3 |
| THTR 2313 Fundamentals of Theatrical Design | 3 |
| THTR 3001 Production Practicum ${ }^{3}$ | 1 |
| Theatre Studies Concentration course 1 | 3 |
| General Electives | 5 |
| State Minimum Core-Humanities (Select a course that satisfies both General Education Outcomes 3.2 and 5.1$)^{4}$ |  |

State Minimum Core—Social Sciences (Select
a course that satisfies both General Education
Outcomes 3.3 and 4.1) ${ }^{4}$
THTR 3001 Production Practicum ${ }^{3} \quad 1$
Theatre Studies Concentration course 2 3
Theatre Studies Concentration course 3 3
General Electives 2
Year Total: 15 15

| Third Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| State Minimum Core—Science with corequisite lab | 4 |  |
| (Satisfies General Education Outcome 3.4) |  |  |

$\begin{array}{ll}\text { State Minimum Core—Science with corequisite lab } & 4 \\ \text { (Satisfies General Education Outcome 3.4) }\end{array}$
THTR 3653 Directing I 3
THTR 4333 History of the Theatre II (Satisfies 3
General Education Outcome 1.2) ${ }^{4}$
Theatre Studies Concentration course 63
General Electives 2
Year Total: 15 15

| Fourth Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| State Minimum Core—Social Sciences (Satisfies | 3 |  |

Any UA-Fayetteville credit hours numbered at the 3
3000-level or higher
Any credit hours numbered at the 3000-level or 1
higher or any 2000-level credit hours that have a course prerequisite

General Electives
8
State Minimum Core—Social Sciences (Satisfies 3
General Education Outcome 3.3) ${ }^{4}$
THTR 4991 Theatre Capstone (Satisfies General
Education Outcome 6.1) ${ }^{4}$
Any UA-Fayetteville credit hours numbered at the
3000-level or higher
General Electives
Year Total: 15 15

## Total Units in Sequence:

${ }^{1}$ THTR 1003 or THTR 1003 H may be substituted for THTR 1223 if the student has already completed the course. Otherwise, Theatre majors should enroll in THTR 1223.
${ }^{2}$ THTR 1883 satisfies the State Minimum Core Fine Arts requirement.
${ }^{3}$ Theatre majors must complete two semesters of THTR 3001 prior to graduation; however, students may not complete it more than two times.
${ }^{4}$ Students must complete the State Minimum Core (p. 81) and the requirements of their major(s) as outlined in the Catalog of Studies.

These courses also fulfill many, if not all, of the General Education Requirements (p. 72). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.

Requirements for a Minor in Theatre: A minimum of 18 credit hours in theatre (THTR) courses with a grade of ' $C$ ' or better to be chosen from the list below.

12 credit hours in Theatre (THTR) or Dance (DANC) courses
numbered at the 1000-level or higher.
6 credit hours in Theatre (THTR) or Dance (DANC) numbered at the 3000-level or higher.

## Total Hours

Requirements for Graduation with Honors in Theatre: Both the College and the Departmental Honors Program in Theatre provide undergraduate students with an opportunity to participate formally in creative and/or scholarly activities. Honors candidates carry out independent study and research under the guidance of the Theatre faculty and participate in special honors classes, seminars and colloquia. Admission to the Fulbright Honors Program is open to Theatre majors with a minimum cumulative grade point average of 3.5 in all of their coursework. Honors candidates must complete a minimum of 12 hours of honors courses, three of which will be THTR 399VH Honors Thesis. (THTR 399VH may be repeated for up to six of these 12 hours.) To successfully complete the required thesis, students should choose an honors thesis adviser as early as possible. An adviser should be selected, and an Honors Agreement completed, no later than the first semester in a student's junior year.

Honors candidates must meet the college's requirements for an honors degree. Students graduating with honors will typically be recognized with the distinction "Theatre Scholar Cum Laude." Higher degree distinctions (magna cum laude and summa cum laude) are awarded by the Honors Council, are recommended only in truly exceptional cases, and are based upon the whole of the candidate's program of honors studies.

## Theatre (B.A.) Theatre/Speech Teacher Licensure Requirements:

Please refer to the Secondary Education Requirements (https://teacher-education.uark.edu/licensure/initial-teacher-licensure-programs.php) for Fulbright College Students.

## Faculty

Burrow, Jason E., M.M. (Ohio University), B.M. (University of Arkansas), Associate Professor, 2015, 2021.
Culhane, Michelle, M.A. (New York University), B.S. (Louisiana State University), Instructor, 2018.
Frank, Kate L., M.F.A. (University of Arkansas), B.F.A. (California State University-Los Angeles), Lecturer, 2006.
Hermanson, Karl, M.F.A. (University of South Dakota), B.A. (Dana College), Instructor, 2018.
Herzberg, Amy, M.F.A. (California Institute of the Arts), B.A. (Arizona State University), Distinguished Professor, 1989, 2015.
Hicks, Morgan, M.F.A. (University of Arkansas), M.A. (Missouri State University), B.F.A. (Arkansas State University), Teaching Assistant Professor, 2007.
Irish, Shawn D., M.F.A. (University of Arkansas), B.A. (Missouri Southern State University), Associate Professor, 2013, 2020.
Jilka, Elizabeth C., M.F.A., B.A. (University of Arkansas), Instructor, 2017.

Johnson, Noah, B.A. (Fort Lewis College), Instructor, 2020.
Landman, Michael, M.F.A. (Columbia University), B.A. (State University of New York at Binghamton), Associate Professor, 2004, 2011.
Lane, Valerie Jean, M.F.A. (Pennsylvania State University), B.F.A. (University of Memphis), Instructor, 2008.
Leblanc, Michelle, M.A (New York University), B.S. (Louisiana State University), Instructor, 2018.
Marzolf, Steven, M.F.A. (University of San Diego), B.A. (University of Wisconsin-Green Bay), Teaching Assistant Professor, 2015.
Micheel, Tyler, M.F.A. (University of South Dakota), B.S. (Dakota State University), Instructor, 2016.
Millett, Joseph D., M.F.A. (University of Southern California), B.A. (Union College), Teaching Assistant Professor, 2015.
Riha, Michael, M.F.A. (Indiana University at Bloomington), B.F.A.
(University of Wisconsin, Stevens Point), Professor, 1992, 2008.
Siebrits, Helene, M.F.A. (University of California, Los Angeles), B.A. (University of California, Los Angeles), Associate Professor, 2020.
Smith, Benjamin C., M.F.A. (University of Pittsburgh), B.A. (University of Dallas), Assistant Professor, 2019.
Vera, Eric, Ph.D (University of Texas at Austin), M.A. (University of Northern Colorado), B.F.A. (University of Texas at Austin), , Gordon Morgan Fellow, 2022.
Wade, Les, Ph.D. (University of California-Santa Barbara), M.F.A. (University of Georgia), M.A. (Duke University), B.A. (Tulane University), Professor, 2011.
Walch, John S., M.F.A. (University of Texas at Austin), B.A. (Colorado College), Associate Professor, 2016, 2022.
Wilkerson, Weston, M.F.A. (University of Tennessee), B.A. (Texas A\&M
University), Associate Professor, 2014.

## Courses

THTR 1003. Theatre Appreciation (ACTS Equivalency = DRAM 1003). 3 Hours. Introduction to theatre arts; playwriting, directing, acting, and design. For the general student. May not be presented towards satisfaction of the B.A. in fine arts requirement by theatre majors. (Typically offered: Fall, Spring and Summer)

THTR 1003H. Honors Theatre Appreciation. 3 Hours.
Introduction to theatre arts; playwriting, directing, acting, and design. For the general student. May not be presented towards satisfaction of the B.A. in fine arts requirement by theatre majors. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to THTR 1003.
THTR 1013. Musical Theatre Appreciation. 3 Hours.
Includes reading, viewing, guided listening, critical thinking, creating, and writing about this quintessentially American art form and its role in society. (Typically offered: Fall, Spring and Summer)

## THTR 1013H. Honors Musical Theatre Appreciation. 3 Hours.

Includes reading, viewing, guided listening, critical thinking, creating, and writing about this quintessentially American art form and its role in society. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to THTR 1013.
THTR 1223. Introduction to Theatre. 3 Hours.
This course is designed to create an ensemble of theatre students, passionate about all areas of discipline within the theatre art form. Theatre majors get acquainted with the practical expectations of being a student in the Department of Theatre while gaining a more in-depth appreciation of theatre as a collaborative art form. Prerequisite: Theatre major or minor. (Typically offered: Fall)
This course is equivalent to THTR 1003.

## THTR 1313. Stage Technology: Costumes and Makeup. 3 Hours.

Fundamentals of basic costume construction with an emphasis on techniques, materials, planning and process. Training in the basic principles of theatrical makeup application. Corequisite: Drill component. Prerequisite: Theatre major or instructor consent. (Typically offered: Fall and Spring)

## THTR 1323. Stage Technology: Scenery and Lighting. 3 Hours.

Fundamentals of scenery and lighting technology with emphasis on theatre tools, equipment, and basic drafting. Training in basic principles and skills of stage carpentry, scene painting, lighting technology and rigging. Prerequisite: Theatre major or instructor consent. Corequisite: Drill component. (Typically offered: Fall and Spring)

## THTR 1423. Script Analysis. 3 Hours.

Investigation of the dramatic forms and structures of play texts - from the classical era to the present - with special emphasis on how actors, directors, and designers encounter and realize texts in the production process. (Typically offered: Fall and Spring)

## THTR 1683. Acting I. 3 Hours.

An introductory acting studio course, exploring the physical, vocal, analytical, and imaginative processes required for the performance of dramatic texts. Through exercises and scene study, this course builds a vocabulary and technique for acting. (Typically offered: Fall and Spring)

## THTR 1883. Acting I for Theatre Majors. 3 Hours.

An introductory acting studio course for theatre majors, exploring the physical, vocal, analytical, and imaginative processes required for the performance of dramatic texts. Through exercises and scene study, this course builds a vocabulary and technique that serves as a foundation for theatre classes within the major. Corequisite: Theatre major or minor. (Typically offered: Fall and Spring)

## THTR 2313. Fundamentals of Theatrical Design. 3 Hours.

Principles and practices of theatre design including the elements of design and the fundamental principles of art and their application to the areas of set, costume, and lighting design. This course studies the designer's role in the theatre, design process, and aesthetics. Emphasis on the basic principles of two-dimensional art and graphic forms through the use of various media. Prerequisite: THTR 1313, THTR 1323 and THTR 1423. (Typically offered: Fall)
THTR 2461. Alexander Technique Lessons. 1 Hour.
Students will become aware of habitual patterns of tension and how these patterns interfere with performance, learning, and overall health. The Technique offers practical skills for improving coordination and for re-gaining a sense of ease of movement in all activities. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## THTR 2473. Voice and Speech for the Actor. 3 Hours.

Develops the student's free, natural voice for use on stage and in front of the camera. Topics address physical awareness, breath awareness, touch of sound, gathering vibrations, channel of sound, spine awareness, resonators, rib awareness, and articulation. Prerequisite: (THTR 1223 or THTR 1003), THTR 1423, and (THTR 1683 or THTR 1883). (Typically offered: Fall and Spring)

## THTR 2483. Stage Movement. 3 Hours.

An introduction to the Psycho-physical approach to acting and actor training developed by Michael Chekhov. Prerequisite: (THTR 1003 or THTR 1223), THTR 1423 and (THTR 1683 or THTR 1883). (Typically offered: Fall and Spring)

## THTR 2683. Acting II. 3 Hours.

An acting studio course deepening the exploration of techniques introduced in Acting I, including expanded work on characterization and script analysis through exercises, scene-work and monologue performance. Prerequisite: THTR 1683 or THTR 1883. (Typically offered: Fall and Spring)

THTR 3001. Production Practicum. 1 Hour.
Credit for participation in technical assignments related to mainstage or facultydirected productions: one (1) credit hour per production. Assignments shall be determined by the faculty. Credit will be awarded only after completion of assignments and only with faculty approval. Pre- or corequisite: Current standing as a THTR Major or Minor or with instructor permission. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
THTR 3011. Performance Practicum. 1 Hour.
Credit for performance in faculty directed productions; one credit hour per production. Assignments shall be determined by the faculty. Credit will be awarded only after satisfactory completion of assignment and with faculty approval. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

## THTR 3213. Costume Design. 3 Hours.

Learn the art and practice of costume design for theatrical productions. Emphasis will be placed on the elements and principles of design as it relates to character development. Additional emphasis will be placed on script analysis, research methods, fabric selection, collaboration, and rendering techniques. Prerequisite: THTR 2313. (Typically offered: Fall Odd Years)

THTR 3463. Introduction to the Alexander Technique. 3 Hours.
The Alexander Technique helps us to become aware of habits of tension and how these patterns interfere with performance, learning, and overall health. The technique offers a systematic process of re-learning how to move with more ease and coordination in all activities. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

## THTR 3513. Drafting for the Theatre. 3 Hours.

Covers basic technical drawing and graphic skills necessary to communicate design ideas to fellow artisans. Both production and design-oriented drafting will be explored using both hand drafting and computer techniques. Prerequisite: THTR 1323 or instructor consent. (Typically offered: Fall Even Years)

## THTR 3653. Directing I. 3 Hours.

Basic principles and techniques of play direction, including play analysis, audition and rehearsal organization, staging and collaborating with actors. Pre- or Corequisite: Theatre major and junior or senior standing, or instructor consent. Prerequisite: (THTR 1223 or THTR 1003 or THTR 1003H), THTR 1313, THTR 1323, THTR 1423, and (THTR 1683 or THTR 1883). (Typically offered: Fall and Spring)

## THTR 3663. Acting: Scene Study. 3 Hours.

An advanced acting studio building on techniques introduced in Acting I and II. Intensive work on script analysis, emotional preparation, awakening the imagination, characterization, partner work and playing action. Prerequisite: THTR 2683. (Typically offered: Spring)

## THTR 3673. Acting: Auditioning. 3 Hours.

An advanced acting course, focusing on theatrical monologues and developing the actor's confidence and ability in theatre auditioning. In simulated auditions, students develop and explore contrasting monologues, including contemporary and classical pieces, comedy, and drama. Students practice slating techniques, cold and prepared callbacks, musical auditions, video submissions, and resume preparation. Prerequisite: THTR 2683. (Typically offered: Fall)

## THTR 3683. Stage Management. 3 Hours.

The study of the principles of stage management as practiced in academic and professional theatre. The course develops the core management skills of communication and organization through classroom exercises. The course also provides opportunities for stage management in University productions. Prerequisite: THTR 1313 and THTR 1323. (Typically offered: Spring)

THTR 3733. Lighting Design. 3 Hours.
The study of the art and practice of stage lighting design through demonstration and projects. The course includes lighting technology, history, electricity, fixtures, consoles and control systems. Emphasis is placed on collaboration and storytelling with light. Prerequisite: THTR 2313. (Typically offered: Fall Even Years)

## THTR 3903. Makeup Design. 3 Hours.

Learn the principles, techniques, materials, and tools used in makeup design for theatrical productions. Character analysis, character development, as well as period styles will be the basis for all makeup applications. Specialized make up includes an introduction to prosthetics, scars, and wounds. Prerequisite: THTR 2313. (Typically offered: Irregular)

## THTR 3923H. Honors Colloquium. 3 Hours.

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in THTR). (Typically offered:
Irregular) May be repeated for degree credit.
THTR 399VH. Honors Thesis. 1-6 Hour.
The Honor student will complete a thesis. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

## THTR 4063. Playwriting. 3 Hours.

A beginning workshop in the fundamentals of playwriting designed for students interested in exploring how their personal stories translate and get expressed theatrically. Exercises in dialogue, character development, conflict, and dramatic structure will culminate in the completion of an original one-act play. Prerequisite: Sophomore standing or greater. (Typically offered: Fall and Spring)

## THTR 4123. Rendering for the Theatre. 3 Hours.

Develops the vocabulary of visual communication for theatre using a variety of media and techniques. Investigation of traditional as well as digital drawing and painting methods and materials used by theatrical designers. Prerequisite: THTR 2313. (Typically offered: Spring Odd Years)

## THTR 4141. Singing for Musical Theatre. 1 Hour.

Private study of the singing voice focusing on musical theatre vocal technique and repertoire. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

## THTR 4153. Musical Theatre Performance. 3 Hours.

Principles and techniques of performing a singing role for the theatre. Examines the relationship between score and text. (Typically offered: Fall Even Years)

## THTR 4233. History of the Theatre I. 3 Hours.

A survey of dramatic literature, theatre practices and cultural contexts for dramatic presentation from classical Greece through the 19th century. The research component of this course fulfills the Fulbright Writing Requirement. Prerequisite: THTR 1223 or THTR 1003 or THTR 1003H. (Typically offered: Fall)

## THTR 4333. History of the Theatre II. 3 Hours.

A survey of dramatic literature from the rise of realism to the present, designed to examine historical context, theatrical convention, modes of storytelling and questions of diversity and inclusion in the theatrical cannon. Prerequisite: THTR 1223 or THTR 1003 or THTR 1003H. (Typically offered: Spring)
THTR 4463. African American Theatre History -- 1950 to Present. 3 Hours. A chronological examination of African-American theatre history from 1950 to the present through the study of African-American plays and political/social conditions. Upon completion of this course the student should be familiar with the major works of African-American theatre and have a deeper understanding of American History. (Typically offered: Irregular)
THTR 4483. Acting: Meisner I. 3 Hours.
This course introduces students to the Sanford Meisner approach to acting. A progressive series of exercises focus on listening, concentration, imagination, working from impulse, and actively connecting to given circumstances. This class is the first in a two course sequence of Meisner study. Prerequisite: THTR 2683. (Typically offered: Fall Odd Years)

## THTR 4493. Acting: Meisner II. 3 Hours.

Continuation of Beginning Meisner Technique. A progressive series of exercises focus on emotional preparation, connection to impulse, and living fully under imaginative circumstances. Prerequisite: THTR 4483. (Typically offered: Spring Even Years)

## THTR 4653. Scene Design. 3 Hours.

Theory and practice in the art of scenic design, including historical and contemporary styles and techniques. Prerequisite: THTR 2313. (Typically offered: Spring Even Years)

## THTR 4663. Sound Design and Engineering. 3 Hours.

The study and application of sound in a theatrical environment covering both technology and design aspects of sound in a live setting. Prerequisite: THTR 2313. (Typically offered: Irregular)

## THTR 4683. Acting: Shakespeare. 3 Hours.

An acting studio course exploring the performance of Shakespearean texts, with focus on scansion, verse and prose, poetry, characterization and voice and articulation. Prerequisite: THTR 2683. (Typically offered: Spring Odd Years)

THTR 4703. Theatre Education: Methods of Instruction. 3 Hours.
Introduces leading theories and practices in theatre instruction for junior high and high school students. Focuses on creating, adapting, and justifying pedagogical strategies as well as the design and implementation of effective theatre curriculum. Prerequisite: CIED 3033 or SEED 4022 or instructor's consent. (Typically offered: Fall)
THTR 4713. Theatre Education: Program Design and Leadership. 3 Hours. Introduces the skills necessary for the successful integration of theatre arts in the secondary school environment. Focuses on the promotion of theatre as a discipline, both in classes and as an co-curricular activity. Advances planning and leadership skills necessary for theatre program directors. Contains one required field experience. Prerequisite: THTR 4703. (Typically offered: Spring)

## THTR 4833. Scene Painting. 3 Hours.

A studio class in painting techniques for the theatre. Exercises in color, textures, styles, and execution. Prerequisite: THTR 2313. (Typically offered: Fall Even Years)

## THTR 490V. Independent Study. 1-3 Hour.

Individually designed and conducted programs of reading and reporting under the guidance of a faculty member. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

## THTR 491V. Special Topics. 1-3 Hour.

Classes not listed in the regular curriculum, offered on demand on the basis of student needs and changes within the profession. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

THTR 492V. Internship. 1-12 Hour.
A practical, experiential approach to performance and production using the internship program to provide training and experience more advanced than that provided during the normal school year. Students will outline a contract of specific requirements based upon that individual's needs, goals, and skills. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

## THTR 493V. Special Topics in Design and Technology. 1-3 Hour.

Topics not listed in the regular curriculum. Topics related to scenery, costumes, lighting, and sound will be offered on demand to accommodate Design \& Technology focused student needs and changes within the profession. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## THTR 494V. Special Topics in Performance. 1-3 Hour.

Topics not listed in the regular curriculum. Topics related to acting, directing, and playwriting will be offered on demand to accommodate Design \& Technology focused student needs and changes within the profession. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

THTR 4953. Theatre in London. 3 Hours.
Immerses scholars in the world of theatre and culture in Britain. Students spend four weeks in London with excursions to Stratford-upon-Avon, Oxford and Bath. Literature, performance, design and history are all explored through lectures, field trips and writing prompts. (Typically offered: Summer)

THTR 4991. Theatre Capstone. 1 Hour.
A culminating experience in the major, students will develop a portfolio of work encompassing their undergraduate focus in Performance or Design and Technology. The course concludes with a presentation of their body of work to a panel of Theatre Department faculty akin to a professional audition or portfolio review. (Typically offered: Fall)

## World Languages, Literatures, and Cultures (WLLC)

Linda Carol Jones
Chair of Department
425 Kimpel Hall
479-575-2951
World Languages, Literatures and Cultures Website (http://
fulbright.uark.edu/departments/world-languages/)
The world languages requirement among the basic courses is satisfied based on each separate department's undergraduate degree program. Students should consult their adviser to confirm the total number of courses needed to satisfy their departmental world language requirement. Students who, on the basis of prior knowledge of language, omit one or more courses in the basic language sequence (1003-2013) may receive college credit for omitted courses if they validate their higher placement by passing an advanced course with a grade of " $C$ " or above.

Conversation courses $(3033,4033)$ and self-paced (correspondence) courses may not be used to validate such prior knowledge.

For majors in Greek and Latin, go to Classical Studies (p. 355).
For information on advanced degrees in world languages, go to the Graduate School Catalog.

## Requirements for B.A. in Arabic

Requirements for a Major in Arabic: In addition to the state minimum core (p. 81) and the Fulbright College of Arts and Sciences Graduation Requirements (http://catalog.uark.edu/undergraduatecatalog/ collegesandschools/jwilliamfulbrightcollegeofartsandsciences/), the following departmental and major course requirements must be met.

## State Minimum Core

Six hours of language-related courses to be fulfilled by completing six hours of a single world language different than the major, or six hours from any combination of language-related area/ethnic studies courses, department-approved WLLC courses (such as WLLC 3173, WLLC 4023, WLLC 4033), or classical studies (CLST) courses.
Arabic Courses (24 hours)
ARAB 3016 Immersive Arabic III ${ }^{1}$ 6
$\begin{array}{ccc}\text { or ARAB } & \text { 3016 Honors Immersive Arabic III } & \\ \text { ARAB } 4016 \quad \text { Immersive Arabic IV }\end{array}$
or ARAB 4016HHonors Immersive Arabic IV
ARAB 3033 Colloquial Arabic
3

Six hours of ARAB electives 3000-level or higher in language,
literature, and culture, selected in consultation with the major advisor.
Additional Studies Requirement
55 additional credit hours required for the degree must include whatever coursework is necessary for the completion of an additional major or minor in any field other than Arabic, or completion of the College Honors core. Within these 55 hours, also, 6 credit hours must be completed towards the University Residency Requirement, and 16 credit hours must be completed towards the 40-hour Rule. Any remaining credit hours can be completed as general electives or applied towards further additional major or minor requirements.

## Total Hours

1 ARAB 1016 and ARAB 2016 or equivalent may be required prior to taking ARAB 3016.

## Arabic B.A.

Eight-Semester Degree Plan

First Year | Units |
| ---: |
| Fall |

ENGL 1013 Composition I (ACTS Equivalency 3
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
Satisfies General Education Outcome 1.2:
MATH 1313 Quantitative Reasoning (ACTS
Equivalency = MATH 1113)
or MATH 1203 College Algebra (ACTS
Equivalency = MATH 1103)
or any MATH course numbered higher than MATH 1203

ARAB 1016 Immersive Arabic I
Or Additional Studies Requirement
U.S. History or Government State Minimum Core

3
requirement (Satisfies General Education Outcome 4.2)

ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
ARAB 2016 Immersive Arabic II
Or Humanities State Minimum Core requirement and an Additional Studies Requirement (3 credit hours) (Select a course that satisfies General Education Outcomes 3.2 and 4.1) ${ }^{1}$
Additional Studies Requirement (if needed) 3
Science State Minimum Core requirement Lecture 4
with Corequisite Lab (Satisfies General Education
Outcome 3.4)
Year Total: 15

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ARAB 3016 Immersive Arabic III | 6 |  |
| Science State Minimum Core requirement lecture | 4 |  |

Social Sciences State Minimum Core requirement (Select a course which satisfies General Education Outcomes 3.3 and 5.1) ${ }^{2}$

Additional Studies Requirement
3
ARAB 4016 Immersive Arabic IV
Social Sciences State Minimum Core requirement (Satisfies General Education Outcome 3.3) ${ }^{3}$
Additional Studies Requirement
Year Total:
Third Year Fall

Units
Spring
3
Social Sciences State Minimum Core requirement
(Satisfies General Education Outcome 3.3)

Satisfies General Education Outcome 3.3)
Select one of the following:
Additional world language course
WLLC 3173 Introduction to Linguistics
WLLC 4023 Languages, Cultures, and Teaching with Technology
Area studies course as approved by advisor
Additional Studies Requirement
ARAB 4023 Advanced Arabic I
Select one of the following:
Additional world language course
WLLC 3173 Introduction to Linguistics
WLLC 4023 Languages, Cultures, and Teaching with Technology
Area studies course as approved by advisor
Fine Arts State Minimum Core requirement
(Satisfies General Education Outcome 3.1) ${ }^{4}$
Additional Studies Requirement
Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ARAB elective 3000-level or higher | 3 |  |
| Additional Studies Requirement | 12 |  |
| ARAB elective 3000-level or higher (Satisfying |  | 3 |
| General Education Outcomes 1.2 and 6.1) |  |  |
| Additional Studies Requirement |  | 10 |
| Year Total: | 15 | 13 |

## Total Units in Sequence:

${ }^{1}$ The Humanities Electives that satisfy both General Education Outcomes 3.2 and 4.1 include:
ANTH 1033, CLST 1003, CLST 1003H, CLST 1013, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HUMN 1124H, HUMN 2213, LALS 2013, MUSY 2003, MUSY 2003H, WLIT 1113, WLIT 1123, or Intermediate-level world language (usually 2003-level).
2 The Social Sciences Electives that satisfy both General Education Outcomes 3.3 and 5.1 include:
HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2813, or PLSC 2813H.
${ }^{1}$ ARAB 1016 and ARAB 2016 or equivalent may be required prior to taking ARAB 3016.

Substitutions for courses in this list can be approved by Arabic major advisers (for example, for study abroad credits and transfer credits).

## Requirements for B.A. in French

University and College Requirements for a Bachelor of Arts in French: In addition to the Fulbright College of Arts and Sciences Graduation Requirements (see under Degree Completion Program Policy), the following course requirements must be met. The list of University/State Minimum Core courses can be found here (http:// catalog.uark.edu/undergraduatecatalog/academicregulations/ universitycore/).

## University/State Minimum Core

Six hours of language-related courses to be fulfilled by completing six hours of a single world language different than the major, or six hours from any combination of language-related area/ethnic studies courses, department-approved WLLC courses (such as WLLC 2413, WLLC 3173, WLLC 4023, WLLC 4033), or classical studies (CLST) courses.

| French Courses (24 hours) |  |  |
| :---: | :---: | :---: |
| FREN 3003 | Advanced French ${ }^{1}$ | 3 |
| FREN 3113 | Introduction to Literature | 3 |
| FREN 4003 | French Grammar and Composition | 3 |
| FREN 4033 | French for Oral Proficiency | 3 |
| FREN 4213 | French Civilization | 3 |
| FREN literature courses 4000-level or higher |  |  |
| Any other FREN course 3000-level or higher |  |  |
| Additional Studies Requirement |  |  |
| 55 additional whatever cou major or min College Hon must be com and 16 credi Any remainin applied towa | dit hours required for the degree mus work is necessary for the completion any field other than French, or comp ore. Within these 55 hours, also, 6 cr d towards the University Residency rs must be completed towards the 40 dit hours can be completed as gene urther additional minor or major requi |  |

## Total Hours

${ }^{1}$ FREN 1003, 1013, 2003, and 2013 or equivalent may be required prior to taking FREN 3003.

Writing Requirement: The college writing requirement may be satisfied by a term paper or other written work submitted for an upper-division world language literature class approved by the chair of the department.

## French B.A. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program. The following eight-semester plan refers to both University Core and additional departmental requirements as presented above. Hours may vary by individual, based on placement and previous credit granted. Once all core and departmental requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency |  |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  | 3

FREN 1013 Elementary French II (ACTS
Equivalency $=$ FREN 1023) (or a higher-level
FREN course, depending on placement in sequence)

Or Additional Studies Requirement
Science State Minimum Core Requirement Lecture
with Corequisite Lab (Satisfies General Education
Outcome 3.4)
Additional Studies Requirement
Social Sciences State Minimum Core Requirement
(Satisfies General Education Outcome 3.3) ${ }^{1}$
Year Total:

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

FREN 2003 Intermediate French I (ACTS 3
Equivalency = FREN 2013) (or a higher-level
FREN course, depending on placement in sequence (Satisfies General Education Outcomes 3.2 and 4.1)

Science State Minimum Core Requirement Lecture
with Corequisite Lab (Satisfies General Education Outcome 3.4)
Additional Studies Requirement 6
An additional world language or WLLC 2413, 3
WLLC 3173, WLLC 4023 or an area studies course approved by adviser
FREN 2013 Intermediate French II (ACTS
Equivalency = FREN 2023) (or a higher-level
FREN course, depending on placement in sequence)

Or Additional Studies Requirement
Additional Studies Requirement
Social Sciences State Minimum Core Requirement (Select a course which satisfies General Education Outcomes 3.3 and 5.1) ${ }^{2}$
Fine Arts State Minimum Core Requirement (Satisfies General Education Outcome 3.1) ${ }^{3}$
An additional world language or WLLC 2413, WLLC 3173, WLLC 4023 or an area studies course approved by adviser
Year Total: 16

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

FREN 3003 Advanced French 3
Additional Studies Requirement 12
FREN 3113 Introduction to Literature 3
FREN 4003 French Grammar and Composition 3
Additional Studies Requirement 9
Year Total: 15
15

| Fourth Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| FREN 4033 French for Oral Proficiency (Satisfies | 3 |  |

FREN 4213 French Civilization

## 3

FREN literature 4000-level or higher (Select a course which satisfies General Education Outcome $6.1)^{4}$
Additional Studies Requirement 7
FREN 3000-level or higher elective
FREN literature 4000-level or higher
Additional Studies Requirement
Year Total:
16

## Total Units in Sequence:

${ }^{1}$ The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H,HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
2 The Social Sciences Elective courses which satisfies both General Education Outcomes 3.3 and 5.1 include: HDFS 1403, HDFS 2603, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2813, or PLSC 2813H.
${ }^{3}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
4 The FREN literature 4000-level or higher courses which satisfy General Education Outcome 6.1 include: FREN 4223, FREN 4233, or FREN 4243.

## Requirements for and Additional Major in French for Non-Arts and Science Students

Students in colleges and schools other than the Fulbright College of Arts and Sciences (Business; Education; Engineering; Agricultural, Food, \& Life Sciences; Architecture) must complete 24 hours of coursework in French at the 3000-level and above. This is the same amount of coursework in French in the undergraduate major in French in Fulbright College.

The normal course sequence of FREN courses fulfilling the major requirements for non-native speakers is as follows:

| FREN 3003 | Advanced French | 3 |
| :--- | :--- | ---: |
| FREN 3000 or higher elective | 3 |  |
| FREN 3113 | Introduction to Literature | 3 |
| FREN 4003 | French Grammar and Composition | 3 |
| FREN 4033 | French for Oral Proficiency | 3 |
| FREN 4213 | French Civilization | 3 |
| FREN 4000-level literature electives | 6 |  |
| Total Hours | $\mathbf{2 4}$ |  |

## Total Hours

Substitutions for courses in this list can be approved by French major advisers (for example, for study abroad credits and transfer credits).

## Requirements for B.A. in German

University of Arkansas and Fulbright College of Arts and Sciences Requirements for a Bachelor of Arts in German: The following credit hour requirements must be met (see Degree Completion Program Policy for additional information). In addition, the Fulbright College Writing Requirement may be satisfied by completing a term paper or other written work submitted for a German (GERM) course numbered 3000-level or higher approved by the chair of the department. Completion of an honors thesis will also satisfy this requirement.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser.

## State Minimum Core

Six credit hours of language-related courses to be fulfilled by completing six credit hours of a single world language different than the major, or six credit hours from any combination of languagerelated area/ethnic studies courses, department-approved WLLC courses (such as WLLC 3173, WLLC 4023, or WLLC 4033), or classical studies (CLST) courses.
15 credit hours in the German (GERM) courses numbered at the 3000 -level or higher from the list below, with a minimum grade of " $C$ " in each course, including:

| GERM 3003 | Advanced German I $^{1}$ |
| :--- | :--- |
| GERM 3013 | Introduction to Literature |
| GERM 4003 | Advanced German II |
| GERM 4213 | German Civilization |
| GERM 3033 | Conversation |

Nine credit hours in German (GERM) electives numbered at the 9 3000-level or higher

## Additional Studies Requirement

An additional 55 credit hours required for the degree must include whatever coursework is necessary for the completion of an additional major or minor in any field other than German, or completion of the College Honors core. Within these 55 hours, also, six credit hours must be any UA-Fayetteville credit hours numbered at the 3000 -level or higher, and 13 credit hours must be any credit hours numbered at the 3000 -level or higher, or any 2000 -level credit hours that have a course prerequisite. Any remaining credit hours can be completed as general electives or applied towards further additional minor or major requirements.

## Total Hours

${ }^{1}$ GERM 1003, 1013, 2003, and 2013 or equivalent may be required prior to taking GERM 3003.

German (GERM) courses at the 5000 -level, such as GERM 5223 (Early German Literature), GERM 5273 (Enlightenment through Classicism), and GERM 5363 (Literature after 1945) may be taken by undergraduates with exceptional language skills after approval by the undergraduate adviser and a petition to the graduate school.

Writing Requirement: The college writing requirement may be satisfied by a term paper or other written work submitted for an upper-division world language literature class approved by the chair of the department.

## Eight-Semester Degree Plan for a Bachelor of

 Arts in GermanStudents enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser.


Three credit hours in a single world language different than the major, language-related area/ ethnic studies courses, department-approved WLLC courses (such as WLLC 3173, WLLC 4023, or WLLC 4033), or classical studies (CLST) courses (CLST 1003 and/or CLST 1013 satisfies General Education Learning Outcomes 3.2, 4.1, and 5.1). ${ }^{1}$
GERM 2013 Intermediate German II (ACTS
Equivalency = GERM 2023) (or a higher-level GERM course, depending on placement in sequence)
or Additional Studies Requirement
Additional Studies Requirement 3
State Minimum Core—Social Science 3
State Minimum Core—Fine Arts (Satisfies General 3
Education Outcome 3.1) ${ }^{1}$
Three credit hours in a single world language
different than the major, language-related area/ ethnic studies courses, department-approved
WLLC courses (such as WLLC 3173, WLLC
4023, or WLLC 4033), or classical studies (CLST)
courses (CLST 1003 and/or CLST 1013 satisfies
General Education Learning Outcomes 3.2, 4.1,
and 5.1). ${ }^{1}$
Year Total: 16

| Third Year | Units |
| :--- | ---: | ---: |
| Fall | Spring |

GERM 4213 German Civilization (Satisfies General 3
Education Outcomes 1.2 and 6.1) ${ }^{1}$
Additional Studies Requirement 9
Year Total: 15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| GERM 3033 Conversation | 3 |  |
| GERM electives numbered at the 3000-level or <br> higher | 3 |  |
| Additional Studies Requirement <br> GERM electives numbered at the 3000-level or <br> higher | 9 | 6 |
| Additional Studies Requirement <br> Year Total: | 15 | 13 |
| Total Units in Sequence: |  | $\mathbf{1 2 0}$ |

1 Students must complete the State Minimum Core (https://
nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F
\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened
\%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu
\%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8
\%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1Any UA-Fayetteville credit hours numbered at the 3000-level or higher ..... 3\%7C1000\&sdata=ZHBCul1Vytd
\%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu
 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiLCJXVCI6Mn0\%3D
\%7C1000\&sdata=r35av68n3oEQW9FsllqBgmbsTnUENpJF7EoP4AD4Bks
\%3D\&reserved=0). Please visit these pages in the links provided and consult with your academic advisor when making course selections to fulfill these requirements.
Any credit hours numbered at the 3000-level or higher, or any 2000- 10
level credit hours that have a course prerequisite
General Electives 42
Total Hours 120
Concentration Requirements:
ITAL 3113 Introduction to Literature 3
ITAL 4033 Advanced Italian Conversation 3
Nine credit hours in Italian (ITAL) courses numbered at the 3000-level 9 or higher

## Requirements for an Additional Major in German for Non-Arts and

 Science Students: Students in colleges other than the Fulbright College of Arts and Sciences can complete an additional major in German by completing 24 hours in German:| GERM 3003 | Advanced German I | 3 |
| :--- | :--- | ---: |
| GERM 3013 | Introduction to Literature | 3 |
| GERM 3033 | Conversation | 3 |
| GERM 4003 | Advanced German II | 3 |
| GERM 4213 | German Civilization | $\mathbf{3}$ |
| $\mathbf{9}$ hours of upper-level electives | $\mathbf{9}$ |  |
| Total Hours | $\mathbf{2 4}$ |  |

Students must also fulfill their home college's core and the degree requirements for the major in their college to be eligible.

## Requirements for B.A. in Italian with Literary and Cultural Studies Concentration

The following credit hour requirements must be met (refer to Degree Completion Program Policy (http:// catalog.uark.edu/undergraduatecatalog/collegesandschools/ jwilliamfulbrightcollegeofartsandsciences/) for additional information. In addition, the Fulbright College Writing Requirement may be satisfied by successful completion of ITAL 4123 or ITAL 4143.

State minimum core (p. 81) requirements may vary by individual, based on placement and previous course credit earned. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser.

| State Minimum Core | 35 |  |
| :--- | :--- | ---: |
| Choose one course from the following: | 3 |  |
| CLST 1013 | Introduction to Classical Studies: Rome |  |
| CLST 2323 | Greek and Roman Mythology |  |
| ITAL 3333 | Made In Italy | 3 |
| MRST 2013 | Introduction to Medieval and Renaissance Studies |  |
| ITAL 3033 | Italian Conversation | 3 |
| ITAL 3103 | Italian Cinema | 3 |
| ITAL 3123 | Advanced Italian | 3 |
| Choose one course from the following: |  |  |
| ITAL 4123 | Dante: A Journey Between Visions and Words |  |
| ITAL 4143 | Tracing the Italian American Experience | 15 |
| Concentration |  |  |

## Total Hours

## Italian B.A. with Literary and Cultural Studies Concentration <br> Eight-Semester Degree Program <br> Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67). <br> State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic adviser.



State Minimum Core-U.S. History or Government (Satisfies General Education Outcome 4.2) ${ }^{1}$

Year Total:

15

| Second Year |  |
| :---: | :---: |
|  | Fall |
| ITAL 2003 Intermediate Italian I (Satisfies General Education Outcomes 3.2 and 4.1$)^{1}$ | 3 |
| ITAL 3103 Italian Cinema | 3 |
| State Minimum Core-Social Science (Satisfies General Education Outcome 5.1) ${ }^{1}$ | 3 |
| State Minimum Core-Science with corequisite lab | 4 |
| General Electives | 2 |
| ITAL 2013 Intermediate Italian II |  |
| State Minimum Core-Social Science |  |
| General Electives |  |
| Year Total: | 15 |


| Third Year | Fall |
| :--- | ---: |
| ITAL 3033 Italian Conversation | 3 |
| ITAL electives 3000 -level or higher | 3 |
| Any UA-Fayetteville credit hours numbered at the | 3 |
| 3000-level or higher | 6 |
| General Electives | 6 |

ITAL 4033 Advanced Italian Conversation
ITAL 3113 Introduction to Literature
Any credit hours numbered at the 3000 -level or higher, or any 2000-level credit hours that have a course prerequisite
General Electives
Year Total:
Fourth Year
Fall

Units
Spring
Units
Spring

Words (Satisfies General Education Outcomes 1.2 and 6.1) ${ }^{1}$
or ITAL 4143 Tracing the Italian American
Experience
ITAL electives 3000-level or higher
3
Any credit hours numbered at the 3000-level or higher, or any 2000-level credit hours that have a course prerequisite
General Electives
ITAL 3123 Advanced Italian
ITAL electives 3000-level or higher

| Choose one course from the following: | 3 |  |
| :--- | :--- | :--- |
| CLST 1013 | Introduction to Classical Studies: Rome |  |
| CLST 2323 | Greek and Roman Mythology |  |
| ITAL 3333 | Made In Italy |  |
| MRST 2013 | Introduction to Medieval and Renaissance Studies |  |
| ITAL 3033 | Italian Conversation | 3 |
| ITAL 3103 | Italian Cinema | 3 |
| ITAL 3123 | Advanced Italian | 3 |
| Choose one course from the following: | 3 |  |

ITAL 4123 Dante: A Journey Between Visions and Words ITAL 4143 Tracing the Italian American Experience
Concentration15

Any UA-Fayetteville credit hours numbered at the 3000-level or higher 3
Any credit hours numbered at the 3000-level or higher, or any 2000- 10
level credit hours that have a course prerequisite
General Electives 42

Total Hours 120
Concentration Requirements:

15 credit hours chosen from below. No more than nine credit hours may be chosen from a single discipline.

| ARHS 4423 | Roman Art and Archaeology | 3 |
| :--- | :--- | :--- |
| ARHS 4733 | Saint Peter's and the Vatican | 3 |
| ARHS 4753 | Renaissance and Baroque Architecture | 3 |
| ARHS 4853 | Italian Renaissance Art | 3 |
| ARHS 4873 | Baroque Art | 3 |
| CLST 4423 | Roman Art and Archaeology | 3 |
| ENGL 3173 | Introduction to Linguistics | 3 |
| ENGL 3433 | Introduction to Chaucer | 3 |
| ENGL 3713 | Topics in Medieval Literature and Culture | 3 |
| ENGL 3723 | Topics in Renaissance Literature and Culture | 3 |
| ENGL 4713 | Studies in Medieval Literature and Culture | 3 |
| ENGL 4723 | Studies in Renaissance Literature and Culture | 3 |
| HIST 3303 | U.S. Immigration History | 3 |
| HIST 3383 | Arkansas and the Southwest | 3 |
| HIST 3703 |  | 3 |
| HIST 3883 | Modern Italy and the World, 1861-Present | 3 |
| HIST 3963 |  | 3 |
| HIST 4023 | Roman Republic | 3 |
| HIST 4073 | Renaissance and Reformation, 1300-1600 | 3 |
| HIST 4973 | The Civilization of the Renaissance in Italy | 3 |
| ITAL 4133 | The Power of Women: Representations of \& from | 3 |
|  | Italian Women from Middle Ages to Early Modern |  |


| or GNST 4133 | Italian Women from the Middle Ages to the Early |
| :---: | :--- | :--- |
|  | Modern Period |
| or MRST 4133 |  |
|  | The Power of Women: Representations of from Italian |
| Women from Middle Ages to Early Modern Period |  |

PHIL 40233
PLSC 3823 Theories of International Relations 3
PLSC 4803 Foreign Policy Analysis 3
PLSC 4833 International Political Economy 3
or other related courses as approved by the director of the program.

## Italian B.A. with Transnational Studies Concentration <br> Eight-Semester Degree Program

Students enrolling in the eight-semester degree plan should review the Eight-Semester Degree Completion Policy (p. 67).

State minimum core requirements may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute with general electives in consultation with their academic advisor.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) $^{1}$ |  |  |

MATH 1313 Quantitative Reasoning (ACTS
Equivalency $=$ MATH 1113) (Satisfies General Education Outcome 2.1) ${ }^{1}$

$$
\text { or MATH } 1203 \text { College Algebra (ACTS }
$$

Equivalency $=$ MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$
or any MATH or STAT course numbered higher than MATH 1203 (Satisfies General Education Outcome 2.1) ${ }^{1}$
ITAL 1003 Elementary Italian I
Education Outcome 3.1) ${ }^{1}$
State Minimum Core-Social Science (Satisfies
General Education Outcome 3.3) ${ }^{1}$
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
ITAL 1013 Elementary Italian II
CLST 1013 Introduction to Classical Studies:

## Rome

or CLST 2323 Greek and Roman Mythology or MRST 2013 Introduction to Medieval and Renaissance Studies
or ITAL 3333 Made In Italy
State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$
State Minimum Core-U.S. History or Government 3
(Satisfies General Education Outcome 4.2) ${ }^{1}$
Year Total:

| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ITAL 2003 Intermediate Italian I (Satisfies General Education Outcomes 3.2 and 4.1) ${ }^{1}$ | 3 |  |
| ITAL 3103 Italian Cinema | 3 |  |
| State Minimum Core-Social Science (Satisfies General Education Outcome 5.1) ${ }^{1}$ | 3 |  |
| State Minimum Core-Science with corequisite lab | 4 |  |
| General Electives | 2 |  |
| ITAL 2013 Intermediate Italian II |  | 3 |
| State Minimum Core-Social Science |  | 3 |
| General Electives |  | 9 |
| Year Total: | 15 | 15 |

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

Any credit hours numbered at the 3000-level or higher, or any 2000-level credit hours that have a course prerequisite


MATH 1313 Quantitative Reasoning (ACTS
Equivalency $=$ MATH 1113) (Satisfies General
Education Outcome 2.1) ${ }^{1}$
or MATH 1203 College Algebra (ACTS
Equivalency $=$ MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$
or any MATH or STAT course numbered higher than MATH 1203 (Satisfies General Education Outcome 2.1) ${ }^{1}$
SPAN 1003 Elementary Spanish I (ACTS
Equivalency = SPAN 1013) (or a higher-level
SPAN course, depending on placement in sequence)

Or Additional Studies Requirement
State Minimum Core—U.S. History or Government
(Satisfies General Education Outcome 4.2) ${ }^{1}$
State Minimum Core—Social Science (Satisfies
General Education Outcome 3.3) ${ }^{1}$
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1) ${ }^{1}$
SPAN 1013 Elementary Spanish II (ACTS Equivalency SPAN 1023) (or a higher-level SPAN course, depending on placement in sequence)

Or Additional Studies Requirement
Additional Studies Requirement
State Minimum Core-Science with corequisite lab (Satisfies General Education Outcome 3.4) ${ }^{1}$
State Minimum Core—Social Science
Year Total:
Second Year
Fall

Units

## Spring

3
Equivalency = SPAN 2013) (or a higher-level
SPAN course, depending on placement in sequence. SPAN 2003 satisfies General Education Outcomes 3.2 and 4.1.)
Additional Studies Requirement
6
State Minimum Core—Science with corequisite lab
4
An additional world language course or WLLC
3
3173, WLLC 4023, WLLC 4033, or an area studies course approved by advisor
SPAN 2013 Intermediate Spanish II (ACTS Equivalency = SPAN 2023) (or a higher-level SPAN course, depending on placement in sequence) ${ }^{1}$
Additional Studies Requirement
State Minimum Core-Social Science
State Minimum Core—Fine Arts (Satisfies General Education Outcome 3.1) ${ }^{1}$
An additional world language course or WLLC 3173, WLLC 4023, WLLC 4033, or an area studies course approved by advisor
Year Total:

Total Units in Sequence:
120
${ }^{1}$ Students must complete the State Minimum Core (https:// nam11.safelinks.protection.outlook.com/?url=http\%3A\%2F \%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=04\%7C01\%7Crcc003\%40uark.edu \%7C92f936f375f845bf930708d8e3ec5fa1\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWv \%7C1000\&sdata=ZHBCul1Vytd \%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\%3D\&reserved=0) and the requirements of their major(s) as outlined in the Catalog of Studies. These courses also fulfill many, if not all, of the General Education Requirements (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| SPAN 3003 Advanced Spanish | 3 |  |
| SPAN 3103 Cultural Readings or SPAN 3123 Spanish for Heritage Speakers II | 3 |  |
| Additional Studies Requirement | 9 |  |
| SPAN 4003 Advanced Grammar or SPAN 4123 Spanish for Heritage Speakers III |  | 3 |
| SPAN 3033 Conversation and Composition |  | 3 |
| SPAN 3113 Introduction to Literature |  | 3 |
| Additional Studies Requirement |  | 6 |
| Year Total: | 15 | 15 |
| Fourth Year | Units |  |
|  | Fall | Spring |
| SPAN electives numbered at the 3000-level or higher. (SPAN 3883 satisfies General Education Outcome 1.2.) ${ }^{1}$ | 3 |  |
| SPAN electives numbered at the 3000 -level or higher | 3 |  |
| Additional Studies Requirement | 9 |  |
| SPAN electives numbered at the 3000-level or higher. (SPAN 4133 satisfies General Education Outcomes 5.1 and 6.1.) ${ }^{1}$ | 3 |  |
| SPAN electives numbered at the 3000-level or higher |  | 3 |
| Additional Studies Requirement |  | 7 |
| Year Total: | 15 | 13 |
| Total Units in Sequence: |  | 120 |
| Students must complete the State Minimum Co nam11.safelinks.protection.outlook.com/?url=h \%2Fcatalog.uark.edu\%2Fundergraduatecatalo \%2Fstateminimum\%2F\&data=04\%7C01\%7Cr \%7C92f936f375f845bf930708d8e3ec5fa1\%7C \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDA \%7C1000\&sdata=ZHBCul1Vytd \%2FCnZSMgcmPS5ZljYEvtv2HPmN6hSxflk\% the requirements of their major(s) as outlined in These courses also fulfill many, if not all, of the Requirements (https://nam11.safelinks.protecti \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergradu \%2Fgeneraleducation\%2F\&data=04\%7C01\%7 \%7C92f936f375f845bf930708d8e3ec5fa1\%7C \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDA \%7C1000\&sdata=r35av68n3oEQW9FsllqBgm $\% 3 D \& r e s e r v e d=0)$. Please visit these pages in consult with your academic advisor when maki fulfill these requirements. |  | 5be89a3 <br> iLCJBTil <br> and <br> tudies. <br> on <br> url=http <br> ened <br> .edu <br> 5be89a3 <br> iLCJBTil6 <br> P4AD4B <br> d and <br> ons to |
| 2 Heritage speakers may also take SPAN 2123 SPAN 2013. | ivale |  |

## Requirements for an Additional Major in Spanish for Non-Arts and Sciences Students:

Students with majors in colleges and schools other than the Fulbright College of Arts and Sciences (Business, Education, Engineering, Agriculture, Architecture) can complete an additional major in Spanish by completing 27 hours of coursework in Spanish at the 3000-level and above. This is the same amount of coursework in Spanish in the undergraduate major in Spanish in Fulbright College.

The normal course sequence of SPAN courses fulfilling the major requirements for non-native speakers is as follows:

| SPAN 3003 | Advanced Spanish | 3 |
| :--- | :--- | :--- |
| SPAN 3103 | Cultural Readings | 3 |
| SPAN 3033 | Conversation and Composition | 3 |
| SPAN 3113 | Introduction to Literature | 3 |
| SPAN 4003 | Advanced Grammar | 3 |
| SPAN 4000-level electives in literature, culture, or special topic | 9 |  |
| SPAN 4623 | Advanced Proficiency in Spanish (or SPAN 4000- | 3 |
|  | level elective in literature, culture, or special topic) |  |

Total Hours
Substitutions for courses in this list can be approved by Spanish major advisors (for example, for study abroad transfers, and for students who are heritage and native speakers of Spanish).

The minor in Arabic has been added pending approval of the Arkansas Higher Education Coordinating Board.

Requirements for the Arabic Minor: 15 hours in courses numbered 3000 or above. Specific courses required are:

| ARAB 3016 Immersive Arabic III | 6 |
| :--- | :--- |
| or ARAB 3016 Honors Immersive Arabic III |  |
| ARAB 4016 Immersive Arabic IV |  |
| or ARAB 4016-Honors Immersive Arabic IV | 6 |
| Choose one from the following: |  |


| ARAB 4023 | Advanced Arabic I |
| :--- | :--- |
| ARAB 3033 | Colloquial Arabic |
| ARAB 470V | Special Topics (must be approved by the Arabic <br> adviser) |

## Total Hours

## French:

15 hours in courses numbered 3000 or above. Specific courses required are:

| FREN 3003 | Advanced French | 3 |
| :--- | :--- | :--- |
| FREN 3113 | Introduction to Literature | 3 |
| FREN 4003 | French Grammar and Composition | 3 |
| FREN 4033 | French for Oral Proficiency | 3 |

In some cases, specific course requirements may be adjusted to the individual needs of the candidate with the permission of the French adviser.

A minor in German requires 15 hours of GERM courses at the 3000 -level or higher with a minimum grade of " C " in each course.

| GERM 3003 | Advanced German I | 3 |
| :--- | :--- | :--- |
| GERM 4003 | Advanced German II | 3 |


| GERM 4213 | German Civilization | 3 |
| :---: | :---: | :---: |
| Three credit hours in any GERM literature course |  | 3 |
| Three credit hours in any GERM course |  | 3 |
| Total Hours |  | 15 |
| Italian: |  |  |
| 15 hours to include the following: |  |  |
| ITAL 3033 | Italian Conversation | 3 |
| ITAL 3113 | Introduction to Literature | 3 |
| ITAL 3123 | Advanced Italian | 3 |
| ITAL 4033 | Advanced Italian Conversation | 3 |
| Choose one of the following: |  | 3 |
| ITAL 3103 | Italian Cinema |  |
| ITAL 3333 | Made In Italy |  |
| ITAL 3983 | Special Studies |  |
| ITAL 4023 | Contemporary Images of and from Rome |  |
| ITAL 4123 | Dante: A Journey Between Visions and Words |  |
| ITAL 4113 | Italian Fairy Tales in Literature, Visual Arts, and Cinema |  |
| ITAL 4333 | Italian for International Business |  |

## Total Hours

## Minor in Russian Studies

The Russian Studies minor requires 15 credit hours from below.
3 credit hours in advanced Russian language study. 3
RUSS 3003 Advanced Russian I (must earn a 'C' or higher) 3 credit hours in Russian literature (taught in English). Choose one 3 course from:

RUSS/WLIT Special Themes in Russian
4113
RUSS/WLIT Survey of Russian Literature Since the 1917 4133 Revolution
9 credit hours from the electives listed below. Students may choose other courses not listed here that are at least one-third Russian- or Eurasian-centered with approval of the program director.

INST 3303 European Integration and Globalization
GEOS 4813 Geography of Eurasia
GERM 4013 Germany and the Holocaust: The Significance of the Holocaust in Differentiated Contexts
JWST 3103 Introduction to Jewish Languages
JWST 4003/ Modern Jewish Thought
PHIL 4103
JWST 4013 Contemporary Jewish Thought
HIST 3533 World War II
HIST 3543 Russia to 1861
HIST 3553 Russia Since 1861
HIST 4203 History of the Holocaust
HIST 4773 Diplomatic History of the US, 1945 to Present
PLSC 4513 Creating Democracies
PLSC 4563 Government and Politics of Russia
RUSS/WLIT Special Themes in Russian (if not taken above)
4113

| RUSS/WLIT | Survey of Russian Literature Since the 1917 |
| :--- | :--- |
| 4133 | Revolution (if not taken above) |

Total Hours

Russian Studies minors are strongly encouraged to spend one semester abroad in any Russian-speaking country. Those who are unable to study abroad are strongly encouraged to attend a summer language program.

## Minor in Spanish

15 credit hours in Spanish (SPAN) courses numbered at the 3000level or higher, to include:

| SPAN 3003 | Advanced Spanish | 3 |
| :--- | :--- | ---: |
| SPAN 3103 | Cultural Readings | 3 |
| SPAN 3033 | Conversation and Composition | 3 |
| or one of the electives listed below (must meet prerequisites for <br> electives) |  |  |
| SPAN 3113 | Introduction to Literature | 3 |
| SPAN 4003 | Advanced Grammar | $\mathbf{3}$ |
| Total Hours |  | $\mathbf{1 5}$ |

${ }^{1}$ Appropriate electives: SPAN 3883, SPAN 4073, SPAN 4103, SPAN 4113, SPAN 4133, SPAN 4193, SPAN 4213, SPAN 4223, SPAN 4243, SPAN 4253, SPAN 470V, SPAN 4623, and SPAN 4873.

## Minor in Spanish for Native and Heritage Language Learners

15 credit hours in Spanish (SPAN) courses numbered at the 3000level or higher, to include:

## SPAN 3123 Spanish for Heritage Speakers II

 or one of the electives listed below (must meet prerequisites for electives) ${ }^{1}$SPAN 4123 Spanish for Heritage Speakers III 3
SPAN 3113 Introduction to Literature 3
Six credit hours via Credit by Examination through the Department of World Languages, Literatures and Cultures, or two electives from the list below. Students must meet prerequisites for electives. ${ }^{1}$

## Total Hours

1 Appropriate electives: SPAN 3883, SPAN 4073, SPAN 4103, SPAN 4113, SPAN 4133, SPAN 4193, SPAN 4213, SPAN 4223, SPAN 4243, SPAN 4253, SPAN 470V, and SPAN 4873.

## Minor in Spanish for the Professions for Second Language Learners

15 credit hours in Spanish courses numbered at the 3000-level or higher, to include:

| SPAN 3003 | Advanced Spanish | 3 |
| :--- | :--- | :--- |
| SPAN 3103 | Cultural Readings | 3 |
| SPAN 3033 | Conversation and Composition | 3 |
| SPAN 4003 | Advanced Grammar | 3 |
| Select one course from the following: | 3 |  |
| SPAN 3883 | Translation and Interpretation I: Spa/Eng - Eng/Spa |  |
| SPAN 4333 | Business Spanish I |  |


| SPAN 4563 | Latino Youth Biliteracy Service Learning Project |
| :--- | :--- |
| SPAN 4583 | Advanced Spanish for Health Professions |

Total Hours

## Minor in Spanish for the Professions for Native and Heritage Language Learners

15 credit hours in Spanish (SPAN) courses numbered at the 3000level or higher, to include:

| SPAN 3123 | Spanish for Heritage Speakers II | 3 |
| :---: | :---: | :---: |
| or one of the electives listed below (must meet prerequisites for electives) ${ }^{1}$ |  |  |
| SPAN 4123 | Spanish for Heritage Speakers III | 3 |
| Choose one of the following courses: |  | 3 |
| SPAN 3883 | Translation and Interpretation I: Spa/Eng - Eng/Spa |  |
| SPAN 4333 | Business Spanish I |  |
| SPAN 4563 | , Youth Bilteracy Service Learning Pro |  |
| SPAN 4583 | Advanced Spanish for Health Professions |  |
| Six credit hours via Credit by Examination through the Department of World Languages, Literatures and Cultures, or two electives from the list below. Students must meet prerequisites for electives. ${ }^{1}$ |  |  |
| Total Hours |  | 15 |
| ${ }^{1}$ Appropriate electives: SPAN 3113, SPAN 3883, SPAN 4073, SPAN 4103, SPAN 4113, SPAN 4133, SPAN 4193, SPAN 4213, SPAN 4223, SPAN 4243, SPAN 4253, SPAN 4333, SPAN 4563, SPAN 4583, SPAN 470V, and SPAN 4873. |  |  |

## Requirements for a Minor in World Languages with a Business Orientation

Chinese: Students pursuing a minor in Chinese with a Business Orientation must complete 15 credit hours in Chinese (CHIN) courses numbered 3000-level or higher.

## Required Courses

| CHIN 3003 | Advanced Chinese | 3 |
| :--- | :--- | ---: |
| CHIN 3033 | Conversation | 3 |
| CHIN 4333 | Business Chinese Language in Speaking and <br>  <br> Writing | 3 |
| Choose two of the following elective courses: | 6 |  |
| CHIN 3983 | Special Studies |  |
| CHIN 3103 | Chinese Culture through Film (taught in English) |  |
| CHIN 4313 | Culture and Society in China (taught in English) |  |
| Total Hours |  | $\mathbf{1 5}$ |

In some cases, elective courses may be adjusted to the individual needs of the student with the permission of the Chinese faculty adviser.

French: Courses required are:

| FREN 3003 | Advanced French | 3 |
| :--- | :--- | :--- |
| FREN 3103 | Cultural Readings | 3 |
| FREN 4003 | French Grammar and Composition | 3 |
| FREN 4033 | French for Oral Proficiency | 3 |
| FREN 4333 | Introduction to Business French | 3 |

Japanese: Students in the Minor program in Japanese with a Business Orientation must complete 15 credit hours of upper-level Japanese courses. Required courses are:

## Advanced Japanese

JAPN 3116 Intensive Advanced Japanese (or equivalent) 6

| Core Requirements |  |  |
| :--- | :--- | :--- |
| JAPN 3033 | Advanced Japanese Conversation | 3 |
| JAPN 4333 | Professional Japanese I: Business Writing | 3 |

## Electives

Select one of the following:

| JAPN 3983 | Special Studies |
| :--- | :--- |
| JAPN 4033 | Oral Communication \& Composition in Japanese |
| JAPN 4313 | Language and Society of Japan |
| JAPN 4343 | Professional Japanese II: Translation |

In some cases, elective courses may be adjusted to the individual needs of the candidate with the permission of the Japanese adviser.

Requirements for Honors in World Languages: The Honors Program in World Languages gives students of high ability the opportunity to conduct independent research culminating in an honors thesis. In addition to satisfying general graduation requirements and all requirements for honors separately established by the Honors Council, candidates for honors in World Languages must:

1. Complete 12 hours of honors credit. One to six of these may be honors thesis hours; the remaining hours should be taken in disciplines chosen in consultation with the adviser;
2. Complete an honors thesis in the major field, and pass an oral examination on the thesis conducted by an honors committee, as evidence of substantial individual research skills;
3. Demonstrate superior competence in language, culture, and literature by achieving a GPA. of 3.5 in all upper-division courses submitted for the major.

Successful completion of these requirements will be recognized by the award of the distinction "Language Scholar Cum Laude." Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

## World Language (B.A.) Teacher Licensure Requirements:

Please refer to the Secondary Education Requirements (p. 276) for Fulbright College Students.

## Faculty

A
Almenara, Erika, Ph.D. (University of Michigan), M.A. (University of Wisconsin-Milwaukee), B.A. ( Feminine University of the Sacred Heart), Associate Professor, 2015, 2022.
Alzouwain, Hawraa, Ph.D., M.ED. (University of Arkansas), B.A. (Wasit University, Iraq), Instructor, 2021.
Arellano, Betina, M.A. (University of Arkansas), B.A. (Universidad Nacional del Sur, Argentina), Instructor, 2016.
Arenberg, Nancy M., Ph.D. (University of Arizona), M.A. (University of Illinois, Champaign-Urbana), B.A. (Grinnell College), Associate Professor, 1996, 2002.

## B

Bell, Steven M., Ph.D. (University of Kansas), M.A. (University of Kentucky), B.A. (University of Kansas), Associate Professor, 1992. Benton, Hilda Morayma, M.A. (University of Arkansas), B.A. (Chihuahua Institute of Technology), Instructor, 2009.
Berkovich, Nadja, Ph.D. (University of Illinois), M.A. (Boston College), B.A. (St. Petersburg Pedagogical Herzen University), Teaching Associate Professor, 2015, 2023.
Buchanan, Greg, M.A. (University of Arkansas), Instructor, 2008. C
Calabretta-Sajder, Ryan C., Ph.D. (Middlebury College), M.A. (Indiana University-Bloomington), B.A. (Dominican University), Associate Professor, 2013, 2022.
Castro Salas, Raquel, M.A. (University of Arkansas), B.A. (John Brown University), Teaching Assistant Professor, 2014, 2020.
Christiansen, Hope L., Ph.D. (University of Kansas), M.A., B.A. (Kansas State University), Associate Professor, 1990.
Clowney, Nicole, J.D. (Yale University), M.A. (University of Kentucky), B.A. (University of Chicago), Lecturer, 2014.

Comfort, Kathy, Ph.D. (University of Kansas), M.A., B.A. (Illinois State University), Professor, 2001, 2020.
Comsa, Maria, Ph.D. (Stanford University), M.A., B.A. (San José State University), B.A. (Université de Lyon 2 Lumière), Instructor, 2022.
Condray, Kathleen, Ph.D., M.A.. (University of Illinois-UrbanaChampaign), B.A. (University of Arkansas), Associate Professor, 1999, 2008.

## D

D'Eugenio, Daniela, Ph.D. (City University of New York), M.A. (University of Padua), M.A. (University of Florence), B.A. (University of Chieti), Assistant Professor, 2020.
Devich, Claudia Maria, M.A., B.A. (University of Arkansas), Instructor, 2011, 2016.
Doucet, Annie, Ph.D., M.A. (Tulane University), B.A. (Southeastern Louisiana University), Assistant Professor, 2020.
F
Fredrick, David Charles, Ph.D. (University of Southern California), M.A., B.A. (University of Kansas), Associate Professor, 1991, 1997.

Fukushima, Tatsuya, Ph.D., M.A. (Oklahoma State University), B.A.
(Kanto Gakuin University, Japan), Associate Professor, 2000, 2007.

## H

Haydar, Adnan Fuad, Ph.D. (University of California-San Diego), M.A., B.A. (American University of Beirut), Professor, 1993.

Haydar, Paula Marie, Ph.D., M.F.A. (University of Arkansas), M.Ed., B.S. (University of Massachusetts), Associate Professor, 2006, 2023.
Hernandez-Miranda, Michael, Ph.D., M.A. (Texas A\&M University), B.A. (University of Oriente), Instructor, 2015.
Hoyer, Jennifer M., Ph.D., M.A. (University of Minnesota-Twin Cities), B.A. (University of Tulsa), Associate Professor, 2007, 2013.

J
Jones, Linda Carol, Ph.D. (University of New Mexico), M.A. (University of Arkansas), M.A. (University of Arizona), B.A. (Northeast Louisiana University), Professor, 1988, 2022.
L
Levine, Daniel, Ph.D. (University of Cincinnati), B.A. (University of Minnesota), University Professor, 1980, 2016.
Lorenzo, Violeta, Ph.D. (University of Toronto), M.A., B.A. (University of Florida), Associate Professor, 2014, 2020.

## M

Magnetti, Brenda Monica, M.A. (University of Arkansas), B.A. (Ouachita Baptist University), Teaching Assistant Professor, 2007, 2020.
Mahmoud, Rania, Ph.D. (University of Washington), M.A. (Old Dominion University), B.A., (University of Alexandria, Egypt), Assistant Professor, 2017.

Miuri, Motoko, M.A. (Akita International University), Instructor, 2022.
Montejo Pizarro, Martha, Ph.D. (Texas A\&M University), B.A.
(Universidad de La Habana, Cuba), Instructor, 2015.
Morello, Valentina Angela, M.A. (Boston University), Instructor, 2022.
0
Offerman, Heather, Ph.D., M.A. (Purdue University), B.A. (University of Southern Indiana), Assistant Professor, 2022.
Olmedo Gobante, Manuel, Ph.D. (University of Chicago), M.A.
(University of Chicago), B.A. (Universidad de Sevilla), Assistant Professor, 2021.

Omura, Mafumi, M.A. (University of lowa), B.A. (Kansai Gaidai University), Instructor, 2016.

## P

Parrilla Recuero, Antonio, Ph.D. (Indiana University), M.A. (University of Memphis), Instructor, 2020.
Pérez Arroyo, Elkin Javier, M.A. (University of Arkansas), B.A.
(Universidad de Córdoba, Montería, Colombia), Instructor, 2017.

## R

Reeber, Joy Elisabeth, Ph.D., M.A. (University of Wisconsin-Madison), B.A. (University of North Carolina), Teaching Assistant Professor, 2012, 2022.

Restrepo, Luis Fernando, Ph.D., M.A. (University of Maryland-College Park), B.A. (Universidad Pontificia Bolivariana), University Professor, 1995, 2016.
Riva, Fernando, Ph.D. (Yale University), Visiting Assistant Professor, 2017.

## S

Sterling, Brett E., Ph.D., M.A. (Vanderbilt University), B.A. (University of Arkansas), Asociate Professor, 2013, 2022.
Su, Danjie, Ph.D. (University of California, Los Angeles), M.A., B.A. (Sun Yatsen University, China), Associate Professor, 2017, 2023.

## T

Tain Gutierrez, Laura, M.A. (Universidad Internacional de la Rioja), B.S. (Universidad de Sevilla), Instructor, 2020.
Ten Haaf, Rachel E., Ph.D. (University of Michigan), M.A. (University of Illinois, Urbana-Champaign), Assistant Professor, 2016, 2017.

## V

Vennarucci, Rhodora, Ph.D., M.A. (State University of New York at Buffalo), B.A. (University of Michigan), Assistant Professor, 2013, 2017. X
Xu, Jenny, M.A. (University of Texas at Austin), Clinical Associate Professor, 1992, 2009.
Y
Yang, Li, M.A. (Brandeis University and Beijing Language and Culture University), B.A. (Beijing Language and Culture University), Instructor, 2014.

## Arabic Courses

ARAB 1003. Elementary Arabic I. 3 Hours.
Stresses correct pronunciation, aural comprehension, simple speaking ability. Basic grammar is taught inductively through oral and written skills. (Typically offered:
Spring)

ARAB 1013. Elementary Arabic II. 3 Hours.
Continues to stress correct pronunciation, aural comprehension, simple speaking ability. Continued presentation of grammar with special attention to basic morphology. Prerequisite: ARAB 1003 or equivalent. (Typically offered: Fall)

## ARAB 1016. Immersive Arabic I. 6 Hours.

Equivalent to ARAB 1003 and ARAB 1013. Stresses rapid learning through daily interaction and immersion in a fun and friendly atmosphere. Supportive pedagogical practice focuses on developing communicative proficiency. Fundamentals of grammar are taught inductively through engaging assignments and activities designed to incrementally develop oral and written skills. (Typically offered: Fall)
ARAB 110V. Special Topics in Arab Culture. 1-3 Hour.
Formulates an informed picture of the Arab World. Through exploration of various aspects of the region and interaction with Arabs in the community, students are introduced to the richness and diversity of Arab cultures. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## ARAB 2003. Intermediate Arabic I. 3 Hours.

Leads to greater oral comprehension and speaking ability and develops the more advanced reading and writing skills. Prerequisite: ARAB 1013 or ARAB 1016 or equivalent. (Typically offered: Spring)

## ARAB 2013. Intermediate Arabic II. 3 Hours.

Continued development of speaking, comprehension, reading, and writing.
Emphasizes morphology and syntax. (Typically offered: Irregular)
ARAB 2016. Immersive Arabic II. 6 Hours.
Continued emphasis on immersive learning through daily interaction. Leads to greater oral comprehension and speaking ability and develops the more advanced reading and writing skills. Emphasizes morphology and syntax. Focuses on expanding cultural awareness. Prerequisite: ARAB 1013 or ARAB 1016. (Typically offered: Spring)

ARAB 2016H. Honors Immersive Arabic II. 6 Hours.
Continued emphasis on immersive learning through daily interaction. Leads to greater oral comprehension and speaking ability and develops the more advanced reading and writing skills. Emphasizes morphology and syntax. Focuses on expanding cultural awareness. Prerequisite: Honors standing and (ARAB 1013 or ARAB 1016). (Typically offered: Spring)
This course is equivalent to ARAB 2016.
ARAB 3016. Immersive Arabic III. 6 Hours.
Leads to greater facility in the spoken language and continues to develop reading and writing skills. Continued broadening of cultural awareness and emphasis on morphology and syntax. Prerequisite: ARAB 2016. (Typically offered: Fall)

## ARAB 3016H. Honors Immersive Arabic III. 6 Hours.

Leads to greater facility in the spoken language and continues to develop reading and writing skills. Continued broadening of cultural awareness and emphasis on morphology and syntax. Prerequisite: Honors standing and (ARAB 2016 or ARAB 2016H). (Typically offered: Fall)
This course is equivalent to ARAB 3016.
ARAB 3033. Colloquial Arabic. 3 Hours.
Development of aural comprehension and speaking skills in one of the major Arabic dialects. Prerequisite: (ARAB 1003 and ARAB 1013) or ARAB 1016 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
ARAB 4016. Immersive Arabic IV. 6 Hours.
Continued development of speaking, comprehension, reading, writing. Reading assignments introduce a variety of styles ranging from classical to modern in both prose and verse. Prerequisite: ARAB 3016. (Typically offered: Spring)

## ARAB 4016H. Honors Immersive Arabic IV. 6 Hours.

Continued development of speaking, comprehension, reading, writing. Reading assignments introduce a variety of styles ranging from classical to modern in both prose and verse. Prerequisite: Honors standing and (ARAB 3016 or ARAB 3016H). (Typically offered: Spring)
This course is equivalent to ARAB 4016.

## ARAB 4023. Advanced Arabic I. 3 Hours.

Development of advanced speaking and writing skills. Extensive reading and writing assignments and translating exercises from English into Arabic. Prerequisite: ARAB 4016. (Typically offered: Irregular)

ARAB 4033. Advanced Arabic II. 3 Hours.
Continued advanced speaking, reading, and writing skills. Prerequisite: ARAB 4023. (Typically offered: Irregular)

## ARAB 4053. Arabic Readings. 3 Hours.

Develops skills in description, analysis, and argumentation within a workshop atmosphere. Readings are drawn from various styles of standard Arabic, ranging from newspapers to literary texts. The thematic focus of the course varies. Prerequisite: ARAB 4016 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## ARAB 4113. Modern Arabic Literature. 3 Hours.

Selected readings from Arabic fiction and poetry from the 20th century to the present. Prerequisite: ARAB 4023 or equivalent. (Typically offered: Irregular)

ARAB 4213. Arab Culture and Civilization.. 3 Hours.
Selected readings from Arab history, literature, the Islamic Tradition, and the Holy Qur'an. Prerequisite: ARAB 4016 or equivalent. (Typically offered: Irregular)

ARAB 470V. Special Topics. 1-6 Hour.
May be offered in a topic not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for degree credit.

## Cherokee Courses

CHRK 1003. Elementary Cherokee I. 3 Hours.
Introduction to the Cherokee language. Focuses on the sound and syllabary system of Cherokee, including grammar, vocabulary, culture, and heritage. (Typically offered: Fall)

## CHRK 1013. Elementary Cherokee II. 3 Hours.

Focuses on the sound and syllabary system of Cherokee, including grammar, vocabulary, culture, and heritage. Includes in-depth activities and experiences with the Cherokee language. Prerequisite: CHRK 1003 or instructor's consent. (Typically offered: Spring)

## Chinese Courses

CHIN 1003. Elementary Chinese I. 3 Hours.
Elementary Chinese. (Typically offered: Fall)
CHIN 1013. Elementary Chinese II. 3 Hours.
Elementary courses stress correct pronunciation, Aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Spring)

CHIN 2003. Intermediate Chinese I. 3 Hours.
Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall)

CHIN 2013. Intermediate Chinese II. 3 Hours.
Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Spring)

CHIN 3003. Advanced Chinese. 3 Hours.
Continues to develop speaking, listening, reading and writing skills and presents more complex forms and structures of the language as well as additional characters. Prerequisite: CHIN 2013 (Typically offered: Fall)

CHIN 3033. Conversation. 3 Hours.
Guided conversation practice for the post-intermediate student. Prerequisite: CHIN 2013 or equivalent. (Typically offered: Spring)

CHIN 3103. Chinese Culture through Film. 3 Hours
This course explores Chinese culture through the lens of Chinese films. The course is designed to give students insights into Chinese culture by experiencing it through carefully selected Chinese films and thoughtful discussions. Through the film screenings, lectures, readings, discussions, and cultural reflections, students will learn about important dimensions of Chinese culture, especially regarding Chinese history, contemporary society, communication, education, romance, family, spiritual concepts, aesthetics, lifestyle, customs, and values. The course is taught in English; no knowledge of the Chinese language is required. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AIST 3103.
CHIN 3983. Special Studies. 3 Hours.
May be offered in subject not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

CHIN 4313. Culture and Society in China. 3 Hours.
Social, communicative, technological, and business contexts of contemporary Chinese culture and society, as well as implications for global citizens. Taught in English. No knowledge of the Chinese language required. (Typically offered: Spring) This course is cross-listed with AIST 4323.

CHIN 4333. Business Chinese Language in Speaking and Writing. 3 Hours. Introduction of Chinese vocabulary, formats, and expressions in business environments, such as company structures, management, banking and accounting, as well as how to read and write contracts, letters, and other business documents. Prerequisite: CHIN 3003 or equivalent Chinese proficiency. (Typically offered: Fall)

## French Courses

FREN 1003. Elementary French I (ACTS Equivalency = FREN 1013). 3 Hours. Elementary French I. (Typically offered: Fall and Spring)

FREN 1013. Elementary French II (ACTS Equivalency = FREN 1023). 3 Hours. Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Fall and Spring)

FREN 2003. Intermediate French I (ACTS Equivalency = FREN 2013). 3 Hours. Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall and Spring)

FREN 2013. Intermediate French II (ACTS Equivalency = FREN 2023). 3 Hours. Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Fall and Spring)

FREN 3003. Advanced French. 3 Hours.
Further intensive practice for the purpose of strengthening written and oral expression. Includes a review of the essentials of French grammar. Prerequisite: FREN 2013 or equivalent. (Typically offered: Fall, Spring and Summer)

FREN 3103. Cultural Readings. 3 Hours.
A course designed to build vocabulary and to strengthen reading skills and oral expression through extensive practice with culturally authentic materials. Prerequisite: FREN 2013. (Typically offered: Spring)

FREN 3113. Introduction to Literature. 3 Hours.
Further development of reading skills and introduction to literacy commentary and analysis. Prerequisite: FREN 3003 or FREN 3103. (Typically offered: Spring)

FREN 3123. French Phonetics. 3 Hours.
Improves students' pronunciation of French while they acquire the basic rules of standardized spoken French. The course takes into account the major contrastive features of the sounds of French and English and addresses the particular challenges the native speaker of American English faces when learning to pronounce French. Prerequisite: FREN 3003. (Typically offered: Fall Even Years)

FREN 399VH. Honors French Course. 1-6 Hour.
Honors French. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

FREN 4003. French Grammar and Composition. 3 Hours.
French grammar and composition. Prerequisite: FREN 3003 or FREN 3103. (Typically offered: Fall)

## FREN 4033. French for Oral Proficiency. 3 Hours.

Three hours per week of conversation practice for the advanced undergraduate. Prerequisite: FREN 3003 or FREN 3103. (Typically offered: Fall and Spring)
FREN 4113. Special Themes in French. 3 Hours.
Topics not normally covered in period courses. Sample topics: "The Comic Tradition in French Literature," "French Cinema." Topics announced one semester in advance. Prerequisite: FREN 3113. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

FREN 4213. French Civilization. 3 Hours.
French civilization. Prerequisite: FREN 3113. (Typically offered: Spring)
FREN 4223. Survey of French Literature I. 3 Hours.
A survey of French literature, its forms and themes from the medieval period through the 18th century. Prerequisite: FREN 3113. (Typically offered: Irregular)
FREN 4233. Survey of French Literature II. 3 Hours.
A survey of French literature, its forms and themes from the 19th and 20th centuries. Prerequisite: FREN 3113. (Typically offered: Irregular)

FREN 4243. Studies in Francophone Literature. 3 Hours.
Introduction to seminal writers from Francophone cultures, mainly Quebec, the Maghreb, and West Africa. Exploration of national identity, morality, religion, exile, and socio-political and cultural problems, while discovering recent trends in the globalization of Francophone literature. Prerequisite: FREN 3113. (Typically offered: Irregular)

## FREN 4333. Introduction to Business French. 3 Hours.

Introduction and orientation to the French world of business and commerce through the study of vocabulary, forms, and formulas and expression used in commercial correspondence. Prerequisite: FREN 3113 or FREN 3103. (Typically offered: Irregular)

FREN 4433. Business Culture and Practices. 3 Hours.
A practical application of French to the business world focusing on the cultural challenges faced by Americans doing business in France and francophone countries. Case studies and translations of authentic documents from French to English and English to French reinforce the specialized vocabulary of the business world. Prerequisite: FREN 3103 or FREN 3113. (Typically offered: Irregular)

FREN 4663. French Short Story. 3 Hours.
Introduces the genre of the French Short Story, focusing on close readings and providing an overview of the most important literary movements from the Middle Ages to the twentieth century. Prerequisite: FREN 3113. (Typically offered: Irregular)
FREN 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Fall and Spring) May be repeated for degree credit.

## German Courses

GERM 1003. Elementary German I (ACTS Equivalency = GERM 1013). 3 Hours.
Elementary German I. (Typically offered: Fall, Spring and Summer)

GERM 1013. Elementary German II (ACTS Equivalency = GERM 1023). 3 Hours. Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Fall, Spring and Summer)
GERM 2003. Intermediate German I (ACTS Equivalency = GERM 2013). 3 Hours.
Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall, Spring and Summer)

GERM 2013. Intermediate German II (ACTS Equivalency = GERM 2023). 3 Hours.
Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Fall, Spring and Summer)
GERM 3003. Advanced German I. 3 Hours.
Development of reading, writing, listening, and speaking skills. Some grammar review and translation exercises. Emphasis on vocabulary acquisition and the correct use of idiomatic expressions. Prerequisite: GERM 2013. (Typically offered: Fall)
GERM 3013. Introduction to Literature. 3 Hours.
Development of reading skills and introduction to literary analysis. Prerequisite: GERM 2013 or equivalent. (Typically offered: Fall)

## GERM 3033. Conversation. 3 Hours.

Three hours per week of guided conversation practice for the post-intermediate student. Prerequisite: GERM 2013 or instructor consent. (Typically offered: Spring)

GERM 399VH. Honors German Course. 1-6 Hour.
Honors thesis research and writing under the direction of a faculty member in the department. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

## GERM 4003. Advanced German II. 3 Hours.

Further development of reading, writing, listening, and speaking skills. Some grammar review and translation exercises. Emphasis on vocabulary acquisition and the correct use of idiomatic expressions. Prerequisite: GERM 3003. (Typically offered: Spring)
GERM 4013. Germany and the Holocaust: The Significance of the Holocaust in Differentiated Contexts. 3 Hours.
Taught in English. Topics covering the role of the Holocaust in German history, culture, art, language and German Studies. Equal emphasis will be placed on historical competence and philosophical/theoretical inquiry, addressed from a variety of media and primary and secondary sources. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## GERM 4023. German Migration and National Identity. 3 Hours.

Examines the experiences of Germans who have migrated abroad, migrants in Germany, and those who have felt like migrants in their own country due to isolating historical experiences and are confronted with what it means to be a German. Incorporates traditional literary narrative, autobiography, film, and music. Prerequisite: GERM 3003 or GERM 3013, or instructor consent. (Typically offered: Irregular)

## GERM 4033. Advanced Conversation. 3 Hours.

Three hours per week of conversation practice for the advanced undergraduate. Prerequisite: GERM 3033 or instructor consent. (Typically offered: Irregular)

GERM 4043. German Cinema. 3 Hours.
Presents a range of German films in cultural-historical context; vocabulary and structures for discussing film, film history, and film theory in German. Prerequisite: GERM 3003. (Typically offered: Irregular)
GERM 4123. The German Novella. 3 Hours.
An intensive study of the novella as a genre from its origin to the present.
Prerequisite: GERM 3013. (Typically offered: Irregular)

## GERM 4133. The German Drama. 3 Hours.

A study of the development of the forms and themes of the German drama from the middle ages to the present. Prerequisite: GERM 3013. (Typically offered: Irregular)

GERM 4143. German Lyric Poetry. 3 Hours.
A study of the forms and themes of German lyric poetry from the middle ages to the present. Prerequisite: GERM 3013. (Typically offered: Irregular)

GERM 4213. German Civilization. 3 Hours.
Explores the politics, cultural developments, and language of German-speaking countries since written evidence of their existence. Readings are drawn from current events and archived material, as well as literary or visual texts; listening practice includes news, informational videos, and archives of recorded events. Prerequisite: GERM 3003 or equivalent. (Typically offered: Spring)

GERM 4333. Professional German I. 3 Hours.
Introduces students to the language of German used in the workplace and provides insights into business practices in German-speaking countries. Follows a project based approach and covers aspects of professional presentations, team assignments, business correspondence, resume writing and job application. Open to all majors; no business prerequisites. Prerequisite: GERM 3003 or GERM 3013 or consent of the instructor. (Typically offered: Irregular)

GERM 470V. Special Topics. 1-3 Hour.
May be offered in a topic not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## GERM 475V. Special Investigations. 1-6 Hour.

Special investigations. (Typically offered: Irregular) May be repeated for degree credit.

## Greek Courses

## GREK 1003. Elementary Ancient Greek I. 3 Hours.

The rudiments of classical Greek, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability. (Typically offered: Fall)

## GREK 1013. Elementary Ancient Greek II. 3 Hours.

A continuation of the rudiments of classical Greek, with concentration on grammar, vocabulary, and syntax. Short selection from ancient authors lead to basic reading ability. Prerequisite: LATN 1003 or GREK 1003, or equivalent. (Typically offered: Spring)

GREK 2003. Intermediate Ancient Greek I. 3 Hours.
Ancient Greek grammar and syntax, with readings in Greek prose. Prerequisite: GREK 1013 or equivalent. (Typically offered: Fall)

GREK 2013. Homer. 3 Hours.
Selections from the Iliad or the Odyssey: a survey of Greek epic poetry. Prerequisite: GREK 2003 or equivalent. (Typically offered: Spring)

GREK 4003. Greek Lyric Poetry. 3 Hours.
Readings from selected Greek lyric poems, to be chosen from several appropriate authors from the 7th through the 5th centuries BCE: Archilochus, Hipponax, Sappho, Alcaeus, Tyrtaeus, Mimnermus, Semonides, Solon, Xenophanes, Theognis, Pindar, Bacchylides. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

## GREK 4013. Greek Epic Poetry. 3 Hours.

Study of the primary works of Greek hexameter poetry, including Homer, Hesiod, and/or the Homeric Hymns, with special attention to issues of oral composition and performance. Prerequisite: GREK 2013. (Typically offered: Irregular)

GREK 4023. Greek Philosophy. 3 Hours.
Study of representative works of Greek philosophy, including those of the PreSocratics, Plato, and/or Aristotle. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 4033. Herodotus or Thucydides. 3 Hours.
Readings of Herodotus, Book VII, and Thucydides, Book VI; collateral readings on the Persian and Peloponnesian Wars. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

## GREK 4043. Greek Drama. 3 Hours.

Readings of 2 tragedies and one comedy; a study of the Greek theatre. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 4053. Greek Syntax and Composition. 3 Hours.
Greek syntax and composition. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

## GREK 4063. Hellenistic Poetry. 3 Hours.

Selections from significant post-classical authors, including Callimachus, Theocritus, Bion, Moschus, Herondas, Apollonios of Rhodes, and/or poets of the Greek Anthology. Special attention to archaic and classical influences, contemporary Hellenistic culture, and Roman responses. Prerequisite: GREK 2013. (Typically offered: Irregular)

## GREK 4073. Ancient Greek Novel. 3 Hours.

Study of the development of the Greek novel including the works of Lucian, Longus, Heliodorus, and/or Achilles Tatius. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

## GREK 4083. Greek Epigraphy. 3 Hours.

Study of inscriptions, especially Attic, in their historical and social contexts, from the 8th century BCE to the Hellenistic/Roman period. Training in epigraphical conventions and symbols. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

## GREK 4093. Biblical and Patristic Greek. 3 Hours.

Selected readings from appropriate texts, varying by semester, including the Septuagint, New Testament, Apostolic Fathers, and other patristic literature to the 5th century CE. Reading and discussion of selected texts in major genres. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 4103. Greek Oratory. 3 Hours.
Readings from selected speeches, to be chosen from one or more appropriate authors: Lysias, Antiphon, Demosthenes, Isocrates, Andocides. Study of sophism and rhetoric of Athens in the 5th and 4th centuries BCE. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

## GREK 475V. Special Investigations. 1-6 Hour.

Special investigations. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

## Italian Courses

ITAL 1003. Elementary Italian I. 3 Hours.
Elementary Italian I. (Typically offered: Fall)
ITAL 1013. Elementary Italian II. 3 Hours.
Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Spring)

## ITAL 1113. Italian for Romance Language Speakers I. 3 Hours.

Designed for students with previous knowledge of another Romance Language, this intensive Italian course provides an accelerated introduction to Italian, combining the material of two semesters (ITAL 1003 \& ITAL 1013) into one. Attention is devoted to the four skills of speaking, listening, reading, writing, as well as culture. Students cannot earn credit for ITAL 1113 if both ITAL 1003 and ITAL 1013 have been completed. Prerequisite: [Three years of high school French, Spanish, or Portuguese] or [two semesters of French, Spanish, or Portuguese], or [instructor's consent]. (Typically offered: Fall)

ITAL 2003. Intermediate Italian I. 3 Hours.
Intermediate courses lead to greater facility in spoken language and to more advanced reading and writing skills. (Typically offered: Fall and Spring)
ITAL 2013. Intermediate Italian II. 3 Hours.
Continued development of basic speaking comprehension, and writing skills and intensive development of reading skills. (Typically offered: Spring)
ITAL 2113. Italian for Romance Language Speakers II. 3 Hours.
Designed for students with previous knowledge of another Romance Language, this intensive Italian course provides an accelerated approach to Italian, combining the material of two semesters (ITAL 2003 \& ITAL 2013) into one. Attention is devoted to the four skills of speaking, listening, reading, writing, as well as culture. Prerequisite: ITAL 1013 or ITAL 1113 or instructor's consent. (Typically offered: Spring)
ITAL 2933. To Rome With Love. 3 Hours.
Focuses on the practical and hands-on use of Italian in everyday situations in Rome. Students engage in the neighborhoods of Rome through the communicative approach, using linguistic components from class and combined with cultural aspects of Roman life (i.e., Roman art, history, Made-in-Italy, cinema, and food). (Typically offered: Fall, Spring and Summer)

## ITAL 3033. Italian Conversation. 3 Hours.

Three hours per week of guided conversation practice for the post-intermediate student. Prerequisite: ITAL 2013. (Typically offered: Fall)
ITAL 3103. Italian Cinema. 3 Hours.
Examines Italian culture (history, language, politics, religion, and society) through the lens of the camera. Content begins with the 1860's, covers the Unification of Italy, and continues to contemporary Italy. Students will analyze and examine diverse cultural themes within films. (Typically offered: Fall)
ITAL 3113. Introduction to Literature. 3 Hours.
Development of reading skills and introduction to literary analysis. Prerequisite: ITAL 2013 or equivalent. (Typically offered: Spring) May be repeated for up to 3 hours of degree credit.

## ITAL 3123. Advanced Italian. 3 Hours.

Further intensive development of writing, listening and speaking skills. It will include a review of the essentials of Italian grammar. Prerequisite: ITAL 2013 or equivalent. (Typically offered: Spring)
ITAL 3333. Made In Italy. 3 Hours.
Based around the concept of MADE IN ITALY and its 4 As, Abbigliamento (clothes), Agroalimentare (food), Arredamento (furniture) and Automotive (automobiles), this course examines the economy of Italy through various perspectives. Prerequisite: ITAL 2013. (Typically offered: Irregular)

## ITAL 3983. Special Studies. 3 Hours.

May be offered in a subject not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ITAL 4023. Contemporary Images of and from Rome. 3 Hours.
Examines the many manifestations of Rome through literature, film, and onsite experiential learning. Introduces texts and places that highlight Rome as a protagonist from the late 19th century to the present. Taught in Italian. Prerequisite: ITAL 2013. (Typically offered: Summer)

## ITAL 4033. Advanced Italian Conversation. 3 Hours.

Conversation practice for advanced undergraduates. Intended to refine language comprehension while providing in-depth understanding of Italian life and culture.
Prerequisite: ITAL 3033 or ITAL 3113 or instructor consent. (Typically offered: Fall)

## ITAL 4043. Black Italia. 3 Hours.

Explores the history, representation, and lived experiences, both prejudices and successes, of marginalized persons in Italy, particularly those of African heritage through an interdisciplinary lens. (Typically offered: Spring Odd Years) This course is cross-listed with AAST 4043.

ITAL 4113. Italian Fairy Tales in Literature, Visual Arts, and Cinema. 3 Hours. Explores different typologies of fables and examines the evolution of the genre from the Middle Ages to contemporary times. Taught in Italian. Prerequisite: ITAL 3113 or ITAL 3123 or instructor's consent. (Typically offered: Spring Even Years) This course is cross-listed with MRST 4113.

ITAL 4123. Dante: A Journey Between Visions and Words. 3 Hours.
Explores the pivotal work of Dante Alighieri's Divine Comedy as well as its visual representations and critical interpretations from the Middle Ages to the contemporary time. Theme is variable. Taught in English. (Typically offered: Fall Odd Years)
ITAL 4133. The Power of Women: Representations of \& from Italian Women from Middle Ages to Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with GNST 4133, MRST 4133.
ITAL 4143. Tracing the Italian American Experience. 3 Hours.
Explores and analyzes the historical experience of Italian American migration in North America through media, literature, and the arts. (Typically offered: Fall Odd Years)
ITAL 4333. Italian for International Business. 3 Hours.
Equips students with the linguistic and cultural knowledge needed for the business sector in Italy and/or with Italian businesses housed in North America. Taught in Italian. Prerequisite: ITAL 3033 or ITAL 3333. (Typically offered: Irregular)
ITAL 475V. Special Investigations. 1-6 Hour.
Special investigation of one or more topics related to the Italian language. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## Japanese Courses

## JAPN 1003. Elementary Japanese I. 3 Hours.

Designed for true beginners of Japanese, this course aims to introduce general concepts of the Japanese language: the writing system, basic conversational expressions, vocabulary, and sentence patterns. (Typically offered: Fall)
JAPN 1013. Elementary Japanese II. 3 Hours.
Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Spring)

## JAPN 1116. Intensive Elementary Japanese. 6 Hours.

Equivalent to JAPN 1003 and JAPN 1013. Intended for true beginners of Japanese who have never learned or spoken the language before. Emphasis on all skill areas: correct pronunciation, aural comprehension, speaking ability, reading, and writing. Focuses on developing the students' command of Japanese sentence patterns and vocabulary. (Typically offered: Spring)

JAPN 2003. Intermediate Japanese I. 3 Hours.
Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall)
JAPN 2013. Intermediate Japanese II. 3 Hours.
Continued development of basic reading comprehension and writing skills and intensive development of reading skills. Prerequisite: JAPN 2003 or equivalent. (Typically offered: Spring)

## JAPN 2013H. Honors Intermediate Japanese II. 3 Hours.

Continued development of basic reading comprehension and writing skills and intensive development of reading skills. Prerequisite: Honors standing and JAPN 2003, or equivalent. (Typically offered: Spring)
This course is equivalent to JAPN 2013.

## JAPN 2116. Intensive Intermediate Japanese. 6 Hours.

Equivalent to JAPN 2003 and JAPN 2013. Emphasizes intensive oral/aural drills and reading/speaking exercises and intensive grammar drills. Prerequisite: JAPN 1013 or JAPN 1116 or equivalent. (Typically offered: Irregular)

## JAPN 3033. Advanced Japanese Conversation. 3 Hours.

Conversational practice for advanced learners of Japanese. Designed primarily for students who intend to use Japanese in business and other formal settings. Honorific and humble expressions will be emphasized. Prerequisite: JAPN 3116 or equivalent. (Typically offered: Spring)

JAPN 3033H. Honors Advanced Japanese Conversation. 3 Hours.
Conversational practice for advanced learners of Japanese. Designed primarily for students who intend to use Japanese in business and other formal settings. Honorific and humble expressions will be emphasized. Prerequisite: Honors standing and JAPN 2013. (Typically offered: Fall)
This course is equivalent to JAPN 3033.

## JAPN 3116. Intensive Advanced Japanese. 6 Hours.

This course aims to improve students' Japanese proficiency further in all skill areas through intensive practice. Prerequisite: JAPN 2013 or JAPN 2116 or equivalent Japanese proficiency. (Typically offered: Fall)

## JAPN 3116H. Honors Intensive Advanced Japanese. 6 Hours.

This course aims to improve students' Japanese proficiency further in all skill areas through intensive practice. Prerequisite: Honors standing and (JAPN 2013 or JAPN 2116 or equivalent Japanese proficiency). (Typically offered: Fall)
This course is equivalent to JAPN 3116.
JAPN 3983. Special Studies. 3 Hours.
May be offered in a subject not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## JAPN 4033. Oral Communication \& Composition in Japanese. 3 Hours.

Designed to strengthen Japanese language skills in oral communication and writing. Consists of conversational activities, presentations and debates, and composition in settings such as business, school, and everyday life. Prerequisite: JAPN 3116 or equivalent Japanese proficiency. (Typically offered: Fall)

## JAPN 4033H. Honors Oral Communication \& Composition in Japanese. 3

 Hours.Designed to strengthen Japanese language skills in oral communication and writing. Consists of conversational activities, presentations and debates, and composition in settings such as business, school, and everyday life. Prerequisite: JAPN 3116 or equivalent Japanese proficiency. (Typically offered: Fall)
This course is equivalent to JAPN 4033.
JAPN 4313. Language and Society of Japan. 3 Hours.
The primary objective of this course is to investigate the way the Japanese language reflects the beliefs and custom of the Japanese people as a social group. For comparison purposes, this course makes reference to studies in American language and culture. Proficiency in Japanese not required. Prerequisite: Junior standing. (Typically offered: Fall)

JAPN 4333. Professional Japanese I: Business Writing. 3 Hours.
This course aims to familiarize the students with formats, vocabulary, and expressions in Japanese business correspondence. Emphasizes career-ready Japanese language proficiency. Prerequisite: JAPN 3116 or equivalent Japanese proficiency. (Typically offered: Spring)

## JAPN 4333H. Honors Business Writing in Japanese. 3 Hours.

This course aims to familiarize the students with formats, vocabulary, and situationally specific expressions in Japanese business correspondence. Prerequisite: JAPN 2013 or equivalent Japanese proficiency. (Typically offered: Spring)
This course is equivalent to JAPN 4333.

## JAPN 4343. Professional Japanese II: Translation. 3 Hours.

Continuation of Professional Japanese I. Emphasizes translation, career-ready Japanese language proficiency, and further advancement of Japanese language proficiency in all skill areas. Completion of a professional translation project based on contemporary material is required. Prerequisite: JAPN 4333 or equivalent. (Typically offered: Fall)

JAPN 4343H. Honors Professional Japanese II: Translation. 3 Hours.
Continuation of Professional Japanese I. Emphasizes translation, career-ready Japanese language proficiency, and further advancement of Japanese language proficiency in all skill areas. Completion of a professional translation project based on contemporary material is required. Prerequisite: JAPN 4333 or equivalent. (Typically offered: Fall)
This course is equivalent to JAPN 4343.

## Latin Courses

LATN 1003. Elementary Latin I. 3 Hours.
The rudiments of classical Latin, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability. (Typically offered: Fall)

## LATN 1013. Elementary Latin II. 3 Hours.

A continuation of the rudiments of classical Latin, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability. Prerequisite: LATN 1003 or GREK 1003, or equivalent. (Typically offered: Spring)

## LATN 2003. Petronius' Satyricon. 3 Hours.

Development of reading skills through selections from Satyricon, and an introduction to imperial history and culture through critical study of the novel in translation. Prerequisite: LATN 1013 or equivalent. (Typically offered: Fall)

## LATN 2013. Catullus. 3 Hours.

Development of reading skills through selections from Catullus' poems, and an introduction to the culture and history of the late republic through critical study of Catullus in translation and secondary works. Prerequisite: LATN 2003 or equivalent. (Typically offered: Spring)

## LATN 3003. Virgil and Ovid. 3 Hours.

Selections from the Aeneid and/or the Metamorphoses, and an introduction to Roman literary history through the critical study of these works in translation. Prerequisite: LATN 2013 or equivalent. (Typically offered: Fall)

LATN 3013. Caesar. 3 Hours.
Selected readings from Caesar's commentaries on Gallic or Civil Wars, and an overview of Republican political and military history through the critical study of the commentaries in translation and secondary works. Prerequisite: LATN 3003 or equivalent. (Typically offered: Spring)

## LATN 3063. Intensive Elementary Latin Reading. 3 Hours.

Overview of Latin grammar, vocabulary and syntax, leading to reading prose texts. For undergraduates who want short, intensive introduction to Latin and graduate students working towards reading proficiency. Successful completion fulfills graduate student research reading proficiency requirement. LATN 3063 alone cannot fulfill the Foreign Language requirement in Fulbright College. No credit for this course and LATN 1003 and/or LATN 1013. (Typically offered: Summer)

## LATN 4003. Roman History. 3 Hours.

Selections from Sallust, Livy, Tacitus, or Suetonius. An overview of Roman Historiography through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

## LATN 4013. Roman Satire. 3 Hours.

Selections from the satires of Horace, Juvenal, Persius, or Seneca. An overview of Roman humor and the genre of satire through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

## LATN 4023. Roman Didactic Epic. 3 Hours.

Selections from Virgil's Georgics, Lucretius' De Rerum Natura, or Manilius' Astronomica. An overview of Roman philosophical poetry through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

LATN 4033. Roman Drama. 3 Hours.
Selections from Plautus, Terence, or Seneca. An overview of Roman theater through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

## LATN 4043. Roman Elegy. 3 Hours.

Selections from Propertius, Tibullus, or Ovid. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

## LATN 4073. Roman Novel. 3 Hours.

Selections from Petronius or Apuleius. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

LATN 4083. Roman Oratory. 3 Hours.
Selections from the orations and theoretical works of Cicero, Seneca the Elder, or Quintilian. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## LATN 4093. Roman Philosophy. 3 Hours.

Selections from the philosophical works of Cicero or Seneca. An overview of Roman philosophy through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

LATN 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Irregular) May be repeated for degree credit.

## Portuguese Courses

## PORT 1003. Elementary Portuguese I. 3 Hours.

An introduction to basic Portuguese grammar with emphasis on listening comprehension and speaking skills. (Typically offered: Irregular)

## PORT 1013. Elementary Portuguese II. 3 Hours.

A continuation of PORT 1003. Prerequisite: PORT 1003 or equivalent. (Typically offered: Irregular)

PORT 1103. Portuguese for Romance Language Speakers I. 3 Hours.
This is the first course of a two-semester program to help Romance language speakers to develop their communicative skills in Portuguese. For students who have completed four semesters or more of Spanish, French, or Italian (2013 level or equivalent). Prerequisite: One of the following: SPAN 2013, FREN 2013, or ITAL 2013, or Native speakers must request approval from instructor. (Typically offered: Fall)

## PORT 2003. Intermediate Portuguese I. 3 Hours.

Review of basic grammar and further development of oral and reading skills. Prerequisite: PORT 1013 or equivalent. (Typically offered: Irregular)

PORT 2013. Intermediate Portuguese II. 3 Hours.
Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. Prerequisite: PORT 2003 or equivalent. (Typically offered: Irregular)

PORT 2103. Portuguese for Romance Language Speakers II. 3 Hours.
This is the second course of a two-semester program to help Romance language speakers to develop their communicative skills in Portuguese. For students who have completed PORT 1103 Portuguese for Romance Language Speakers I. Prerequisite: PORT 1103 or equivalent. (Typically offered: Spring)

## PORT 3003. Portuguese Conversation. 3 Hours.

Continuation of the development of communicative skills in Portuguese with intensive readings on topics of Luso-Afro-Brazilian culture and expansion of vocabulary useful for conversation and composition. Prerequisite: PORT 2013 or PORT 2103 or equivalent. (Typically offered: Irregular)

## PORT 3013. Brazilian Cinema. 3 Hours.

Examines a variety of topics in Brazilian culture and history through films, documentaries, and literary and cultural texts. Prerequisite: PORT 3003 or equivalent. (Typically offered: Irregular)

## PORT 3013H. Honors Brazilian Cinema. 3 Hours.

Examines a variety of topics in Brazilian culture and history through films, documentaries, and literary and cultural texts. Prerequisite: Honors candidacy and PORT 3003 or equivalent. (Typically offered: Irregular)
This course is equivalent to PORT 3013.

## PORT 3203. Brazilian Cultural and Social Issues. 3 Hours.

Provides different perspectives on the elements that shape contemporary Brazilian culture and society, focusing on issues of race, class, gender, and sexuality. Taught in English. Prerequisite: Sophomore standing. (Typically offered: Irregular)

## PORT 3203H. Honors Brazilian Cultural and Social Issues. 3 Hours.

Provides different perspectives on the elements that shape contemporary Brazilian culture and society, focusing on issues of race, class, gender, and sexuality. Prerequisite: Honors candidacy and PORT 3003 or equivalent. (Typically offered: Irregular)
This course is equivalent to PORT 3203.

## Russian Courses

## RUSS 1003. Elementary Russian I. 3 Hours.

First semester of Russian intended for students who have not studied the language before. Students learn how to read and write in the Cyrillic alphabet, as well as communicate on basic topics and gain cultural awareness about the modern Russian-speaking world. (Typically offered: Fall)

## RUSS 1013. Elementary Russian II. 3 Hours.

A continuation of RUSS 1003. Continues developing basic listening, communicative, cultural, speaking, reading, and writing skills. Prerequisite: RUSS 1003. (Typically offered: Spring)

## RUSS 2003. Intermediate Russian I. 3 Hours.

Focuses on mastering speaking, writing, reading, listening skills and cultural awareness using a variety of different texts and cultural material. Prerequisite: RUSS 1013. (Typically offered: Fall)

## RUSS 2013. Intermediate Russian II. 3 Hours.

Continues expanding students' writing, reading, listening, and communicative skills by leading them to intermediate advanced level. Prerequisite: RUSS 2003. (Typically offered: Spring)

## RUSS 3003. Advanced Russian I. 3 Hours.

Through reading and discussing contemporary political and historical events students advance their speaking, listening, and writing skills. The course builds on and advances the language skills acquired in RUSS 2013 Intermediate Russian II. Prerequisite: RUSS 2013, or equivalent language skills that will be equal to four semesters of language instruction. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## RUSS 4113. Special Themes in Russian. 3 Hours.

Covers topics not normally dealt with in period courses. Sample topics include gender and sexuality, war and memory, Holocaust, art and protest, modernism/ post-modernism, Jewish writers, and cinema. Topics announced one semester in advance. This course is taught in English. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with WLIT 4113.
RUSS 4123. Survey of Russian Literature from Its Beginning to the 1917 Revolution. 3 Hours.
The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English. (Typically offered: Irregular)

RUSS 4133. Survey of Russian Literature Since the 1917 Revolution. 3 Hours. The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English with readings in English. (Typically offered: Irregular)
This course is cross-listed with WLIT 4133.
RUSS 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Fall and Spring) May be repeated for degree credit.

## Spanish Courses

SPAN 1003. Elementary Spanish I (ACTS Equivalency = SPAN 1013). 3 Hours. A first introduction of Spanish for true beginners--pronunciation, aural comprehension, speaking and reading in Spanish--with an objective towards active mastery of basic grammatical structures. (Typically offered: Fall and Spring)

SPAN 1013. Elementary Spanish II (ACTS Equivalency SPAN 1023). 3 Hours.
Elementary courses stress pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery basic grammar and limited reading ability. (Typically offered: Fall and Spring)
SPAN 2003. Intermediate Spanish I (ACTS Equivalency = SPAN 2013). 3 Hours. Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall and Spring)
SPAN 2013. Intermediate Spanish II (ACTS Equivalency = SPAN 2023). 3 Hours. Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Fall and Spring)

## SPAN 2013H. Honors Intermediate Spanish II. 3 Hours.

Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Fall and Spring) This course is equivalent to SPAN 2013.

SPAN 2123. Spanish for Heritage Speakers I. 3 Hours.
Designed for students from a Spanish-speaking background with limited to no formal study of the language. Literacy development in Spanish with emphasis on building vocabulary, plus reading and writing skills. Prerequisite: Students who have taken one year or less of Spanish. Placement by exam or by Spanish Advisor. (Typically offered: Irregular)
SPAN 3003. Advanced Spanish. 3 Hours.
Further intensive practice to strengthen written and oral expression. Includes a review of the essentials of Spanish grammar. Prerequisite: SPAN 2013 or equivalent. (Typically offered: Fall and Spring)

SPAN 3033. Conversation and Composition. 3 Hours.
Three hours per week of guided conversation (oral) and composition (written) practice for the post-intermediate student. Prerequisite: SPAN 3003. (Typically offered: Fall and Spring)

SPAN 3103. Cultural Readings. 3 Hours.
A course designed to build vocabulary and to strengthen reading skills and oral expression through extensive practice with culturally authentic materials. Prerequisite: SPAN 2013 or equivalent. (Typically offered: Fall and Spring)

## SPAN 3113. Introduction to Literature. 3 Hours.

Further development of reading skills and introduction to literary commentary and analysis. Prerequisite: (Both SPAN 3003 and SPAN 3103 or only SPAN 3123), or equivalent. (Typically offered: Fall and Spring)

SPAN 3113H. Honors Introduction to Literature. 3 Hours.
Further development of reading skills and introduction to literary commentary and analysis. Prerequisite: Honors standing, both SPAN 3003 and SPAN 3103 or only SPAN 3123. (Typically offered: Irregular)
This course is equivalent to SPAN 3113.

## SPAN 3123. Spanish for Heritage Speakers II. 3 Hours.

Designed for students from a Spanish-speaking background with some formal training in Spanish and/or the ability to read and write in the language. Continue developing language skills, plus introduction to the U.S. Latino literature and culture. Prerequisite: Students who have taken two years of Spanish in High School, SPAN 2123 or placement exam. (Typically offered: Fall and Spring)
SPAN 3883. Translation and Interpretation I: Spa/Eng - Eng/Spa. 3 Hours.
Designed for learners who want to improve their proficiency in both Spanish and English while introducing translation and interpretation theory with hands-on practice. Prerequisite: Both SPAN 3003 and SPAN 3103, or only SPAN 3123, or instructor consent. (Typically offered: Irregular)

SPAN 399VH. Honors Spanish Course. 1-6 Hour.
Honors thesis research and writing under the direction of a faculty member in the department. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

SPAN 4003. Advanced Grammar. 3 Hours.
For majors and advanced students covering the problematic areas of Spanish syntax and usage. Prerequisite: SPAN 3003 and SPAN 3103. (Typically offered: Fall)
SPAN 4073. Introduction to Hispanic Linguistics. 3 Hours.
Deepens students' knowledge of the Spanish language through an introduction to the discipline of Linguistics, which is the field of science that studies human language. Areas of Hispanic linguistics that will be covered include phonology (sound system), morphology (word structure), and syntax (sentence structure). Prerequisite: SPAN 4003. (Typically offered: Irregular)

## SPAN 4103. Monuments of Spanish Literature I. 3 Hours.

Monuments of the major works of Spanish literature from El Cid through the 17th century. Prerequisite: SPAN 3113. (Typically offered: Irregular)

SPAN 4113. Monuments of Spanish Literature II. 3 Hours.
Monuments of Spanish literature from the 18th century to the present. Prerequisite: SPAN 3113. (Typically offered: Irregular)
SPAN 4123. Spanish for Heritage Speakers III. 3 Hours.
Continued development and expansion of Spanish writing skills. Special emphasis given to active grammar, textual production, and critical thinking for writing in academic and professional settings. Students' work involves research, reading, composing, delivering presentations, writing and proofreading different types of essays. Prerequisite: Students who have taken three or more years of Spanish in high school, AP Spanish, SPAN 3123 or placement exam. (Typically offered: Irregular)
SPAN 4133. Survey of Spanish-American Literature I. 3 Hours.
Survey of Spanish-American literature from the Colonial period to mid-19th Century, including pre-Hispanic Indigenous Literatures. Prerequisite: SPAN 3113. (Typically offered: Irregular)

SPAN 4193. Survey of Spanish-American Literature II. 3 Hours.
Survey of Spanish-American literature from Modernism to the present. Prerequisite: SPAN 3113. (Typically offered: Irregular)

SPAN 4213. Spanish Civilization. 3 Hours.
A wide-ranging exploration of Spanish history and culture from the Middle Ages to the present. Prerequisite: SPAN 3113. (Typically offered: Irregular)
SPAN 4223. Latin American Civilization. 3 Hours.
Latin American civilization. Prerequisite: SPAN 3113. (Typically offered: Irregular)
SPAN 4243. Literature and Culture in the Hispanic United States. 3 Hours. An exploration of the history and culture, art and politics of the major Hispanic groups in the United States. Focus on contemporary attitudes and issues. Prerequisite: SPAN 3113. (Typically offered: Irregular)
SPAN 4253. Latin American Cinema and Society. 3 Hours.
This course examines key issues in Latin American culture and history through films, documentaries, and literary and cultural texts. Topics included are: Human Rights, Ethnicity, Gender, Revisions of the past. Prerequisite: SPAN 3113. (Typically offered: Irregular)

SPAN 4333. Business Spanish I. 3 Hours.
Enhances ability to interact in Spanish-language business environments by providing a solid foundation in vocabulary and structure in functional business areas such as company structure, banking and accounting, capital investment, goods and services, marketing, finance, and import-export. Students commit to 15 hours during the semester to work on business-related projects with the Spanish-speaking community of Northwest Arkansas. Prerequisite: (SPAN 3003 and SPAN 3103) or SPAN 3123. (Typically offered: Fall and Spring)
SPAN 4563. Latino Youth Biliteracy Service Learning Project. 3 Hours.
The Latino Youth Biliteracy Project is a service learning course for students in Spanish and Latin American and Latino Studies. Readings on Latino education policies and challenges, bilingualism, and the immigrant experience. Students commit from 15 to 30 hours of mentoring Latino youth at local schools during the semester (in addition to class meeting times) and complete a research project on Latino education. Prerequisite: SPAN 3113 or SPAN 3123 or instructor consent. (Typically offered: Irregular)

## SPAN 4583. Advanced Spanish for Health Professions. 3 Hours.

Advanced Spanish for Health Professions is an upper level service learning course for students in Spanish and Latin American and Latino Studies. Development of Spanish language for healthcare providers. Readings on the state of Latino health care in Arkansas and in the United States. Students will work 30 hours during the semester on health related projects with the Spanish speaking community of NWA. Prerequisite: SPAN 3003 and SPAN 3103 or SPAN 3123. (Typically offered: Irregular)

## SPAN 4623. Advanced Proficiency in Spanish. 3 Hours.

Work in translation and composition, oral proficiency, and phonetics and pronunciation for students who still seek further practice in skills development to extend their fluency and proficiency in the second language. Suitable for nonnative speaking students considering becoming teachers of Spanish. Prerequisite: SPAN 4003 or instructor consent. (Typically offered: Irregular)

## SPAN 470V. Special Topics. 1-3 Hour.

May be offered in a topic not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

SPAN 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Fall and Spring) May be repeated for degree credit.

## SPAN 4873. Creative Writing in Spanish. 3 Hours.

Introduces students to basic skills and tools needed to be a creative writer in Spanish by exploring poetry, short story, and the short novel. Prerequisite: SPAN 3033 and SPAN 3103. (Typically offered: Fall Even Years)

## Swahili Courses

SWAH 1003. Elementary Swahili I. 3 Hours.
Stresses correct pronunciation, aural comprehension, simple speaking ability, and leads to mastery of basic grammar and limited reading ability. (Typically offered: Irregular)

SWAH 1013. Elementary Swahili II. 3 Hours.
Continues to stress correct pronunciation, aural comprehension, and speaking ability and continues to build mastery of basic grammar and limited reading ability. Prerequisite: SWAH 1003 (Typically offered: Irregular)
SWAH 2003. Intermediate Swahili I. 3 Hours.
Leads to greater facility in spoken language and develops more advanced reading and writing skills. Prerequisite: SWAH 1003 and SWAH 1013. (Typically offered: Irregular)

## SWAH 2013. Intermediate Swahili II. 3 Hours.

Leads to greater facility in spoken language and develops more advanced reading and writing skills. Prerequisite: SWAH 1003, SWAH 1013 and SWAH 2003. (Typically offered: Irregular)

## World Languages, Literatures and Cultures Courses

WLLC 3053. The Colonial French in the Mississippi Valley. 3 Hours. This course focuses on the French Colonial Mississippi Valley from 1698 until 1763. Activities for both French and non-French speaking students provide a rich environment to discuss encounters, subsistence strategies, and warfare faced by native peoples, missionaries, explorers, and colonists alike. Students will examine primary handwritten, transcribed, or translated sources. (Typically offered: Spring)

## WLLC 3063. Intro to Digital Humanities. 3 Hours.

Explores the myriad intellectual, technological, and aesthetic phenomena emerging from the intersection of the humanities and the digital. Students will critically reflect on the ideas of the innovators who paved the way to the digital age, review humanist responses to the digital age, engage with the field of digital humanities proper, addressing the methodologies, technologies, and histories the field entails, and apply theoretical insights to their practical engagement with a selection of digital tools and projects. (Typically offered: Fall)

WLLC 3073. Digital Humanities Special Topics. 3 Hours.
Topics in digital humanities which are not usually presented in depth in regular courses. Prerequisite: WLLC 3063. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.
WLLC 3173. Introduction to Linguistics. 3 Hours.
Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, the history of linguistic scholarship. Prerequisite: Junior standing. (Typically offered: Irregular)
This course is cross-listed with COMM 3173, ENGL 3173.

## WLLC 3923H. Honors Colloquium. 3 Hours.

Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in foreign languages). (Typically offered: Irregular) May be repeated for degree credit.

WLLC 398V. Special Studies. 1-6 Hour.
A course (not independent study) which covers a topic or author not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for degree credit.

WLLC 398VH. Honors Special Studies. 1-6 Hour.
A course (not independent study) which covers a topic or author not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to WLLC 398V.
WLLC 4013. Ethno-Historic Approach to Native American Languages. 3 Hours. This course pursues an ethno-historic examination of Native American languages among Native nations primarily from the southeast and midwest including the Quapaws, the Cherokee, the Caddos, and the Illinois, though other nations are certainly discussed. This course examines the Native American group's history, European encounters, spoken and written language, nonverbal language, visual and ritual communication, devastation to language and culture through boarding schools, as well as current language revitalization. (Typically offered: Fall)

WLLC 4023. Languages, Cultures, and Teaching with Technology. 3 Hours. This course provides senior level undergraduate and graduate students with innovative ways to teach and communicate through the use of modern technologies as applied to second languages. Topics of discussion include instructional systems design, Web 2.0 technologies, presentation technologies, online facilitation, and pedagogical strategies for using technological tools in language and culture courses. Prerequisite: Senior standing. (Typically offered: Irregular)

WLLC 4033. Languages, Cultures and Teaching with Video. 3 Hours.
This course provides senior level undergraduates and graduate students with the knowledge and skills needed to teach and communicate through the use of video as applied to second languages. Topics of discussion include instructional systems design, development of strong pedagogical strategies for teaching with film, analysis of research focused on subtitling, learning strategies, mental effort, and language and culture development, as well as some videotaping and editing. Prerequisite: Senior standing. (Typically offered: Irregular)
WLLC 4043. The Early French in North America. 3 Hours.
This course focuses on French exploration in North America from 1508 until 1698. Activities for both French and non-French speaking students provide a rich environment to discuss first encounters, cultural differences, and colonization struggles throughout New France by indigenous peoples, missionaries, military and colonists alike. This course strongly familiarizes students with historic events leading up to beginnings of Colonial French Arkansas and Lower Mississippi Valley. Prerequisite: FREN 2013 or equivalent. (Typically offered: Fall)

WLLC 423V. Culture and Civilization: Field Studies. 1-18 Hour.
May be taken by students participating in overseas work study programs approved by the department. (Typically offered: Irregular) May be repeated for degree credit.

## Sam M. Walton College of Business

## Mission and Objectives <br> Vision Statement

Through our teaching, research, and service, the Sam M. Walton College of Business will be a thought leader and a catalyst for transforming lives in Arkansas, the United States and the world.

## Core Values

Excellence: We are driven to be the best in everything we do.
Professionalism: We operate with integrity, humility, respect, and Inclusion.

Innovation: We imagine possibilities, we create, and we inspire others.
Collegiality: We respect each individual, we value our differences, and we welcome all.

## Mission Statement

The mission of the Sam M. Walton College of Business is to advance and disseminate business knowledge using a diverse, inclusive, and global perspective and to encourage innovation in our primary strategic endeavors: Retail, Data Analytics, and Entrepreneurship.

## Facilities and Resources

The Walton College offers degree programs for undergraduate students and for graduate students at both the master's and doctoral levels.

The Walton College is housed in modern four buildings supporting on-campus programs. These attractive facilities provide technologyequipped classrooms and state-of-the-art computer laboratories for both business classes and individual use. The buildings also house faculty and administrative offices, an honors program study area with computer access, the George W. Edwards Jr. Career Suite, the Garrison Financial Institute, and large study areas equipped for individual as well as group studying.

The library of the college is part of the general University Libraries and is housed in Mullins Library. The business and economics collection comprises approximately 55,000 volumes and makes this library one of the best in the region.

Walton College also operates centers, hubs, labs and studios for research, outreach, and public service. Information about centers may be found in the University Centers and Research Units section of this catalog. Walton College centers include the following:

- Behavioral Business Research Lab
- Bessie B. Moore Center for Economic Education
- Blockchain Center for Excellence
- Center for Business and Economic Research
- Executive Education
- Garrison Financial Institute
- McMillon Innovation Studio
- Office of Entrepreneurship and Innovation
- Supply Chain Management Research Center
- The Sustainability Consortium
- Tyson Center for Faith and Spirituality in the Workplace


## Degrees Offered

Undergraduate students may pursue curricula leading to one of the following degrees: Bachelor of Science in Business Administration (B.S.B.A), Bachelor of Science in International Business (B.S.I.B.). In each of these degree programs, the pre-business requirements must be completed before students may enroll in upper division business courses. Students in Walton College may pursue an academic minor in business or in the Fulbright College of Arts and Sciences. Walton College also offers business minors for non-business students. Degree programs and minors are outlined on subsequent pages.

## College Admission Requirements

All students admitted to the University of Arkansas, Fayetteville, are eligible for admission to the Sam M. Walton College of Business. Students will be required to follow the degree program requirements set forth in the catalog corresponding to the student's first semester in Walton College, not the first semester of enrollment at the University of Arkansas.

## College Scholarships

High school graduates who expect to enroll in Walton College are encouraged to apply for scholarships made available to freshmen by individuals, business firms, and organizations. Also available to freshmen, regardless of degree program, are freshmen academic scholarships. Current Walton College students may apply for both college and departmental scholarships beginning in January of each year for the following academic year. Information on these financial awards may be secured from the University Scholarship Office and the Walton College Undergraduate Programs Office.

## Student Organizations

In addition to the general university student organizations, Walton College Student Ambassadors, Leadership Walton and a Business Dean's Student Advisory Board, there are several college societies open to Walton College students. These include the following:

- American Marketing Association
- Association for Information Systems
- Beta Alpha Psi (accounting honorary)
- Beta Gamma Sigma (business honorary)
- Enactus (formerly SIFE)
- Finance Club
- Future Women Business Leaders
- National Association of Black Accountants
- Omicron Delta Epsilon (economics honorary)
- Phi Beta Delta (international scholars honorary)
- S.A.K.E. (Students Acquiring Knowledge Through Enterprise)
- Society for Human Resource Management
- Student Society for Management Education
- Students of Retailing Excellence (STORE)
- Transportation and Logistics Association
- Women Impacting Supply Excellence (WISE)


## Eight-Semester Degree Program Policy <br> College Academic Regulations

## Pre-Business Requirements

Students pursuing a degree in Walton College are classified as prebusiness with an intended major until all pre-business requirements are fulfilled. The following policies apply to the pre-business program:

To be eligible to enroll in upper-division business courses in Walton College, a student must complete the Walton College computer competency requirement, ISYS 1123and maintain at least a 2.50 (on a 4.00 scale) overall grade-point average (GPA) in addition to completing the 31 credit hours listed below of pre-business core courses (or their equivalents), also with at least a 2.50 GPA. Further, a student must complete all courses offered to meet this requirement with a grade of "C" or better or the requirement for graduation. The pre-business core courses are as follows:

| ACCT 2013 | Accounting Principles | 3 |
| :--- | :--- | :--- |
| ACCT 2023 | Accounting Principles II |  |


| ECON 2013 | Principles of Macroeconomics (ACTS Equivalency <br> = ECON 2103) | 3 |
| :--- | :--- | :--- |
| ECON 2023 | Principles of Microeconomics (ACTS Equivalency <br> = ECON 2203) | 3 |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| ISYS 1123 | Business Application Knowledge - Computer <br> Competency | 3 |
| MATH 2043 | Survey of Calculus (ACTS Equivalency = MATH <br> 2203) | 3 |
| MATH 2053 | Finite Mathematics | 3 |
| BUSI 1111 | Freshman Business Connection | 1 |
| BUSI 1033 | Data Analysis and Interpretation | 3 |
| 1 Students majoring or minoring in Accounting or Finance must complete |  |  |
| ACCT 2023. |  |  |

Students' records will be evaluated each semester to determine whether a student should be moved to a major and have pre-business classification removed. After completing pre-business requirements and being admitted into his or her major, the student is expected to arrange for a pre-graduation check by the Undergraduate Programs Office to ascertain remaining degree requirements.

## Business Core Requirements

Students pursuing a degree in Walton College must complete the following business core courses.

| BLAW 2013 | The Legal Environment of Business (ACTS <br>  <br>  <br> Equivalency = BLAW 2003) | 3 |
| :--- | :--- | :--- |
| ISYS 2103 | Business Information Systems | 3 |
| FINN 2043 | Principles of Finance | 3 |
| MGMT 2103 | Managing People and Organizations | 3 |
| SEVI 3013 | Strategic Management | 3 |
| MKTG 3433 | Introduction to Marketing | 3 |
| SCMT 2103 | Integrated Supply Chain Management | 3 |

## Registration in Junior/Senior-Level Walton College Courses

Walton College students must complete the pre-business requirements prior to enrollment in junior- or senior-level courses in Walton College.

Non-degree seeking students and students enrolled in other colleges are subject to the same course prerequisites as students within Walton College. Specific exceptions to this policy must be addressed to the executive director for undergraduate programs in Walton College.

Restrictions on General Education Electives: Only three hours total of general education electives will be allowed in Physical Education Activity (PEAC) or Dance Education Activity (DEAC) courses.

## Transfer of Credit Policies

In addition to the university policies controlling the granting of credit for course work taken at other institutions, the following policies apply to transfer work applied to any undergraduate business program:

1. Transfer students considering admission to pursue a major in Walton College must have completed the pre-business courses and requirements listed above and have a 2.50 (on a 4.00 scale)
cumulative grade-point average in the pre-business courses and in his or her overall grade-point average. Transfer students will be classified as pre-business students until pre-business core requirements have been completed.
2. A pre-business and overall grade-point average for courses accepted for transfer by the University of Arkansas will be calculated and used to evaluate the completion of the pre-business requirements by students transferring courses from other institutions.
3. Unless exceptions are granted at the time of admission to the University of Arkansas, transfer courses accepted by the university will not be accepted by Walton College for degree purposes unless a grade of "C" or better has been earned in each of these courses. (See the university Transfer of Credit page (p. 89).)
4. A transferred course cannot carry more degree hours than are available in a similar University of Arkansas course. For example, a four-hour principles of economics course transfers as three degree hours.
5. Business courses completed at the freshman or sophomore level at another institution will not count as equivalents of junior- or seniorlevel courses offered in Walton College (University of Arkansas), and no transfer credit shall be granted for any such course(s) in Walton College.
6. At least 50 percent of program requirements in business and economics must be taken in residence.
7. SEVI 3013, 21-24 hours of upper division courses required for the completion of the major, and 3-6 hours of additional, upper division business courses are required degree must be taken in residence at the University of Arkansas, Fayetteville.
8. Junior- or senior-level core courses in business and economics may be transferred from a school accredited by AACSB International.
9. Junior- or senior-level core courses taken at a non-AACSB International-accredited, four-year institution must either be repeated or validated by procedures specified and approved by the assistant dean for undergraduate programs.
10. Junior- or senior-level electives in business and economics taken at a non-AACSB International-accredited, four-year institution may be accepted in transfer as junior/senior business electives.
11. In cases of minors or transfer, students who take courses with different names but with similar content at different institutions or in different colleges within the University of Arkansas, may be allowed degree credit for only one of the courses (i.e.: principles of economics and agricultural economics). Students pursuing degrees and minors within the Walton College must enroll in business courses as designated by their program of study.
12. Courses taken at any higher education institution where the course content is remedial are not acceptable for degree credit.
13. The student should be prepared to submit course descriptions, syllabi, or other course-related information for transfer course work if there is any question as to whether Walton College will grant degree credit for such work.
14. Exceptions: All requests for, exceptions to, and variations from the rules, regulations, and requirements of Walton College and the university should be made in writing to the executive director for undergraduate programs of Walton College. Consult the Undergraduate Programs Office in Walton College for these requests.

## Course Loads

The normal course load in Walton College is 15 to 17 hours per semester (and six hours per summer term). Students with a 2.75 grade-point
average the previous semester may take a maximum of 18 hours. Seniors may take 18 to 19 hours, if required for graduation, during their final semester. Students on academic warning are limited to a maximum course load of 12 hours. University regulations on the number of hours allowed per semester are found in the Orientation and Registration section of this catalog.

## Foreign Language Concentration

An undergraduate B.S.B.A. degree-seeking student may elect to substitute 12 hours in a single upper-level foreign language for 12-15 hours of the 12-15 hours required in the junior-senior business elective block of courses for the degree requirements. Students who choose to use 12 hours of foreign language, but who are pursuing majors requiring 15 hours of junior-senior business electives, must take an additional 3 hour junior-senior business elective to satisfy degree requirements.

## Double Major

A student may elect to obtain a double major by completing all required courses for two majors in Walton College (but not in two concentrations within a single major). The minimum hour requirement for a double major is 138 degree credit hours to include all requirements for both majors. If there are courses common to both majors, academic advisers will specify additional requirements in lieu of the common courses. The junior/senior business elective block can be reduced by three hours; however, choice of the junior/senior business electives is restricted to no more than three total hours from each department that offers the two majors. Students who have elected to substitute a foreign language course of study for junior/senior business electives must complete 12 hours of junior/senior language courses.

The student must notify the Undergraduate Programs Office in Walton College of intent to pursue a double major. All requirements for double majors must be completed prior to awarding of a degree.

## Business Minors

The Walton College offers a variety of minors for students desiring specific knowledge in another area of business (outside their major) to assist them in their business careers. Students may elect to obtain a business major and a business minor by completing all required courses for both the major and the minor in the Walton College (but not a major and minor within the same discipline). Students must complete all requirements for both the major and the minor and may not use more than six hours of major courses toward minor requirements. If there are common courses to both, the department chairs involved will agree upon and specify additional requirements. Business minors require the completion of 15 specific hours of study and all upper level courses applied toward the minor must be taken in residence.

Students may elect to obtain multiple business minors by completing all required courses for all minors in the Walton College (but not minors within the same discipline). Students must complete all requirements for minors and may not use more than three hours of courses toward each of the minor requirements. However, if there are common courses to both, the department chairs involved will agree upon and specify additional requirements.

Students who desire to earn a business minor must notify the Walton College Undergraduate Programs Office of their intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites
must be met. Each students must have a 2.00 cumulative GPA in the courses offered for the minor.

## Additional Bachelor's Degrees

Students seeking a second bachelor's degree must contact the Undergraduate Programs Office to ascertain specific requirements. Degree candidates must meet the university's general graduation requirements. The university requires that 1) the student take a minimum of 30 semester hours over the requirements for the first degree, and 2) the 30 hours cover a minimum of 36 weeks in residency at the Fayetteville campus. Walton College also requires that the student complete all courses in the pre-business and business core and the major and any additional business requirements (if some of these have been completed on the first degree, they are waived). It is recommended that any additional courses needed to finish the university's 30-hour requirement be junior or senior business electives. The second degree may be taken after the first is awarded, or both degrees may be awarded simultaneously after completion of all requirements for both.

## College Graduation Requirements

1. University Requirements. Degree candidates must meet the following: the university's general entrance requirements, number of credit hours required in residence, and the "requirements for graduation," including the State Minimum Core American history.
2. Hour Requirements. Degree candidates must satisfactorily complete the total number of semester hours specified for the curriculum in courses approved for one of the majors outlined in the succeeding pages. No less than 50 percent of the total credits must be in approved subjects other than business.
NOTE: Not all courses offered by the university will be accepted for degree credit by Walton College. Courses falling into this category are ENGL 0002, MATH 0001L, MATH 0002L, and MATH 0131L. Developmental courses are defined as 1) any course so designated by the university, and 2) any lower-division course taken after a higher-level course is taken. Credit will not be given for duplicate course work.
3. Grade Requirements. Students must earn a grade of "C" or better in all pre-business core course requirements. Each student must have a 2.00 cumulative GPA in each of the following areas:
a. All work completed at the University of Arkansas.
b. All courses specifically designated for the major.
c. All required business core courses and required economics courses.
4. General Education Course Work. A student's general education course work must satisfy State Minimum Core Requirements, additional college/program course-specific requirements, as well as these two area requirements:
a. Social Issues, Multicultural Environment, and Demographic Diversity, and
b. Micro and Macroeconomics. If a student has not satisfied these area requirements within the fine arts and/or social sciences areas of the university core, these area requirements must be satisfied through general education electives to allow students to complete degree requirements within the hours indicated above.

Courses that satisfy these area requirements are listed below. Many of these courses will also satisfy State Minimum Core Requirements. Where possible, a student should select courses that satisfy both requirements.
A. Social Issues, Multicultural Environment, and
Demographic Diversity
$\left.\begin{array}{lll}\text { ANTH 1023 } & \begin{array}{l}\text { Introduction to Cultural Anthropology (ACTS }\end{array} & 3 \\ & \text { Equivalency = ANTH 2013) (University Core) }\end{array}\right)$

Any Foreign Language (State Minimum Core, if 2000-level or above, general education elective otherwise)
Any Walton College study abroad course
B. Micro/Macro Economics

| ECON 2013 | Principles of Macroeconomics (ACTS | 3 |
| :--- | :--- | :--- |
|  | Equivalency = ECON 2103) (business core) |  |
| ECON 2023 | Principles of Microeconomics (ACTS | 3 |
|  | Equivalency = ECON 2203) (business core) |  |

5. Enrollment Requirement: Students must earn a minimum of 30 semester hours on the Fayetteville campus - this includes study abroad classes, online and courses offered through the Global Campus. Other courses paid toward Fayetteville campus tuition and fees may be used with approval. These 30 semester hours must include SEVI 3013, 21-24 hours of upper division courses required for the completion of the major, and 3-6 hours of additional upper division courses required for the degree program. Specifically, required junior and senior courses in business or economics must be taken at the University of Arkansas or at an AACSB accredited school. At least 50 percent of the total hours in business and economics must be taken in residence.
6. Catalog/Curriculum Changes. Business is a dynamic profession, and the college and department curricula are updated continuously to keep pace with changes in the business world. Students entering under this catalog will be required to comply with such curricular changes to earn their degree. The total number of hours required for the degree, however, may not be increased, and all work completed in accordance with this catalog prior to the curriculum change will be applied toward the student's degree requirements. Furthermore, courses incorporated into the curriculum at a level lower than the one the student has completed are not required for that student unless there are specific prerequisites. Students entering under earlier catalogs are responsible for completing the graduation requirements as published in the catalog in effect when they entered the program. Students having interruptions of their academic programs that exceed two calendar years must complete the requirements published in the catalog in effect when they re-enter the program. Exceptions to the graduation requirements must be approved by the executive director for undergraduate programs.

The Walton College offers an eight-semester degree-completion program. In each of the majors listed in this chapter, at least one eight-semester schedule is shown. Some majors offer several concentrations, and eightsemester programs are available for each of the concentrations.

See more about the university's Eight-Semester Degree Policy (p. 67).

## Graduate Studies

The University of Arkansas offers the following advanced degrees in business: Master of Accountancy, Master of Applied Business Analytics, Master of Business Administration, Master of Arts in Economics, Master of Information Systems, Master of Professional Accounting, Master of Science in Finance, Master of Science in Economic Analytics, Master of Science in Marketing, Master of Science in Supply Chain Management, Doctor of Philosophy in Business Administration, and Doctor of Philosophy in Economics.

For further information about these programs and requirements for admission, see the Graduate School Catalog or write to the assistant director of marketing and recruiting, Graduate School of Business, 475 Willard J. Walker Hall.

## Accreditations

The college has been a member of and accredited by AACSB International-The Association to Advance Collegiate Schools of Business since 1931. The accounting program was accredited separately in 1986 at both the bachelor's and master's level. The master's degree in the business administration program was approved in 1963. Accreditation by and membership in AACSB signifies commitment by the college to the goals of promoting and actualizing the highest standards of business education.

## Office of the Dean of the College

301 Business Building, 479-575-5949

## Dean

Matthew Waller
Senior Associate Dean
Anne O'Leary-Kelly
Associate Dean for Academic Programs and Research Alan Ellstrand

Associate Dean for Executive Education and Outreach Brent Williams

Senior Assistant Dean and Chief Student Officer Karen M. Boston

Assistant Dean for Finance and Administration Tanya A. Russell

## Undergraduate Programs Office <br> 328 Business Building, 479-575-4622

## Graduate School of Business

475 Walker Hall, 479-575-2851
World Wide Web: waltoncollege.uark.edu (http://waltoncollege.uark.edu/)
E-mail: connect@walton.uark.edu

Below majors, concentrations and minors are listed the college's cooperative education program.

## Majors, Minors and Certificates Majors with Concentrations

- Accounting (p. 689)
- Data Science (p. 95) (interdisiplinary)
- Accounting Analytics
- Business Data Analytics
- Supply Chain Analytics
- Economics (p. 634)
- Business Economics
- International Economics and Business
- Finance (p. 641)
- Banking
- Energy Finance
- Financial Management/Investment
- Real Estate
- Risk Management
- General Business (p. 620)
- Information Systems (p. 658)
- Blockchain Enterprise Systems
- Business Analytics
- Enterprise Resource Planning
- Innovation and Entrepreneurship (p. 685)
- International Business (p. 620)
- Management (p. 670)
- Human Resource Management
- Organizational Leadership
- Marketing (p. 676)
- Retail (p. 681)
- Supply Chain Management (p. 667)


## Minors

For students majoring in a Walton College discipline, the following minors are available:

- Accounting (p. 689)
- Behavioral Economics (p. 634)
- Blockchain Enterprise Systems (p. 634)
- Business Analytics (p. 658)
- Business Economics (p. 634)
- Data and Cybersecurity Management (p. 695)
- Enterprise Resource Planning (p. 693)
- Finance (p. 641)
- Financial Economics (p. 693)
- Information Systems (p. 658)
- Innovation and Entrepreneurship (p. 687)
- International Business (p. 620)
- Management (p. 670)
- Marketing (p. 676)
- Nonprofit Studies (p. 693)
- Retail (p. 681)
- Supply Chain Management (p. 667)


## Minors in the J. William Fulbright College of Arts and Sciences

Students in Walton College may pursue an academic minor in the J . William Fulbright College of Arts and Sciences. Academic minors usually consist of 15 to 18 hours of course work. The available minors and course requirements are specified in the Fulbright College section of this catalog. Students must notify the Undergraduate Programs Office in Walton College of their intention to pursue a minor as early as possible. Walton College will certify that the requirements of the minor have been satisfied by graduation and, with the assistance of the Fulbright College, will advise students on the requirements to complete a minor. The minor will be designated on the student's transcript.

Courses that are part of the University Core Requirements or the additional General Education Requirements or any other non-business course that is part of a student's course of study may also be counted for credit in a minor. For example, ANTH 1023 Introduction to Cultural Anthropology, is a concentration in the B.S.B.A. social science block and can also be used to satisfy the requirements of the anthropology minor. Other courses in a minor can be counted as general education electives. Walton College economics majors in the business economics concentration or the international economics and business concentration may not obtain a Fulbright College minor in economics.

## Business Administration Minors for NonBusiness Students

Read about the options for non-business students to pursue business administration minors (p. 695).

## Undergraduate Certificates

- Cybersecurity and Data Management (p. 663)
- Diversity, Equity and Inclusion Management (p. 674) (DEIM)


## Other Programs

## Internships

Internships are opportunities for students to gain degree and non-degree related work experience prior to graduation. It is a planned, progressive educational strategy in which the student obtains work experience related to his or her academic major or minor and career goals. Participating students earn academic credit for their work experiences and are always paid by their employers. Students can maintain their status as full-time students while participating in an internship, even if their internship requires they spend a semester working full-time.

Walton College students are eligible for academic credit related to an internship if they have 1) completed the pre-business core and have obtained at least 60 hours of credit, 2) a cumulative grade-point average of 2.5 or better, and 3) a grade-point average of 2.5 or better for the last full-time term completed. Students may receive one hour of credit per semester for a job that requires 120 or more total hours worked or two hours of credit per semester for a job that requires 180 hours or more total hours worked. A maximum of six hours of degree credit may be awarded as a junior- senior-level business elective. Students may utilize credit toward major or minor course requirements as approved. Full-time students who work 240 or more total hours in an approved internship are eligible for three hours of academic credit per semester, or per full summer, provided they have a minimum GPA of 2.5 , as well as having received a GPA of at least 2.5 in the prior full-time semester.

Students may seek either to qualify a job they have found themselves for internship credit, or they may seek an employment opportunity through
the Walton Career Services, Willard J. Walker Hall 226. The employment opportunity may be either a full-time, off-campus work assignment that alternates with semesters spent on campus taking courses (an alternating internship), or it may be a part-time job undertaken concurrently with course work (a parallel internship). Once a student has been matched with an approved job, the internship coordinator, the faculty advisor, the student's work place supervisor, and the student work together to formulate career-related learning objectives for the coming semester of work. These objectives must be in writing and in to the internship coordinator or faculty advisor in order for a student to be registered for internship credit. At the end of each semester of work, the student is required to submit a three- to ten-page paper (depending on credit hours to be received) that re-states the student's learning objectives for the semester and discusses how the job experience fulfilled the objectives. The student is also required to submit an employer evaluation form, and the work supervisor is asked to submit an evaluation of the student's work.

For information on participating in Walton College internship programs, a current listing of internship opportunities, and phone numbers of people with whom you may discuss these opportunities, visit the Career Services home page at waltoncollege.uark.edu (http://waltoncollege.uark.edu/ coop/).

## Honors Program

Walton College honors program consists of two components: the fouryear Walton Scholars Program and the Departmental Scholars Program. Students participating in the honors program will be eligible to graduate cum laude, magna cum laude, or summa cum laude. Students who do not participate in the honors program are eligible to graduate with distinction, a classification separate from the cum laude awards. Honors program students will receive priority for participation in the Arkansas Cooperative Education Program, SAKE, the portfolio management class, and financial support for study-abroad programs. They also have access to an honors study area.

## Graduation with Honors

The bachelor's degree summa cum laude (with highest honors), magna cum laude (with high honors), or cum laude (with honors) may be conferred only upon those students who have successfully completed the Walton College Honors Program. Both Walton Scholars and Departmental Scholars are eligible for these designations. Students whose cumulative grade-point average place them in the top 10 percent of their graduating class but who have not completed the Honors Program are eligible for the designation "With Distinction" on their official transcript. Among those students completing the Honors Program, the designations summa cum laude, magna cum laude and cum laude shall be determined as follows:

- Top 20 percent of students completing the Honors Program: Summa Cum Laude
- Next 30 percent of students completing the Honors Program: Magna Cum Laude
- Next 50 percent of students completing the Honors Program: Cum Laude

No honors degree will be conferred upon a candidate who has not completed at least 50 percent of his or her degree work at the University of Arkansas or who, in the last four semesters of attendance, has a cumulative grade-point average of less than 3.00 or has received a "D" or " $F$ " in any course in the last semester. Certain other requirements will be outlined on request by the associate dean for undergraduate studies.

## Eligibility for the Honors Program

Admission will be offered to incoming freshmen with a minimum ACT/ SAT score of $28 / 1240$ or higher and a high school GPA of 3.75 . Honors students are required to maintain a cumulative GPA of 3.75 with no grades of " $D$ " or " F " in any course to remain in the program. All honors students are required to meet with the associate or assistant director for honors programs each semester to monitor progress of honors requirements. Students who maintain a GPA of 3.75 but do not complete honors requirements in a timely manner are subject to removal from the Honors Program at the discretion of the director of the honors program.

## Probation Guidelines

a. Honors Enrollment Exceptions

If students are admitted into the Walton Honors program as firstsemester freshmen with the qualifying criteria ( 3.75 minimum HS GPA and 28 ACT/1310 SAT), and have their HS GPA recalculated to be lower than the qualifying criteria after successful admission, those students will be placed on a one-semester probation during their first semester at the University of Arkansas.
b. First Time on Probation Students

Members of the Walton Honors program must maintain a cumulative GPA of 3.75 or higher. Should a student's GPA fall below 3.75 , that student will be placed on honors probation for the following semester. During this probationary period, the student will retain the privileges of membership in the Walton Honors Program and Honors College, and they will have the chance to raise their cumulative University of Arkansas GPA to 3.75 . If at the end of the probationary semester the student's cumulative GPA remains below 3.75 , the student will be removed from the Walton Honors program and the Honors College.

## Requirements for Walton Scholars Program:

1. Complete 21 hours in honors courses with a minimum of 9 hours completed from the following honors business courses: ACCT 2013H, ACCT 2023H, BLAW 2013H, ECON 2013H, ECON 2023H, ISYS 2103H, MGMT 2103H, MKTG 3433H, SCMT 2103H, BUSI 1033H or FINN 2043H (excluding BUSI 1111H). The remaining honors hours may be selected from the State Minimum Core. Completing honors courses in the Fulbright College will fulfill this requirement. MATH 2564 may be used as honors credit towards completion of the 21 required honors hours. Students must complete a minimum of 12 honors hours within the first 30 hours at the Fayetteville campus.
2. Students must also complete MATH 2554 with a grade of "C" within the first 45 hours at the Fayetteville campus prior to taking upper level business classes.
3. Complete the following honors courses in Walton College:
a. Two 3-hour colloquium courses chosen from the following: BUSI 3003H (may be repeated for up to 6 hours of credit), ACCT 4003H, ACCT 4123H, ECON 4003H, FINN 4003H, MKTG 4003H, SCMT 4003H, SEVI 4003H, HNRC 300VH, HNRC 301 VH , or HNRC 4013H (or other honors colloquium courses (3000/4000 level only) offered in other colleges with approval of the Honors Director). The following courses may be repeated for up to 6 hours of credit with prior approval: BUSI 3003H, ACCT 4003H, ECON 4003H, FINN 4003 H, MKTG 4003H, SCMT 4003H, SEVI 4003H. At least 3 hours of honors colloquium courses must be from the Walton College. Any course outside the Walton College would ordinarily count toward fulfilling general education electives and would not count toward junior/senior business elective credit.
b. A three-hour thesis (BUSI 499VH): The thesis is a major independent writing project under the leadership of a Walton College or University of Arkansas faculty member and arises from a research project, business plan, business competition, or internship.
4. Complete an alternate honors capstone course SEVI 3013H Honors Strategic Management, which should be completed within the first 90 hours at the Fayetteville campus.

## Requirements for the Departmental Scholars program:

Admission to the Honors Program as a departmental scholar will only be offered to current University of Arkansas students who have established a cumulative GPA of 3.75 upon completion of their freshmen year at the University of Arkansas. Transfer students may also apply upon completion of one semester at the University of Arkansas with a GPA of 3.75. All students must complete an application to be considered for acceptance into the departmental scholars program.

1. Complete 12 hours of honors courses to be selected from prebusiness core or State Minimum Core. MATH 2564 may be used as honors credit towards completion of the 12 required honors hours.
2. Students must also complete MATH 2554 with a grade of "C" or better within the first 60 hours at the Fayetteville campus and prior to taking upper level business courses.
3. Complete the following courses in Walton College::
a. Two 3-hour colloquium courses chosen from the following: BUSI 3003H (May be repeated for up to 6 hours of credit), ACCT 4003 H, ACCT 4123 H , ECON 4003 H , FINN 4003 H , MKTG 4003 H , SCMT 4003 H , SEVI 4003H, HNRC 300VH, HNRC 301VH, HNRC 4013H(or other honors colloquium courses (3000/4000 level only) offered in other colleges with approval of the Honors Director). The following courses may be repeated for up to 6 hours of credit with prior approval: BUSI 3003H, ACCT 4003 H, ECON 4003 H , FINN 4003H, MKTG 4003H, SCMT 4003H, SEVI 4003H. At least 3 hours of honors colloquium courses must be from the Walton College. Any course outside of the Walton College would count toward fulfilling general education electives and would not count toward junior/senior business elective credit.
b. A three-hour thesis (BUSI 499VH): The thesis is a major independent writing project under the leadership of a Walton College or University of Arkansas faculty member and arises from a research project, business plan, business competition, or internship.
4. Complete the honors capstone course SEVI 3013H Honors Strategic Management, which should be completed within the first 90 hours at the Fayetteville campus.

## Academic Integrity Policy for Honors Students

All Walton College honors students are held to the highest standard with regard to academic achievement and academic integrity. Students violating the Academic Integrity Policy that receive a sanction of 1.0 or greater at the University of Arkansas will be permanently removed from the Walton College Honors Program without the ability to reapply. The student may appeal the decision to the University's Academic Integrity Board; if the sanction is overturned and removed, the student will be reinstated into the Walton College Honors Program.

## B.S.B.A. Requirements

The Bachelor of Science in Business Administration (B.S.B.A.) degree is offered through an educational program in the business and organizational disciplines intended to prepare individuals to make sustained contributions to organizations and society in a global, diverse, and dynamic environment. To achieve this objective the curriculum focuses on developing an individual's interdisciplinary problem-solving skills, interpersonal and communication skills, ability to adapt to changing technology, spirit of entrepreneurial innovation, and ethical and professional values.

Walton College offers work in the following nine majors for the B.S.B.A. degree. Some majors have concentrations to allow additional specialization.

1. Accounting (p. 689) (ACCT)
2. Business Economics (p. 634) (BECO)
a. Business Economics
b. International Economics and Business
3. Finance (p. 641) (FINN)
a. Banking
b. Financial Analytics
c. Financial Management/Investment
d. Real Estate
e. Risk Management
4. General Business (p. 670) (GBUS)
5. Information Systems (p. 658) (ISYS)
a. Blockchain Enterprise Systems
b. Business Analytics
c. Enterprise Resource Planning
6. Management (p. 670) (MGMT)
a. Human Resource Management
b. Organizational Leadership
7. Marketing (p. 676) (MKTG)
8. Retail (p. 676) (RETL)
9. Strategy, Entrepreneurship and Venture Innovation (p. 685) (SEVI)
10. Supply Chain Management (p. 667) (SCMT)

## Requirements for B.S.B.A. Degree

Students pursuing a degree in Walton College are classified as prebusiness with an intended major until all pre-business requirements are fulfilled. To enroll in upper-division courses, a student must obtain at least a 2.50 (on a 4.00 scale) overall grade-point average in addition to the completion of all pre-business core courses (or equivalents), also with a minimum 2.50 GPA. Further, a student must earn a grade of " $C$ " or better in each pre-business core course for admission into the major or for the graduation requirement.
A. State Minimum Core Requirements ${ }^{1}$
U.S. History or Government

Laboratory Science (two courses with labs)
Social Sciences (one course)
Fine Arts and Humanities (two courses)
B. Pre-Business Core Courses

ACCT 2013 Accounting Principles ${ }^{2}$
ACCT 2023 Accounting Principles II ${ }^{2}$
or SEVI 205:Business Foundations

COMM 1313 Public Speaking (ACTS Equivalency $=$ SPCH 1003) ${ }^{2}$

| ECON 2013 | Principles of Macroeconomics (ACTS Equivalency = ECON 2103) ${ }^{2}$ |
| :---: | :---: |
| ECON 2023 | Principles of Microeconomics (ACTS Equivalency = ECON 2203) ${ }^{2}$ |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) ${ }^{2}$ |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) ${ }^{2}$ |
| MATH 2043 | Survey of Calculus (ACTS Equivalency = MATH 2203) ${ }^{2}$ |
| MATH 2053 | Finite Mathematics ${ }^{2}$ |
| BUSI 1111 | Freshman Business Connection ${ }^{2}$ |
| BUSI 1033 | Data Analysis and Interpretation ${ }^{2}$ |
| ISYS 1123 | Business Application Knowledge - Computer Competency ${ }^{2}$ |
| C. Business Core | 21 |
| BLAW 2013 | The Legal Environment of Business (ACTS Equivalency = BLAW 2003) |
| ISYS 2103 | Business Information Systems |
| FINN 2043 | Principles of Finance |
| MGMT 2103 | Managing People and Organizations |
| SEVI 3013 | Strategic Management |
| MKTG 3433 | Introduction to Marketing |
| SCMT 2103 | Integrated Supply Chain Management |
| D. Junior-Senior Business Electives |  |
| E. Major Courses and Concentration Hours |  |
| F. General Education Electives ${ }^{3}$ |  |

## Total Hours

120${ }^{1}$ The additional 15 hours required for University Core are met with the completion of Pre-Business and Business Core. These courses are denoted in bold within the course list.
2 Pre-Business requirement: These 34 hours must be completed with a GPA of 2.50 , an overall GPA of 2.5 , and a grade of "C" or better in each course before a student is allowed to take upper-division business courses. Students intending to pursue a major or minor in Accounting or Finance must complete ACCT 2023.
3 A total of 9 hours of general education electives are required for the Bachelor of Science in Business Administration (B.S.B.A.). General education electives should be non-business courses but may include up to six total hours of business courses and no more than three hours of PEAC or DEAC courses. Students may utilize general education electives to complete a minor outside the Walton College. In addition, these electives may fulfill requirements for Social Issues, Multicultural Environment, and Demographic Diversity if not otherwise completed in the University Core.

In addition to the core courses, each student will complete the required pre-business and business courses, junior- senior-level business electives, and major courses as specified by each major.

Each student must have a 2.00 cumulative grade-point average in each of the following areas: all work completed at this university, all courses specifically designated for the major, and all required Walton College core
and economics courses. Students must earn a grade of "C" or better in each of the pre-business core courses.

## Online B.S.B.A.

The Sam M. Walton College currently offers three undergraduate online degree programs. Business students may pursue an Online B.S.B.A. or minor in the areas of Accounting, General Business and Supply Chain Management. The Walton College Online B.S.B.A. degrees are intended to provide students the opportunity to enroll in a four-year degree program online. In addition, the online degrees afford students who have completed an Associate's Degree in Business or those who are near completion of their business degree, the option to complete a B.S.B.A. with a major in General Business.

For more information, read more on the program pages:

- Online Accounting B.S.B.A. (p. 689)
- Online General Business B.S.B.A. (p. 652)
- Online Supply Chain Management B.S.B.A. (p. 667)

Online Minors for Business Students: Walton College majors may pursue online minors in Accounting (p. 691) and Supply Chain Management (p. 667).

Online Minors for Non-Business Students: Non-business students may also pursue online minors in Accounting, General Business and Supply Chain Management. For more information, visit the Minors for Non-Business Students page (p. 695).

## B.S.I.B. Requirements

The Bachelor of Science in International Business degree is intended for students who wish to learn more about the international aspects of business. It provides preparation for a broad range of careers in business, including accounting, management, marketing, economics, information systems, finance, retail, and supply chain management. This degree is also well suited for students wishing to continue their studies in law, international affairs, or graduate education in business and economics.

This degree requires completion of the University Core and Walton College Core courses, as well as course work in international business, a single foreign language and an area of study related to that language. In addition, students must select a concentration in one of the following areas: accounting, business economics, information systems, finance, general business, management, marketing, retail or supply chain management.

Students pursuing a degree in the Sam M. Walton College of Business are classified as pre-business with an intended concentration until all pre-business requirements are fulfilled. For admission into the intended concentration, a student must obtain at least a 2.50 (on a 4.00 scale) overall grade-point average, in addition to the completion of all prebusiness core courses listed elsewhere in the catalog (or equivalents), also with a minimum 2.50 grade-point average. Further, a student must earn a grade of " $C$ " or better in each of the pre-business core courses for admission into the major or for the graduation requirement.

The International Business degree program has eight concentrations:

- Accounting
- Business Economics
- Finance
- General Business
- Information Systems
- Management
- Marketing
- Retail
- Supply Chain Management

In the eight-semester degree program for each concentration, the first four semesters of each of concentration are exactly the same.

## Graduation Requirements for the B.S.I.B. Degree

Each student must have a 2.00 cumulative grade-point average in each of the following areas: all work completed at this university, all courses in the business core, and all designated international business courses/ functional concentration/world language courses. In addition, students must earn a grade of " $C$ " or better in each of the pre-business core courses.

Courses that are required in either Walton College or the international business core and also are required in one of the business concentrations cannot be used to satisfy both requirements. For example, students who take FINN 3703 to satisfy the finance concentration requirements cannot also use it to satisfy the international business requirements.
A. State Minimum Core Requirements

Not including contributing courses in the Business Core or the World Languages Requirement
American History or Government
Laboratory Science (two courses with labs)
Social Science (one course)
Fine Arts (one course)
B. Pre-Business Core Courses ( 34 hours)

| ACCT 2013 | Accounting Principles | 3 |
| :--- | :--- | :--- |
| ACCT 2023 | Accounting Principles II ${ }^{1}$ | 3 |

or SEVI 2053 Business Foundations
$\begin{array}{lll}\text { COMM 1313 } & \begin{array}{l}\text { Public Speaking (ACTS Equivalency }=\text { SPCH } \\ \text { 1003) }\end{array} & 3 \\ \text { ECON 2013 } & \text { Principles of Macroeconomics (ACTS Equivalency } & 3\end{array}$ = ECON 2103)
ECON 2023 Principles of Microeconomics (ACTS Equivalency 3 = ECON 2203)
ENGL 1013 Composition I (ACTS Equivalency $=$ ENGL 1013) 3
ENGL 1023 Composition II (ACTS Equivalency $=$ ENGL 1023) 3
MATH $2043 \quad$ Survey of Calculus (ACTS Equivalency $=$ MATH 3 2203)

MATH 2053 Finite Mathematics 3
BUSI 1111 Freshman Business Connection 1

BUSI 1033 Data Analysis and Interpretation 3
ISYS 1123 Business Application Knowledge - Computer 3 Competency
C. Business Core ( 21 hours)
BLAW 2013 The Legal Environment of Business (ACTS 3

Equivalency = BLAW 2003)
ISYS 2103 Business Information Systems 3
FINN 2043 Principles of Finance 3
MGMT 2103 Managing People and Organizations 3
SEVI 3013 Strategic Management 3

| MKTG 3433 | Introduction to Marketing | 3 |
| :---: | :---: | :---: |
| SCMT 2103 | Integrated Supply Chain Management | 3 |
| D. International Business Course Requirements |  | 15 |
| ECON 4633 | International Trade |  |
| ECON 4643 | International Macroeconomics and Finance |  |
| Select three of the following: |  |  |
| ECON 3843 | Economics of the Developing World |  |
| ECON 3853 | Emerging Markets |  |
| ECON 3933 | The Japanese Economic System |  |
| ECON 4173 | Nation Model United Nations |  |
| FINN 3703 | International Finance |  |
| SEVI 4583 | International Management |  |
| MKTG 4633 | Global Marketing |  |
| SCMT 3643 | International Logistics |  |
| (Other 3000/4 approved by | 000 level courses may fulfill this requirement if e department chair) |  |

${ }^{1}$ Students pursuing a concentration in Accounting or Finance must complete ACCT 2023.

## E. World Language Requirements (9 hours)*

Students whose native language is English or whose native language is not taught at the University of Arkansas must complete nine hours of university course work in a single world language - three hours of intermediate language and six hours of upper-division course work in communications and business language, or equivalent. Based on prior knowledge of language, students may receive degree credit for courses if they validate their higher placement by passing the business language course (or equivalent) with a grade of "C" or above. Students with no previous world language training or only rudimentary knowledge of a world language will be required to complete up to nine hours of additional world language requirements - in addition to the nine hours of specified language. No degree credit will be given for world language courses below 2003 course level. Students may select one of the following language tracks:

## Arabic

ARAB 2003 Intermediate Arabic I
ARAB 2016 Immersive Arabic II
ARAB 2016H Honors Immersive Arabic II
ARAB 3016 Immersive Arabic III
ARAB 3016H Honors Immersive Arabic III
Any upper level ARAB course

## Chinese

| CHIN 2003 | Intermediate Chinese I |
| :---: | :--- |
| CHIN 2013 | Intermediate Chinese II |
| CHIN 3003 | Advanced Chinese |
| CHIN 3033 | Conversation |
| Any upper level CHIN course |  |
| French |  |
| FREN 2003 | Intermediate French I (ACTS Equivalency = FREN |
|  | 2013) |
| FREN 2013 | Intermediate French II (ACTS Equivalency = FREN |
| FREN 3003 | 2023) |

FREN 4333 Introduction to Business French
Any upper level FREN course

## German

| GERM 2003 | Intermediate German I (ACTS Equivalency = <br> GERM 2013) |
| :--- | :--- |
| GERM 2013 | Intermediate German II (ACTS Equivalency = |
|  | GERM 2023) |
| GERM 3003 | Advanced German I |
| GERM 3033 | Conversation |
| GERM 4333 | Professional German I |
| alian |  |
| ITAL 2003 | Intermediate Italian I |
| ITAL 2013 | Intermediate Italian II |
| ITAL 3033 | Italian Conversation |
| ITAL 4033 | Advanced Italian Conversation |

Any upper level ITAL course

## Japanese

JAPN 2003 Intermediate Japanese I
JAPN 2013 Intermediate Japanese II
JAPN 2013H Honors Intermediate Japanese II
JAPN 3033 Advanced Japanese Conversation
JAPN 3033H Honors Advanced Japanese Conversation
JAPN 3103
JAPN 3103H
JAPN 3116 Intensive Advanced Japanese
JAPN 3116H Honors Intensive Advanced Japanese
Any upper level JAPN course
Russian
RUSS 2003 Intermediate Russian I
RUSS 2013 Intermediate Russian II
RUSS 3003 Advanced Russian I (May be repeated for up to six hours of degree credit)
Any Upper Level RUSS course
Spanish
SPAN 2003 Intermediate Spanish I (ACTS Equivalency = SPAN 2013)
SPAN 2013 Intermediate Spanish II (ACTS Equivalency = SPAN 2023)
SPAN 2013H Honors Intermediate Spanish II
SPAN 3003 Advanced Spanish
SPAN 3033 Conversation and Composition
SPAN 4333 Business Spanish I
Any upper level SPAN course
Students whose native language is not English but is taught at the University of Arkansas must select a third language from the list above or substitute six hours of upper-division English language courses (i.e., speech, writing, or U.S. literature), to be selected with the consent of an adviser and department chair. Those students whose native language is not taught at the University of Arkansas will normally be required to select a third language.

## F. Area Studies Requirements (6 hours)*

For students taking a world language, six hours of upper-division coursework in the Fulbright College of Arts and Sciences are required. Domestic students can satisfy this requirement in one of three ways:

1. Any upper division foreign language course,
2. Minor in a foreign language, and/or
3. Select upper division courses related to the world language to include:
a. Arabic - any upper division course for Middle Eastern Studies (MEST) to include MEST 4003, MEST 4003H or additional courses listed under MEST in the university catalog
b. Chinese/Japanese/Asian Studies - any upper division course for Asian Studies (AIST)
c. French - any upper division course for EUST
d. German - any upper division course for EUST Italian - any upper division course for EUST
e. Russian - any upper division elective courses for Russian Studies minor, RUSS 4113/WLIT 4113 and RUSS 4133/WLIT 4133
f. Spanish - any upper division course for Latin American Studies (LALS) to include LALS 4003, LALS 4003H, or additional courses listed under LALS in the university catalog.

International students may satisfy this requirement in one of two ways:

1. For students who choose to take a third language, area studies requirements are the same as those for domestic students.
2. Students may choose to take six hours of upper division English (ENGL) coursework in the Fulbright College of Arts and Sciences.

## G. International Experience Requirement

At a minimum, a student must complete a study abroad program approved by the Walton College of at least four weeks and six credit hours, or work abroad, or work with the international division of a domestic company as part of their program. Students are strongly encouraged, but not required, to seek job experience in a company located in a country related to their foreign language requirement. International students may elect to meet this requirement by working in their home country by obtaining prior approval from their adviser and department chair.

## H. Concentrations (18 hours)

Students must take six courses in one of the following concentrations: Accounting
Business Economics
Finance
General Business
Information Systems
Management
Marketing
Retail
Supply Chain Management
Each concentration requires 3 hours of interdisciplinary electives.

[^9]
## Accounting Concentration

| ACCT 3723 | Intermediate Accounting I | 3 |
| :--- | :--- | :--- |
| ACCT 3753 | Intermediate Accounting II | 3 |
| ACCT 3843 | Fundamentals of Taxation I | 3 |
| Three hours Junior/Senior Interdisciplinary Electives | 3 |  |
| Choose two of the following three courses: |  | 6 |
| ACCT 3533 | Accounting Technology |  |
| ACCT 4673 | Product, Project and Service Costing |  |
| ACCT 4963 | Audit and Assurance Services |  |

## Total Hours

In the eight-semester degree programs of each concentration, the first four semesters are exactly the same. In addition to the coursework listed below, students must complete an International Experience Requirement. Courses in BOLD must be taken in the semester designated. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

## International Business B.S.I.B. with Accounting Concentration Eight-Semester Degree Program

Students who wish to pursue the eight-semester degree program should see the Eight-Semester Degree Policy (p. 67) for requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Intermediate World Language I (2003/2013 level) (Satisfies General Education Outcome 3.2) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{3}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS |  | 3 |
| Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 \& 5.1$)^{3}$ |  |  |
| Foreign Language (3000 level or higher) |  | 3 |
| Year Total: | 16 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles II ${ }^{3}$ | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |

ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203)
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Foreign Language course ( 3000 level or higher)
ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisfies General Education
Outcome 1.1)
Fine Art - State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{4}$
Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{5}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency $=$ ECON 2103) ${ }^{3}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
Area Studies Course
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{3}$
All pre-business requirements should be met by end of term
Year Total:
Third Year
Fall

FINN 2043 Principles of Finance ${ }^{2} 3$
MKTG 3433 Introduction to Marketing ${ }^{2}$ 3
ACCT 3723 Intermediate Accounting I 3
ACCT 3843 Fundamentals of Taxation I 3
International Business and Collateral Elective
ACCT 3753 Intermediate Accounting II
ACCT Elective
ISYS 2103 Business Information Systems ${ }^{2}$
ECON 4633 International Trade
Natural Science State Minimum Core (Satisfies
General Education Outcome 3.4)
Year Total:

| Fourth Year | Fall |
| :--- | ---: |
| ECON 4643 International Macroeconomics and | 3 |
| Finance |  |
| International Business and Collateral Elective | 3 |
| Area Studies Course | 3 |
| Natural Science State Minimum Core (Satisfies | 4 |
| General Education Outcome 3.4) | 3 |
| U.S. History or Government State Minimum Core | 3 |
| (Satisfies General Education Outcome 4.2) |  |

## Units

Spring



| SEVI 3013 Strategic Management (Satisfies |  | 3 |
| :--- | ---: | ---: |
| General Education Outcome 6.1) |  |  |
| International Business and Collateral Elective | 3 |  |
| Junior/Senior Business Electives |  | 3 |
| Year Total: | 16 | 12 |

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business electives.
4 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013 H .
5 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, SOCI 20 or SOCI 2033.

## Business Economics Concentration

| ECON 3033 | Microeconomic Theory | 3 |
| :--- | :--- | ---: |
| ECON 3133 | Macroeconomic Theory | 3 |
| ECON 4333 | Economics of Organizations | 3 |
| ECON 4743 | Introduction to Econometrics | 3 |
| Junior/Senior Economics Electives | 6 |  |
| Total Hours | $\mathbf{1 8}$ |  |

In the eight-semester degree programs of each concentration, the first four semesters are exactly the same. In addition to the coursework listed below, students must complete an International Experience Requirement. Courses in BOLD must be taken in the semester designated. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

## International Business B.S.I.B. with Business Economics Concentration Eight-Semester Degree Program

Students who wish to pursue the eight-semester degree program should see the Eight-Semester Degree Policy (p. 67) for requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Intermediate World Language (2003/2013 level) (Satisfies General Education Outcome 3.2) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,2,4}$ | 3 |  |


| SCMT 2103 Integrated Supply Chain Management ${ }^{3}$ | 3 |
| :---: | :---: |
| BUSI 1111 Freshman Business Connection ${ }^{4}$ | 1 |
| MGMT 2103 Managing People and Organizations ${ }^{3}$ | 3 |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{2,4}$ | 3 |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$ |  |
| ACCT 2013 Accounting Principles ${ }^{4}$ |  |
| BUSI 1033 Data Analysis and Interpretation ${ }^{4}$ |  |
| COMM 1313 Public Speaking (ACTS <br> Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1$)^{4}$ |  |
| Foreign Language (3000 level or higher) |  |
| Year Total: | 16 |
| Second Year |  |
|  | Fall |
| ACCT 2023 Accounting Principles II ${ }^{4}$ or SEVI 2053 Business Foundations | 3 |
| Satisfies General Education Outcome 3.3: |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) ${ }^{4}$ <br> or ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) | 3 |
| Foreign Language course (3000 level or higher) | 3 |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{4}$ | 3 |
| Fine Art - State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{5}$ | 3 |
| Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{6}$ |  |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) ${ }^{4}$ |  |
| Satisfies General Education Outcome 3.3: |  |
| ECON 2013 Principles of Macroeconomics (ACTS <br> Equivalency = ECON 2103) ${ }^{4}$ <br> or ECON 2023 Principles of Microeconomics <br> (ACTS Equivalency = ECON 2203) |  |
| Area studies course |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{4}$ |  |
| All pre-business requirements should be met by the end of term. |  |
| Year Total: | 15 |
| Third Year |  |
|  | Fall |
| FINN 2043 Principles of Finance ${ }^{3}$ | 3 |
| MKTG 3433 Introduction to Marketing ${ }^{3}$ | 3 |
| ECON 3033 Microeconomic Theory | 3 |


| Junior/Senior Economics Elective | 3 |  |
| :---: | :---: | :---: |
| US History or Government State Minimum Core (Satisfies General Education Outcome 4.2) | 3 |  |
| ECON 3133 Macroeconomic Theory | 3 |  |
| ECON 4743 Introduction to Econometrics | 3 |  |
| ECON 4633 International Trade | 3 |  |
| ISYS 2103 Business Information Systems ${ }^{3}$ |  |  |
| Natural Science State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| Year Total: | 15 | 16 |
| Fourth Year | Units |  |
|  | Fall Spring |  |
| ECON 4333 Economics of Organizations | 3 |  |
| ECON 4643 International Macroeconomics and Finance | 3 |  |
| Area Studies Course | 3 |  |
| Natural Science State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| International Business Elective | 3 |  |
| Junior/Senior Economics elective | 3 |  |
| International Business Electives |  | 6 |
| SEVI 3013 Strategic Management (Satisfies | 3 |  |
| General Education Outcome 6.1) |  |  |
| Year Total: | 16 | 12 |
| Total Units in Sequence: | 120 |  |
| ${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1 by meeting the prerequisites for MATH 2053. <br> 2 3 <br> be completed prior to SEVI 3013. <br> ${ }^{4}$ Must be completed prior to taking any 3000 or 4000 level business courses. <br> 5 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H. <br> 6 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, SOCI 2013, SOCI 2013H, or SOCI 2033. |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## Finance Concentration

$\left.\begin{array}{llr}\text { FINN 3013 } & \text { Financial Analysis } & 3 \\ \text { FINN 3053 } & \text { Financial Markets and Institutions } & 3 \\ \text { FINN 3703 } & \text { International Finance } & 3 \\ \text { FINN 3063 } & \text { Investments } & 3 \\ \begin{array}{ll}\text { or FINN 3603 }\end{array} & \text { Corporate Finance } & \\ \text { FINN 4133 } & \text { Advanced Investments } \\ \begin{array}{ll}\text { or FINN 4233 }\end{array} & \text { Advanced Corporate Finance }\end{array}\right]$

In the eight-semester degree programs of each concentration, the first four semesters are exactly the same. In addition to the coursework listed below, students must complete an International Experience Requirement. Courses in BOLD must be taken in the semester designated. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

## International Business B.S.I.B. with Finance Concentration <br> Eight-Semester Degree Program

Students who wish to pursue the eight-semester degree program should see the Eight-Semester Degree Policy (p. 67) for requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Intermediate World Language I (2003 level or higher) (Satisfies General Education Outcome 3.2) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1), ${ }^{1,2}$ | 3 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection | 1 |  |
| MGMT 2103 Managing People and Organizations ${ }^{3}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{2}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$ |  | 3 |
| ACCT 2013 Accounting Principles |  | 3 |
| BUSI 1033 Data Analysis and Interpretation |  | 3 |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) ((Satisfies General Education Outcomes 1.2 and 5.1) |  | 3 |
| Foreign Language (3000 level or higher) |  | 3 |
| Year Total: | 16 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles II | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency = ECON 2103) | 3 |  |
| Foreign Language course ( 3000 level or higher) | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| Fine Art - State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{5,6}$ | 3 |  |

Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203)
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
FINN 2043 Principles of Finance
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
All pre-business requirements should be met by end of term
Year Total: 15

| Third Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| MKTG 3433 Introduction to Marketing ${ }^{3}$ | 3 |  |
| ISYS 2103 Business Information Systems ${ }^{3}$ | 3 |  |
| FINN 3053 Financial Markets and Institutions | 3 |  |
| FINN 3013 Financial Analysis | 3 |  |
| U.S. History or Government State Minimum Core | 3 |  |
| (Satisfies General Education Outcome 4.2) |  |  |
| FINN 3063 Investments |  | 3 |
| or FINN 3603 Corporate Finance |  | 3 |
| FINN 3703 International Finance |  | 3 |
| ECON 4633 International Trade |  | 3 |
| Area Studies Course |  | 4 |
| Natural Science State Minimum Core (Satisfies | 15 | 16 |
| General Education Outcome 3.4) |  |  |
| Year Total: |  |  |

Fourth Year $\quad$ Fall | Units |
| ---: |
| Spring |

FINN 4133 Advanced Investments


ECON 4643 International Macroeconomics and
Finance
Area Studies Course
Natural Science State Minimum Core (Satisfies 4
General Education Outcome 3.4)
Junior/Senior Finance Elective
SEVI 3013 Strategic Management (Satisfies 3
General Education Outcome 6.1)
International Business and Collateral Elective 9
Year Total: 16

Total Units in Sequence:
120
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified in learning outcome 2.1, by meet the prerequisites for MATH 2053.
${ }^{2}$ Must be completed prior to BUSI 1033.
${ }^{3}$ Must be completed prior to SEVI 3013.
${ }^{4}$ Must be completed prior to taking any 3000 or 4000 level course.
${ }^{5}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, SOCI 2013, SOCI 2013H, or SOCI 2033.

## General Business Concentration

3000/4000-level courses in Walton College; no more than 9 hours in 15 a single academic area
Junior/Senior Interdisciplinary Electives 3
Total Hours

In the eight-semester degree programs of each concentration, the first four semesters are exactly the same. In addition to the coursework listed below, students must complete an International Experience Requirement. Courses in BOLD must be taken in the semester designated. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

## International Business B.S.I.B. with General Business Concentration <br> Eight-Semester Degree Program

Students who wish to pursue the eight-semester degree program should see the Eight-Semester Degree Policy (p. 67) for requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Intermediate World Language (2003/2013 level or higher) (Satisfies General Education Outcome 3.2) | 3 |  |
| MATH 2053 Finite Mathematics (State Minimum Core (Satisfies General Education Outcome 2.1) ${ }^{1,2,4}$ | 3 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{4}$ | 1 |  |
| MGMT 2103 Managing People and Organizations ${ }^{3}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{2,4}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{4}$ |  | 3 |

BUSI 1033 Data Analysis and Interpretation ${ }^{4} 3$
COMM 1313 Public Speaking (ACTS 3
Equivalency = SPCH 1003) (Satisfies General
Education Outcomes 1.2 and 5.1) ${ }^{4}$
Foreign Language (3000 level or higher)
Year Total: 16

Second Year Fall | Units |
| ---: |
| Spring |

Equivalency $=$ ECON 2203) ${ }^{4}$
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Foreign Language course (3000 level or higher)
ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{4}$
Fine Art - State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{5}$
Social Sciences - State Minimum Core (Satisfies
General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{6}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{4}$
Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency $=$ ECON 2103) ${ }^{4}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
Area Studies Course
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{4}$
ALL pre-business requirements should be met by end of term
Year Total: 15

Third Year \begin{tabular}{r}

Fall | Units |
| ---: |
| Spring |

\end{tabular}

SEVI 3013 Strategic Management (Satisfies
General Business Course ..... 3
3 U.S. History or Government State Minimum Core ..... 3
(Satisfies General Education Outcome 4.2)

| Fourth Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ECON 4643 International Macroeconomics and Finance | 3 |  |
| International Business Elective | 3 |  |
| General Business Elective | 3 |  |
| Area Studies Course | 3 |  |
| Natural Science State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| General Business Electives |  |  |
| International Business Elective |  |  |
| Natural Science State Minimum Core (Satisfies General Education Outcome 3.4) | $\begin{array}{rr} & 4 \\ 16 \quad 16\end{array}$ |  |
| Year Total: |  |  |
| Total Units in Sequence: |  | 120 |
| ${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053. <br> ${ }^{2}$ Must be completed prior to BUSI 1033. <br> ${ }^{3}$ Must be completed prior to SEVI 3013. <br> ${ }^{4}$ Must be completed prior to taking any 3000 or 4000 level business courses. <br> ${ }^{5}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H. <br> ${ }^{6}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, SOCI 2013, SOCI 2013H, or SOCI 2033. |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## Information Systems Concentration

| ISYS 2263 | Principles of Information Systems | 3 |
| :--- | :--- | ---: |
| ISYS 3293 | Systems Analysis and Design | 3 |
| ISYS 3393 | Business Application Development Fundamentals | 3 |
| ISYS 4283 | Business Database Systems | 3 |
| Three hours of Junior/Senior Information Systems Electives | 3 |  |
| Junior/Senior Interdisciplinary Electives | 3 |  |
| Total Hours | $\mathbf{1 8}$ |  |

In the eight-semester degree programs of each concentration, the first four semesters are exactly the same. In addition to the coursework listed below, students must complete an International Experience Requirement. Courses in BOLD must be taken in the semester designated. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

## International Business B.S.I.B. with Information Systems Concentration Eight-Semester Degree Program

Students who wish to pursue the eight-semester degree program should see the Eight-Semester Degree Policy (p.67) for requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Intermediate World Language (2003/2013 level or higher) (Satisfies General Education Outcome 3.2) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,2,4}$ | 3 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{4}$ | 1 |  |
| MGMT 2103 Managing People and Organizations ${ }^{3}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{2,4}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{4}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{4}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS |  | 3 |
| Equivalency = SPCH 1003) ((Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{4}$ |  |  |
| Foreign Language course (3000 level or higher) |  | 3 |
| Year Total: | 16 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles II ${ }^{4}$ or SEVI 2053 Business Foundations | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) ${ }^{4}$ <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency = ECON 2103) | 3 |  |
| Foreign Language course ( 3000 level or higher) | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{4}$ | 3 |  |
| Fine Arts - State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{5}$ | 3 |  |
| General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{6}$ |  |  |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) ${ }^{4}$ |  | 3 |
| Satisfies General Education Outcome 3.3: |  |  |

ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103) ${ }^{4}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ISYS 2103 Business Information Systems ${ }^{3}$
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1)
ALL pre-business requirements should be met by end of term
Year Total: 15

| Third Year |  |
| :--- | ---: |
|  | Fall |
| FINN 2043 Principles of Finance ${ }^{3}$ | 3 |
| MKTG $\mathbf{3 4 3 3}$ Introduction to Marketing ${ }^{3}$ | 3 |
| ISYS 2263 Principles of Information Systems | 3 |
| International Business Elective | 3 |
| U.S. History or Government State Minimum Core | 3 |

(Satisfies General Education Outcome 4.2)
ISYS 3293 Systems Analysis and Design
ISYS 3393 Business Application Development Fundamentals
SEVI 3013 Strategic Management (Satisfies
General Education Outcome 6.1)
ECON 4633 International Trade
Natural Science State Minimum Core (Satisfies
General Education Outcome 3.4)
Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ISYS 4283 Business Database Systems | 3 |  |
| ECON 4643 International Macroeconomics and | 3 |  |
| Finance |  |  |
| Area Studies Course | 3 |  |
| Natural Science State Minimum Core (Satisfies | 4 |  |
| General Education Outcome 3.4) |  |  |
| Junior/Senior Interdisciplinary Elective | 3 |  |
| Area Studies Courses |  | 3 |
| International Business Elective |  | 6 |
| Junior/Senior Information Systems Elective | 16 | 3 |
| Year Total: |  | 12 |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
${ }^{2}$ Must be completed prior to BUSI 1033.
${ }^{3}$ Must be completed prior to SEVI 3013.
${ }^{4}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{5}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:

| First Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Intermediate World Language course (2003/2013 level or higher) (Satisfies General Education Outcome 3.2) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,2,4}$ | 3 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{4}$ | 1 |  |
| MGMT 2103 Managing People and Organizations ${ }^{3}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{2,4}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{4}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{4}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS |  | 3 |
| Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{4}$ |  |  |
| Foreign Language course ( 3000 level or higher) |  | 3 |
| Year Total: | 16 | 15 |


| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles II ${ }^{4}$ or SEVI 2053 Business Foundations | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS Equivalency $=$ ECON 2203) ${ }^{4}$ or ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) | 3 |  |
| Foreign Language course (3000 level or higher) | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{4}$ | 3 |  |
| Fine Art - State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{5,6}$ | 3 |  |
| Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{4}$ |  | 3 |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) ${ }^{4}$ |  | 3 |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency $=$ ECON 2103) ${ }^{4}$ or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) |  | 3 |
| Area Studies Course |  | 3 |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{4}$ |  | 3 |
| ALL pre-business requirements should be met by end of term |  |  |
| Year Total: | 15 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| FINN 2043 Principles of Finance ${ }^{3}$ | 3 |  |
| MKTG 3433 Introduction to Marketing ${ }^{3}$ | 3 |  |
| MGMT 4243 Ethics and Corporate Responsibility | 3 |  |
| International Business Elective | 3 |  |
| U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2) | 3 |  |
| SEVI 4583 International Management |  | 3 |
| Junior/Senior MGMT Elective |  | 3 |
| ISYS 2103 Business Information Systems ${ }^{3}$ |  | 3 |
| ECON 4633 International Trade |  | 3 |
| Natural Science State Minimum Core (Satisfies General Education Outcome 3.4) |  | 4 |
| Year Total: | 15 | 16 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| Junior/Senior MGMT Elective | 3 |  |



In the eight-semester degree programs of each concentration, the first four semesters are exactly the same. In addition to the coursework listed below, students must complete an International Experience Requirement. Courses in BOLD must be taken in the semester designated. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

## International Business B.S.I.B. with Marketing Concentration

## Eight-Semester Degree Program

Students who wish to pursue the eight-semester degree program should see the Eight-Semester Degree Policy (p. 67) for requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year |  |
| :---: | :---: |
|  | Fall |
| Intermediate World Language (2003/2013 level or higher) (Satisfies General Education Outcome 3.2) | 3 |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,2,4}$ | 3 |
| SCMT 2103 Integrated Supply Chain Management ${ }^{3}$ | 3 |
| BUSI 1111 Freshman Business Connection ${ }^{4}$ | 1 |
| MGMT 2103 Managing People and Organizations ${ }^{3}$ | 3 |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{2,4}$ | 3 |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$ |  |
| ACCT 2013 Accounting Principles ${ }^{4}$ |  |
| BUSI 1033 Data Analysis and Interpretation ${ }^{4}$ |  |
| COMM 1313 Public Speaking (ACTS <br> Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{4}$ |  |
| Foreign Language (3000 level or higher) |  |
| Year Total: | 16 |
| Second Year |  |
|  | Fall |
| ACCT 2023 Accounting Principles II ${ }^{4}$ or SEVI 2053 Business Foundations | 3 |
| Satisfies General Education Outcome 3.3: |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) ${ }^{4}$ <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency = ECON 2103) | 3 |
| Foreign Language (3000 level or higher) | 3 |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{4}$ | 3 |
| Fine Arts - State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{5}$ | 3 |
| Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{6}$ |  |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) ${ }^{4}$ |  |
| Satisfies General Education Outcome 3.3: |  |
| ECON 2013 Principles of Macroeconomics (ACTS <br> Equivalency = ECON 2103) ${ }^{4}$ <br> or ECON 2023 Principles of Microeconomics <br> (ACTS Equivalency = ECON 2203) |  |
| Area Studies Course |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{4}$ |  |

ALL pre-business requirements should be met by end of term
Year Total: 1515

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| FINN $^{2043}$ Principles of Finance |  |  |
| MKTG 3433 Introduction to Marketing |  |  |

MKTG 3553 Consumer Behavior ..... 3
MKTG 3633 Marketing Research ..... 3
Natural Science State Minimum Core (Satisfies ..... 4
General Education Outcome 3.4)
Area Studies Course3
U.S. History or Government (Satisfies General ..... 3
Education Outcome 4.2)$15 \quad 16$

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MKTG 4633 Global Marketing | 3 |  |
| ECON 4643 International Macroeconomics and | 3 |  |
| Finance |  |  |
| International Business Elective | 3 |  |
| SEVI 3013 Strategic Management ((Satisfies | 3 |  |
| General Education Outcome 6.1) | 4 |  |
| Natural Science State Minimum Core (Satisfies |  |  |
| General Education Outcome 3.4) |  | 3 |
| MKTG 4853 Marketing Management |  | 3 |
| Junior/Senior MKTG Elective |  | 3 |
| International Business Elective |  | 3 |
| Junior/Senior Interdisciplinary Elective | 16 | 12 |
| Year Total: |  |  |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
${ }^{2}$ Must be completed prior to BUSI 1033.
${ }^{3}$ Must be completed prior to SEVI 3013.
${ }^{4}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{5}$ The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and

Demographic Diversity requirement include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, SOCI 2013, SOCI 2013H, orSOCI 2033.

## Retail Concentration

| MKTG 3553 | Consumer Behavior | 3 |
| :--- | :--- | :--- |
| MKTG 3633 | Marketing Research | 3 |
| MKTG 4433 | Retail Strategy | 3 |
| MKTG 4443 | Retail Buying and Merchandise | 3 |
| Select two courses from the following: | 6 |  |
| MKTG 4103 | Marketing Topics |  |
| MKTG 4233 | Integrated Marketing Communications |  |
| MKTG 4453 | New Product Development |  |
| MKTG 4633 | Global Marketing |  |
| SCMT 3443 | DELIVER: Transportation and Distribution |  |
|  | Management |  |

## Total Hours

In the eight-semester degree programs of each concentration, the first four semesters are exactly the same. In addition to the coursework listed below, students must complete an International Experience Requirement. Courses in BOLD must be taken in the semester designated. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

## International Business B.S.I.B. with Retail Concentration

## Eight-Semester Degree Program

Students who wish to pursue the eight-semester degree program should see the Eight-Semester Degree Policy for requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Intermediate World Language (2003/2013 level or higher) (Satisfies General Education Outcome 3.2) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency $=$ BLAW 2003) ${ }^{2}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{3}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS |  | 3 |
| Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1$)^{3}$ |  |  |
| Foreign Language (3000 level or higher) |  | 3 |

Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ACCT 2023 Accounting Principles II <br> or SEVI 2053 Business Foundations | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) |  |  |
| or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency = ECON 2103) | 3 |  |
| Foreign Language (3000 level or higher) |  |  |
| ENGL 1013 Composition I (ACTS Equivalency <br> = ENGL 1013) (Satisfies General Education <br> Outcome 1.1) |  |  |
| Fine Arts - State Minimum Core (Satisfies General | 3 |  |

= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{3}$
All pre-business requirements should be met by end of term
Year Total: 15

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

FINN 2043 Principles of Finance ${ }^{2} 3$
MKTG 3433 Introduction to Marketing ${ }^{2} 3$
ECON 4633 International Trade 3
International Business and Collateral Elective 3
ISYS 2103 Business Information Systems ${ }^{2} \quad 3$
MKTG 3553 Consumer Behavior 3
MKTG 3633 Marketing Research 3
SEVI 3013 Strategic Management (Satisfies 3
General Education Outcome 6.1)
International Business and Collateral Elective 3
Area Studies Course 3
Year Total: 15

Fourth Year $\quad$ Fall | Units |
| ---: |
| Spring |

ECON 4643 International Macroeconomics and Finance
U.S. History or Government (Satisfies General Education Outcome 4.2)
Science State Minimum Core (Satisfies General Education Outcome 3.4)
MKTG 4433 Retail Strategy
3 hour specified MKTG or SCMT course
International Business and Collateral Elective
Science - State Minimum Core (Satisfies General Education Outcome 3.4)
Year Total:

Total Units in Sequence:

1 Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
${ }^{2}$ Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business electives.
4 The Fine Arts Elective courses which
satisfy General Education Outcome 3.1
include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003,
5 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123 or SOCI 2033.

| Supply Chain Management Concentration |  |  |
| :--- | :--- | :--- |
| SCMT 3443 | DELIVER: Transportation and Distribution | 3 |
|  | Management |  |
| SCMT 3613 | SOURCE: Procurement and Supply Management | 3 |
| SCMT 3643 | International Logistics | 3 |
| Junior/Senior Supply Chain Management Electives | 6 |  |
| Junior/Senior Interdisciplinary Electives | 3 |  |

Total Hours
In the eight-semester degree programs of each concentration, the first four semesters are exactly the same. In addition to the coursework listed below, students must complete an International Experience Requirement. Courses in BOLD must be taken in the semester designated. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

## International Business B.S.I.B. with Supply Chain Management Concentration Eight-Semester Degree Program

Students who wish to pursue the eight-semester degree program should see the Eight-Semester Degree Policy (p. 67) for requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred. Outcome 1.1) ${ }^{4}$

3 First Year Units

Intermediate World Language (2003/2013 level or 3
higher) (Satisfies General Education Outcome 3.2)
MATH 2053 Finite Mathematics (Satisfies
General Education Outcome 2.1) 1, 2, 4
3 SCMT 2103 Integrated Supply Chain
3 Management ${ }^{3}$
3 BUSI 1111 Freshman Business Connection ${ }^{4}$
4 MGMT 2103 Managing People and Organizations ${ }^{3}$
ISYS 1123 Business Application Knowledge - ..... 3

Computer Competency ${ }^{2,4}$
BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$
ACCT 2013 Accounting Principles ${ }^{4}$
BUSI 1033 Data Analysis and Interpretation ${ }^{4}$
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies General
Education Outcomes 1.2 and 5.1) ${ }^{4}$
Foreign Language (3000 level or higher)
Year Total:

| Second Year | Units <br> Spring |
| :--- | ---: |
| Fall |  |

Equivalency $=$ ECON 2203) ${ }^{4}$
3 or ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)
Foreign Language Course (3000 level or higher)
ENGL 1013 Composition I (ACTS Equivalency
= ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{4}$
Fine Arts - State Minimum Core (Satisfies General

Social Sciences - State Minimum Core (Satisfies
General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{6}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{4}$
Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103) ${ }^{4}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
Area Studies Course
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education

ALL pre-business requirements should be met by end of term
Year Total:

Fall
Spring
3

| Third Year |  | Uni |
| :---: | :---: | :---: |
|  | Fall | Spri |
| FINN 2043 Principles of Finance ${ }^{3}$ | 3 |  |
| MKTG 3433 Introduction to Marketing ${ }^{3}$ | 3 |  |
| Management |  |  |
| International Business Elective | 3 |  |
| U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2) | 3 |  |
| Distribution Management |  |  |
| SCMT 3643 International Logistics |  |  |
| ISYS 2103 Business Information Systems ${ }^{3}$ |  |  |
| ECON 4633 International Trade |  |  |
| Natural Science State Minimum Core (Satisfies General Education Outcome 3.4) |  |  |
| Year Total: 15 |  |  |
| Fourth Year | Units |  |
|  | Fall | Spring |
| Junior/Senior SCMT Elective | 3 |  |
| Finance |  |  |
| International Business Elective |  |  |
| Area Studies Course |  |  |
| Natural Science State Minimum Core (Satisfies General Education Outcome 3.4) |  |  |
| Junior/Senior SCMT Elective |  |  |
| SEVI 3013 Strategic Management (Satisfies General Education Outcome 6.1) |  |  |
| International Business Elective |  |  |
| Junior/Senior Interdisciplinary Electives |  |  |
| Year Total: 16 |  |  |
| Total Units in Sequence: 120 |  |  |
| ${ }^{1}$ Students have demonstrated successful completion of the learning indicators for learning outcome 2.1, by meeting the prerequisites for MATH 2053. <br> ${ }^{2}$ Must be completed prior to BUSI 1033. <br> ${ }^{3}$ Must be completed prior to SEVI 3013. <br> ${ }^{4}$ Must be completed prior to taking any 3000 or 4000 level business courses. <br> 5 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: <br> ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H. <br> ${ }^{6}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, SOCI 2013, SOCI 2013H, or SOCI 2033. |  |  |
|  |  |  |
|  |  |  |

## International Business Minor for Business Students

The Walton College offers a minor for students desiring more knowledge in international programs to assist them with their business careers. The minor requires completion of 21 required hours of study (including equivalencies). The 21 hours include the following courses:

Select seven of the following:

| ECON 3843 | Economics of the Developing World |
| :--- | :--- |
| ECON 3853 | Emerging Markets |
| ECON 3933 | The Japanese Economic System |
| ECON 4633 | International Trade |
| ECON 4643 | International Macroeconomics and Finance |
| FINN 3703 | International Finance |
| MKTG 4633 | Global Marketing |
| 3 hours of Study Abroad led by Walton College faculty |  |
| SCMT 3643 | International Logistics |
| Other - Department Chair approval needed |  |
| Total Hours |  |

Total Hours
Students must also complete six hours of intermediate foreign language.
Students whose native language is English or whose native language is not taught at the University of Arkansas must complete six hours of university course work in a single foreign language. Students who, on the basis of prior knowledge of language, omit one or both courses in the intermediate language sequence - at 2003 and 2013 level - may receive degree credit for omitted courses if they validate their higher placement by passing the business language course (or equivalent) with a grade of " C " or above. Students with no previous foreign language training or only rudimentary knowledge of a foreign language will be required to complete up to six hours of elementary foreign language. Students whose native language is not English but is taught at the University of Arkansas must select a third language from the list below, or substitute six hours of upper-division English language courses (i.e., speech, writing, or U.S. literature), to be selected with the consent of the department chair. Those students whose native language is not taught at the University of Arkansas will normally be required to select a third language.

Students may select from one of the following language tracks:

## Arabic

| ARAB 2016 | Immersive Arabic II | 6 |
| :--- | :--- | ---: |
| Chinese |  | 3 |
| CHIN 2003 | Intermediate Chinese I | 3 |
| CHIN 2013 | Intermediate Chinese II |  |
| French |  | 3 |
| FREN 2003 | Intermediate French I (ACTS Equivalency = FREN <br> 2013) | 3 |
| FREN 2013 | Intermediate French II (ACTS Equivalency = FREN <br> 2023) | 3 |
| German | Intermediate German I (ACTS Equivalency = <br> GERM 2003 | 3 |
| GERM 2013 | Intermediate German II (ACTS Equivalency = <br> GERM 2023) | 3 |
| Italian | Intermediate Italian I | 3 |


| ITAL 2013 | Intermediate Italian II | 3 |
| :---: | :---: | :---: |
| Japanese |  |  |
| JAPN 2003 | Intermediate Japanese I | 3 |
| JAPN 2013 or JAPN 2 | Intermediate Japanese II HHonors Intermediate Japanese II | 3 |
| Russian |  |  |
| RUSS 2003 | Intermediate Russian I | 3 |
| RUSS 2013 | Intermediate Russian II | 3 |
| Spanish |  |  |
| SPAN 2003 | Intermediate Spanish I (ACTS Equivalency = SPAN 2013) | 3 |
| SPAN 2013 | Intermediate Spanish II (ACTS Equivalency = SPAN 2023) | 3 |
| Swahili |  |  |
| SWAH 2003 | Intermediate Swahili I | 3 |
| SWAH 2013 | Intermediate Swahili II | 3 |

Students who desire to earn an International Business minor must notify the Walton College Undergraduate Programs Office of their intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

## Blockchain Enterprise Systems (WBLC)

The Walton College offers an interdisciplinary minor in Blockchain Enterprise Systems for business majors. Blockchains are currently used by many companies for applications ranging from strategic management of data to day operations to customer insights to retail analytics to developing and maintaining a competitive edge.

## Minor in Blockchain Enterprise Systems for Business Majors

The minor requires completion of 15 hours of study with all of the upper division courses applied toward the minor in residence. Students who desire to earn a Blockchain Enterprise Systems minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for a minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upperdivision minor requirements must be taken in residence.

Requirements for Minor in Blockchain Enterprise Systems:

## Required Courses

| ISYS 4173 | Blockchain Fundamentals | 3 |
| :--- | :--- | :--- |
| ISYS 4453 | Introduction to Blockchain Applications | 3 |
| ISYS 4463 | Blockchain Enterprise Systems Development | 3 |
| Choose 6 hours from the following: | 6 |  |
| ACCT 3533 | Accounting Technology |  |
| ACCT 3723 | Intermediate Accounting I |  |
| ACCT 4963 | Audit and Assurance Services |  |
| ECON 3433 | Money and Banking |  |
| ECON 4433 | Experimental Economics |  |


| ECON 4633 | International Trade |
| :--- | :--- |
| ECON 4743 | Introduction to Econometrics |
| ECON 4753 | Forecasting |
| FINN 3053 | Financial Markets and Institutions |
| FINN 3063 | Investments |
| FINN 3603 | Corporate Finance |
| ISYS 3293 | Systems Analysis and Design |
| ISYS 4193 | Business Analytics and Visualization |
| ISYS 4213 | ERP Fundamentals |
| SEVI 3933 | Entrepreneurship and New Venture Development |
| MGMT 4263 | Organizational Change and Development |
| SCMT 3613 | SOURCE: Procurement and Supply Management |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics |
| SCMT 3643 | International Logistics |
| SCMT 3653 | Project Management: Supply Chain New Product |
|  | Planning and Launch |

## Total Hours

## Economics (ECON)

## Raja Kali

Department Chair
402 Business Building
479-575-ECON (3266)
Economics Department Website (https://walton.uark.edu/departments/ economics/)

The department of economics offers two concentrations within the business economics major:

1. Business Economics
2. International Economics and Business.

The concentration in business economics is intended for those students who are interested primarily in business, but at the same time have a desire to understand the more advanced tools of economic analysis. Such a background is excellent preparation for careers in corporate research and planning, as well as careers with government and regulatory agencies, for graduate study in business and economics, and for law school. Students who want to pursue an advanced degree in business economics can, with appropriate planning, complete a master's degree at the University of Arkansas within 12 months after receiving a B.S.B.A. degree. Please see the economics department chair for more information.

The international economics and business concentration is intended for students who wish to learn more about the international aspects of economics and business. It provides preparation for a broad range of careers in business, including management, marketing, and finance.

It is strongly recommended that economics majors who plan to continue their studies at the graduate level take at least two semesters of calculus (MATH 2554 and MATH 2564) and linear algebra (MATH 3083). These courses will substitute for the math courses required within Walton College core (MATH 2043 and MATH 2053).

## Economics Minors for Business Students

The Department of Economics offers two minors for Walton College students desiring more knowledge of economics to assist them in their business careers. The minors require completion of 15 hours of study and
all of the upper division courses applied toward the minor must be taken in residence.

## Business Economics Concentration

The major in Business Economics requires 21 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a WCOB major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.

The courses required for the business economics concentration include those required in Walton College and Fulbright College. In addition, 12 hours of specified courses (listed below) are required:

| Major Course Requirements in the concentration |  |  |
| :--- | :--- | :--- |
| ECON 3033 | Microeconomic Theory | 3 |
| ECON 3133 | Macroeconomic Theory | 3 |
| ECON 4333 | Economics of Organizations | 3 |
| ECON 4743 | Introduction to Econometrics | 3 |

or ECON 4753 Forecasting
Nine hours of ECON 3000/4000
Maximum of 27 hours of ECON courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

## Total Hours

Junior/Senior Business Electives (15 hours)

## Economics B.S.B.A. with Business

## Economics Concentration

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these course are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| MATH 2053 Finite Mathematics (Satisfies <br> General Education Outcome 2.1), | 3 |  |
| BUSI 1111 Freshman Business Connection |  |  |
| SCMT 2103 Integrated Supply Chain | 1 |  |
| Management |  |  |
| MGMT 2103 Managing People and <br> Organizations |  |  |
| ISYS 1123 Business Application Knowledge - <br> Computer Competency |  |  |
| BLAW 2013 The Legal Environment of <br> Business (ACTS Equivalency = BLAW 2003) | 3 |  |

COMM 1313 Public Speaking (ACTS
Equivalency $=$ SPCH 1003) (Satifies General Education Outcomes 1.2 and 5.1) ${ }^{3}$
ACCT 2013 Accounting Principles ${ }^{3}$
BUSI 1033 Data Analysis and Interpretation ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203) ${ }^{3}$
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Year Total:

| Second Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ACCT 2023 Accounting Principles $I I^{3}$ | 3 |  |

SEVI 2053 Business Foundations ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203) ${ }^{3}$
or
ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103) (which ever not taken earlier) ${ }^{3}$
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1) ${ }^{3}$
Select one of the following:
ISYS 2103 Business Information Systems ${ }^{2}$
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing ${ }^{2}$
Fine Arts/Humanities - State Minimum Core
(Satisfies General Education Outcomes 3.1 or $3.2)^{5,6}$
Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{3}$
Select one of the following:
ISYS 2103 Business Information Systems ${ }^{2}$
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing ${ }^{2}$
Science - State Minimum Core (Satisfies General
Education Outcome 3.4)
3 hours general education elective
ALL pre-business requirements should be met by end of term
Year Total:

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

Select one of the following: 3
ISYS 2103 Business Information Systems ${ }^{2}$

FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing (which ever not taken earlier) ${ }^{2}$
Fine Arts/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5,6}$

ECON 3033 Microeconomic Theory 3
ECON Elective 3
Junior Senior Business Elective
ECON 3133 Macroeconomic Theory
ECON 4743 Introduction to Econometrics or ECON 4753 Forecasting
SEVI 3013 Strategic Management (Satisfies
General Education Outcome 6.1)
Junior/Senior Business Electives
U.S. History or Government - State Minimum

Core (Satisfies General Education Outcome 4.2)
Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ECON 4333 Economics of Organizations | 3 |  |
| ECON Elective | 3 |  |
| Junior/Senior Business Elective | 3 |  |
| General Education Electives | 6 |  |
| ECON Elective |  | 3 |
| Junior/Senior Business Electives |  | 6 |
| Science - State Minimum Core (Satisfies General |  | 4 |
| Education Outcome 3.4) | 15 | 13 |
| Year Total: |  |  |

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
3 Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013,

THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## International Economics and Business Concentration

The major in International Economics requires 21 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in the Economics major or discipline field of study (i.e., core, major,

## Total Hours

21
Junior/Senior Business Electives (15 hours)

## World Language Requirements (9 Hours)

Students whose native language is English or whose native language is not taught at the University of Arkansas must complete nine hours of university course work in a single world language - three hours of intermediate language and six hours of 3000 level or higher. Students who, on the basis of prior knowledge of language, may receive degree credit for courses if they validate their higher placement by passing the business language course (or equivalent) with a grade of "C" or above. Students with no previous world language training or only rudimentary knowledge of a world language will be required to complete up to six hours of elementary language - at 1003 and 1013 level - in addition to the hours of language specified above.

Students may select one of the following language tracks:

## Arabic

| ARAB 2016 | Immersive Arabic II | 6 |
| :--- | :--- | :--- |
| ARAB 3016 | Immersive Arabic III | 6 |
| Chinese |  | 3 |
| CHIN 2003 | Intermediate Chinese I | 3 |
| CHIN 2013 | Intermediate Chinese II | 3 |


| And any other upper division CHIN |  |  |
| :---: | :---: | :---: |
| French |  |  |
| FREN 2003 | Intermediate French I (ACTS Equivalency $=$ FREN 2013) | 3 |
| FREN 2013 | Intermediate French II (ACTS Equivalency $=$ FREN 2023) | 3 |
| FREN 4333 | Introduction to Business French | 3 |
| German |  |  |
| GERM 2003 | Intermediate German I (ACTS Equivalency = GERM 2013) | 3 |
| GERM 2013 | Intermediate German II (ACTS Equivalency = GERM 2023) | 3 |
| GERM 3003 | Advanced German I | 3 |
| GERM 4333 | Professional German I | 3 |
| Italian |  |  |
| ITAL 2003 | Intermediate Italian I | 3 |
| ITAL 2013 | Intermediate Italian II | 3 |
| Japanese |  |  |
| JAPN 2003 | Intermediate Japanese I | 3 |
| JAPN 2013 | Intermediate Japanese II | 3 |
| Spanish |  |  |
| SPAN 2003 | Intermediate Spanish I (ACTS Equivalency = SPAN 2013) | 3 |
| SPAN 2013 | Intermediate Spanish II (ACTS Equivalency = SPAN 2023) | 3 |
| SPAN 3003 | Advanced Spanish | 3 |
| SPAN 4333 | Business Spanish I | 3 |

Students whose native language is not English but is taught at the University of Arkansas must select a third language from the list above, or substitute six hours of upper-division English language courses (i.e., speech, writing, or U.S. literature), to be selected with the consent of the department chair. Those students whose native language is not taught at the University of Arkansas will normally be required to select a third language.

## Area Studies Requirements (3 Hours)

For students taking a world language, three hours of upper-division course work in the Fulbright College of Arts and Sciences are required. Domestic students can satisfy this requirement in one of three ways:

1. Any upper division world language course,
2. Minor in a world language, and/or
3. Select upper division courses related to the world language to include:

- Arabic - any upper division course for Middle Eastern Studies (MEST) to include MEST 4003, MEST 4003H or additional courses listed under MEST in the university catalog.
- Chinese/Japanese/Asian Studies - any upper division course for Asian Studies (AIST)
- French - any upper division course for EUST
- German - any upper division course for EUST
- Italian - any upper division course for EUST
- Spanish - any upper division course for Latin American Studies (LALS), to include LALS 4003 Latin American Studies Colloquium, LALS 4003H Honors Latin American Studies

> Colloquium, or additional courses listed under LALS in the university catalog.

International students may satisfy this requirement in one of two ways:

1. For students who choose to take a third language, area studies requirements are the same as those for domestic students.
2. For students who choose to take six hours of upper division English to satisfy their language requirement, six hours of upper division course work in the J. William Fulbright College of Arts and Sciences pertaining to the United States to include any upper division course in American Studies (AMST) listed in the university catalog.

Maximum of 27 hours of ECON courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

## Economics B.S.B.A. with Concentration in International Economics and Business Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for University requirements of the program.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these course are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| Intermediate World Language (2003 level or <br> higher) (Satisfies General Education Outcome 3.2) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies <br> General Education Outcome 2.1), | 3 |  |
| BUSI 1111 Freshman Business Connection |  |  |


| Second Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles $\mathrm{II}^{3}$ or SEVI 2053 Business Foundations | 3 |  |
| Select one of the following: <br> ISYS 2103 Business Information Systems ${ }^{2}$ <br> FINN 2043 Principles of Finance ${ }^{2}$ <br> MKTG 3433 Introduction to Marketing ${ }^{2}$ | 3 |  |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) (Satisfies General Education Outcome 3.3) ${ }^{3}$ <br> or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) | 3 |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| World Language ( 3000 level or higher) | 3 |  |
| Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement ${ }^{4}$ |  | 3 |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) |  | 3 |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| Select one of the following: <br> ISYS 2103 Business Information Systems ${ }^{2}$ <br> FINN 2043 Principles of Finance ${ }^{2}$ <br> MKTG 3433 Introduction to Marketing ${ }^{2}$ |  | 3 |
| Science - State Minimum Core (Satisfies General Education Outcome 3.4) |  | 4 |
| All pre-business requirements must be met by end of term |  |  |
| Year Total: | 15 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| Select one of the following: <br> ISYS 2103 Business Information Systems ${ }^{2}$ <br> FINN 2043 Principles of Finance ${ }^{2}$ <br> MKTG 3433 Introduction to Marketing ${ }^{2}$ | 3 |  |
| World Language ( 3000 level or higher) | 3 |  |
| ECON 3033 Microeconomic Theory | 3 |  |
| Junior/Senior Business Electives | 3 |  |
| U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2) | 3 |  |
| ECON 3133 Macroeconomic Theory |  |  |
| ECON 4633 International Trade |  |  |
| SEVI 3013 Strategic Management (Satisfies General Education Outcome 6.1) |  |  |
| Junior/Senior Business Electives |  |  |
| Fine Art - State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{4}$ |  |  |
| Year Total: | 15 | 15 |


| Fourth Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ECON 4643 International Macroeconomics and Finance | 3 |  |
| International Economics/Business Elective | 3 |  |
| Natural Science - State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| ECON elective | 3 |  |
| Junior/Senior Business Electives | 3 |  |
| International Economics/Business Elective |  | 3 |
| Area Studies Course |  | 3 |
| Junior/Senior Business Electives |  | 6 |
| Year Total: | 16 | 12 |
| Total Units in Sequence: |  | 120 |
| ${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053. |  |  |
| ${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses. |  |  |
| ${ }^{4}$ The Fine Arts Elective courses which satisfy the Outcome 3.1 include: <br> ARCH 1003, ARHS 1003, COMM 1003, DANC MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 101 THTR 1003, THTR 1013, or THTR 1013H. | Edu <br> ARC <br> T 133 | ation <br> 03, |

## Behavioral Economics Minor

| ECON 2013 | Principles of Macroeconomics (ACTS Equivalency <br> $=$ | 3 |
| :--- | :--- | :---: |
| ECON 2023 | Principles of Microeconomics (ACTS Equivalency <br> = ECON 2203) | 3 |
| ECON 4423 | Behavioral Economics | 3 |
| ECON 4433 | Experimental Economics | 3 |

Plus one of the following:
ECON 3033 Microeconomic Theory 3
or ECON 4743 Introduction to Econometrics

## Total Hours

Students who desire to earn an Economics minor must notify the Walton College Undergraduate Programs Office of their intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

## Economics Minor

The minor in Economics requires completion of 15 hours of study:
ECON 2013 Principles of Macroeconomics (ACTS Equivalency 3 = ECON 2103)
ECON 2023 Principles of Microeconomics (ACTS Equivalency 3 = ECON 2203)

Plus nine hours of upper division course work in economics
Total Hours
Students who desire to earn an Economics minor must notify the Walton College Undergraduate Programs Office of their intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

## Economic Analytics Minor

The minor in Economic Analytics requires 15 hours of courses:

| ECON 3033 | Microeconomic Theory | 3 |
| :--- | :--- | ---: |
| ECON 3133 | Macroeconomic Theory | 3 |
| ECON 4743 | Introduction to Econometrics | 3 |
| ECON 4753 | Forecasting | 3 |
| ECON 4763 | Economic Analytics | 3 |
| Total Hours |  | $\mathbf{1 5}$ |

## Faculty

Bhattacharya, Puja, Ph.D., M.A. (Ohio State University), M.S. (Indian Statistical Institute), B.S. (Presidency College), Assistant Professor, 2019.
Brownback, Andrew P., Ph.D. (University of California, San Diego), B.A. (Kansas State University), Associate Professor, 2015, 2021.
Celik, Bilal, Ph.D. (University of Tennessee), M.S. (University of Illinois), B.A. (Ege University), Teaching Assistant Professor, 2023.

Civelli, Andrea, Ph.D., M.A. (Princeton University), B.A. (Bocconi University, Milan), Associate Professor, 2010, 2017.
Embaye, Abel, Ph.D. (Georgia State University), M.A. (Tilburg University), B.A. (University of Asmara), Clinical Assistant Professor, 2010.

Farmer, Amy Lynn, Ph.D., M.A. (Duke University), B.S. (Purdue University), University Professor, Margaret Gerig and R.S. Martin Jr. Chair in Business, 1999, 2003.
Ferrier, Gary D., Ph.D. (University of North Carolina-Chapel Hill), B.A. (University of Wisconsin-Madison), University Professor, Lewis E. Epley Jr. Professorship in Economics, 1993, 2012.
Gaduh, Arya, Ph.D. (University of Southern California), M.Phil. (Cambridge University), B.A. (University of California-Berkeley), Associate Professor, 2013, 2019.
Geng, Difei, Ph.D. (Vanderbilt University), M.A. (Southern Methodist University), M.A. (Nankai University), B.A. (Tianjin University of Finance and Economics), Assistant Professor, 2016.
Gu, Jingping, Ph.D. (Texas A\&M University), M.A. (Peking University), B.A. (Renmin University of China, Bejiing), Associate Professor, 2008, 2014.

Hong, Ye "Abby", Ph.D. (University of Tennessee), M.S. (University of Illinois), B.S. (Nanjing University of Science and Technology), Teaching Assistant Professor, 2022.
Hossain, Md Amzad, Ph.D., M.A. (University of Virginia), B.S.S.
(University of Dhaka), Assistant Professor, 2022.
Jaduh, Arva, Ph.D. (University of Southern California), M.Phil.
(Cambridge University), B.A. (University of California, Berkeley), Assistant Professor, 2013.
Jung, Hyunseok, Ph.D. (Syracuse University), M.A. (Korea Development Institute), B.A. (Seoul National University), Assistant Professor, 2018.

Kali, Raja, Ph.D., M.A. (University of Maryland University College), B.S.C. (University of Calcutta), Professor, ConocoPhillips Chair in International Education, 1999, 2013.
Koh, Dongya, Ph.D. (Washington University-St. Louis), M.A. (Boston University), B.A. (Keio University), Assistant Professor, 2014.
Li, Xin "Sherry", Ph.D. (University of Michigan), M.A. (Syracuse University), M.A., B.A. (Renmin People's University of China), Professor, 2018.

Littrell, Rita, Ph.D. (University of Kansas), Ed.S., M.Ed., B.S.E. (University of Arkansas), Visiting Assistant Professor, 1997.
Liu, Andrew Yizhou, Ph.D., M.A. (University of California, Santa Barbara), B.A. (Nanjing University), Assistant Professor, 2020.
Mao, Ruoyun, Ph.D. (Indiana University), B.A. (Sun Yat-sen University), Assistant Professor, 2023.
McGee, Peter J., Ph.D. (Ohio State University), B.S. (Tulane University), Associate Professor, 2014, 2018.
Miller, Logan, Ph.D., M.S., B.A. (University of Arkansas), Teaching Assistant Professor, 2023.
Park, Doyoung, Ph.D., M.A. (University of Colorado) B.S. (Sogang University, Seoul), Assistant Professor, 2019.
Rahman, Muhammad, Ph.D. (Indiana University), M.S., B.S. (University of Dhaka), Clinical Assistant Professor, 2014.
Stapp, Robert Bruce, Ph.D., M.S. (Oklahoma State University), B.S.B.A. (Oklahoma City University), Clinical Professor, 1995, 2012.
Sude, Yujie, Ph.D., M.A. (University of Arkansas), M.Ed. (Beijing Normal University), LL.B. (Peking University), Clinical Assistant Professor, 2018.
Swanson, Shawn, Ph.D. (University of Colorado Boulder), M.A.
(University of Colorado Boulder, University of Wisconsin-Milwaukee), B.S. (University of Wisconsin-Madison), Teaching Assistant Professor, 2021.
White, Jessica, , Visiting Assistant Professor, 2021.

## Courses

ECON 2013. Principles of Macroeconomics (ACTS Equivalency = ECON 2103). 3 Hours.
Macroeconomic analysis, including aggregate employment, income, fiscal and monetary policy, growth and business cycles. Credit will be allowed for only one of ECON 2013 and AGEC 2103. Prerequisite: MATH 1203 or higher, or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with AGEC 2103.

## ECON 2013H. Honors Principles of Macroeconomics. 3 Hours.

Macroeconomic analysis, including aggregate employment, income, fiscal and monetary policy, growth and business cycles. Credit will be allowed for only one of ECON 2013H and AGEC 2103. Prerequisite: MATH 1203 or higher or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT, and honors standing. (Typically offered: Fall)
This course is cross-listed with ECON 2013, AGEC 2103.
ECON 2023. Principles of Microeconomics (ACTS Equivalency = ECON 2203). 3 Hours.
Microeconomic analysis, including market structures, supply and demand, production costs, price and output, and international economics. Credit will be allowed for only one of ECON 2023 and AGEC 1103. Prerequisite: MATH 1203 or higher, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer) This course is cross-listed with AGEC 1103.

## ECON 2023H. Honors Principles of Microeconomics. 3 Hours.

Microeconomic analysis, including market structures, supply and demand, production costs, price and output, and international economics. Credit will be allowed for only one of ECON 2023H and AGEC 1103. Prerequisite: MATH 1203 or higher, or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT, and honors standing. (Typically offered: Spring)
This course is cross-listed with ECON 2023, AGEC 1103.

## ECON 2143. Basic Economics: Theory and Practice. 3 Hours.

Surveys basic micro, macro principles and analytical tools needed to study contemporary economic problems such as inflation, unemployment, poverty, and pollution. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Fall, Spring and Summer)

ECON 2143H. Honors Basic Economics: Theory and Practice. 3 Hours.
Surveys basic micro, macro principles and analytical tools needed to study contemporary economic problems such as inflation, unemployment, poverty, and pollution. Not open to students majoring in Economics or Business Administration. (Typically offered: Fall, Spring and Summer)
This course is equivalent to ECON 2143.

## ECON 3033. Microeconomic Theory. 3 Hours.

Nature, scope, and purpose of economic analysis; theories of demand, production, cost, firm behavior, allocation of resources, etc., in a market-oriented system. Prerequisite: (ECON 2013 and ECON 2023) or (ECON 2143) and (MATH 2043 or MATH 2554). (Typically offered: Fall, Spring and Summer)
ECON 3053. Economics for Elementary Teachers. 3 Hours.
For students who plan to become teachers in elementary schools. Acquaints students with basic concepts and functioning of the American economic system. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. Recommended to be completed in the fall semester of junior year. Prerequisite: 40 hours of completed course work. (Typically offered: Fall)

ECON 3063. Economics for Secondary Educators. 3 Hours.
Economics for Secondary Educators teaches basic economics understandings equipping students to make sound economics decisions as consumers, investors, voters and savers. Lessons and activities appropriate for secondary classes will be demonstrated. The course will survey materials available for government, economics, world and U.S. history, environmental science, language arts, business education, personal finance and entrepreneurship classes. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. Recommended to be completed in the fall semester of junior year. Prerequisite: 40 hours of completed course work. (Typically offered: Irregular)

ECON 3133. Macroeconomic Theory. 3 Hours.
Theoretical determinations of national aggregate employment, income, consumption, investment, price level, etc. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2043 or MATH 2554)). (Typically offered: Fall and Spring)

## ECON 3143. Economics of Poverty and Inequality. 3 Hours.

This course provides the study of how labor markets work and how economic institutions and policy affect labor market outcomes. Topics include changes to the modern economy including forces like globalization and technical advances and how such forces have altered incomes, wealth and social mobility. The course will provide a clearer understanding of the trends, the reasoning behind the trends, and the impact of social policy on the welfare of the American worker. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall)

ECON 330V. Economics Study Abroad. 3-6 Hour.
Open to undergraduate students studying abroad in officially sanctioned programs in Economics in the Walton College. Topics vary by location of study abroad opportunities. To be eligible for credit, students must have junior standing and Walton College majors must have completed all pre-business requirements prior to studying abroad. Prerequisite: Departmental consent, Junior standing and completion of pre-business course requirements, each with a grade of $C$ or better, a pre-business cumulative GPA of 2.5 or better and an overall GPA of 2.5 or better. (Typically offered: Irregular)

## ECON 3333. Public Economics. 3 Hours.

Governmental functions, revenues; tax shifting, incidence; public expenditures, their effects; and fiscal policy. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

ECON 3433. Money and Banking. 3 Hours.
Financial history; theory and practice of financial institutions; monetary policy in theory and practice. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

## ECON 3533. Labor Economics. 3 Hours.

Economic analysis of labor markets. Topics include analysis of labor demand and supply; human capital investment; wage differentials; discrimination; economic effects of labor unions and collective bargaining; public sector labor markets; unemployment; and labor market effects on inflation. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

## ECON 3633. Economics of Advertising. 3 Hours.

An examination of how economists define and categorize types of products and advertising campaigns. Alternative views of advertising -- persuasive vs. informative -- are discussed. Models of the relationship between advertising and sales, profits, market structure, product quality, and price are examined. Prerequisite: ECON 2023 or ECON 2143. (Typically offered: Irregular)

## ECON 3843. Economics of the Developing World. 3 Hours.

Examine theories and patterns of economic development in emerging economies. The role of the World Bank and IMF as multilateral lenders and examination of their success and failures in fostering development. Measures of poverty and inequality and their implications for economic development. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

## ECON 3853. Emerging Markets. 3 Hours.

An analysis of the business and economic environment in emerging countries; focusing in Latin America, South East Asia and Transition Economies. The topics and issues covered include market structure and market failures, financial and legal background, current institutions and political economy issues, and current business opportunities. Prerequisite: ECON 2143; or ECON 2013 and ECON 2023. (Typically offered: Fall)

## ECON 3933. The Japanese Economic System. 3 Hours.

This class presents essential facts about the Japanese economy and then subjects them to modern economic analyses. Japanese institutions and policies are contrasted with their American counterparts, and these economies are compared in terms of performance. Current issues including contemporary economic conditions and US - Japanese trade relations are also examined. Pre- or Corequisite: ECON 2023. Prerequisite: ECON 2013 or ECON 2143. (Typically offered: Spring)

## ECON 399VH. Honors Course. 1-3 Hour.

Honors thesis research and writing under the direction of a faculty member in the department. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## ECON 4003H. Honors Economics Colloquium. 3 Hours.

Explores events, concepts and/or new developments in the field of Economics. Prerequisite: Senior standing. (Typically offered: Fall)

## ECON 410V. Special Topics in Economics. 1-6 Hour.

Covers special topics in economics not available in other courses. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## ECON 410VH. Honors Special Topics in Economics. 1-6 Hour.

Covers special topics in economics not available in other courses. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit
This course is equivalent to ECON 410 V .
ECON 4173. Nation Model United Nations. 3 Hours.
This class is designed to prepare students for their participation in a Nation Model United Nations (NMUN) Conference. The NMUN Conference is sponsored by The National Collegiate Conference Association (NCCA), which is the largest collegelevel Model United Nations conference. This course is designed to advance the research skills of the students by requiring extensive background position papers covering various economic and social issues of their assigned committee and ultimately preparing resolution documents they develop during the conference. They will present their positions via speeches and in caucus settings. This course will broaden the students' international perspective while they gain a thorough understanding of the primary activities of the United Nations. Prerequisite: Junior standing and departmental consent. (Typically offered: Fall)

## ECON 4333. Economics of Organizations. 3 Hours.

An economic perspective on the design of organizations. Applies developments in game theory and contract theory to analyze the role of information and incentives within and between firms. Covers the boundaries of firms, integration and outsourcing, authority and incentives, and alternative organizational structures in an evolving business environment. Prerequisite: ECON 3033. (Typically offered: Fall)

ECON 4423. Behavioral Economics. 3 Hours.
Both economics and psychology systematically study human judgment, behavior, and well-being. This course surveys attempts to incorporate psychology into economics to better understand how people make decisions in economic situations. The course will cover models of choice under uncertainty, choice over time, as well as procedural theories of decision making. Prerequisite: ECON 3033. (Typically offered: Fall)

ECON 4433. Experimental Economics. 3 Hours.
The course offers an introduction to the field of experimental economics. Included are the methodological issues associated with developing, conducting, and analyzing controlled laboratory experiments. Standard behavioral results are examined and the implications of such behavior for business and economic theory are explored. Prerequisite: ECON 2023 or ECON 2143. (Typically offered: Spring)

## ECON 450V. Independent Study. 1-6 Hour

Permits students on individual basis to explore selected topics in economics. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ECON 4633. International Trade. 3 Hours.
Problems of the international economy from a microeconomic perspective. Topics include analysis of the pattern and content of trade; trade in factors of production; and the applications of trade theory to the study of trade barriers such as tariffs and quotas. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

ECON 4643. International Macroeconomics and Finance. 3 Hours.
Problems of the international economy from a macroeconomic perspective. Topics include national income accounting and the balance of payments; exchange rates and the foreign exchange markets; exchange rate policy; macroeconomic policy coordination; developing countries and the problem of 3rd world debt; and the global capital market. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

ECON 4743. Introduction to Econometrics. 3 Hours.
Introduction to the application of statistical methods to problems in economics. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2043 or MATH 2554 or higher)) and (BUSI 1033 or STAT 2303). (Typically offered: Spring)

## ECON 4753. Forecasting. 3 Hours.

The application of forecasting methods to economics, management, engineering, and other natural and social sciences. The student will learn how to recognize important features of time series and will be able to estimate and evaluate econometric models that fit the data reasonably well and allow the construction of forecasts. Prerequisite: (ECON 2013 and ECON 2023) or (ECON 2143) and (MATH 2043 or MATH 2554) and (BUSI 1033 or STAT 2303). (Typically offered: Fall)

## ECON 4763. Economic Analytics. 3 Hours.

This course provides an overview of modern statistical learning methods, including Machine Learning, for senior economics or business majors, along with handson experience of in-depth analytics projects using real data. Students will use the most advanced Machine Learning libraries available in Python, R and MATLAB to gather and organize data as well as to train, validate and test their empirical models. Knowledge of statistical software is recommended. Pre- or Corequisite: ECON 4743 or ISYS 4193. (Typically offered: Fall)

## Finance (FINN)

Alexey Malakhov
Department Chair
475 Business Building
479-575-4505
Email: amalakhov@walton.uark.edu
Finance Department Website (https://walton.uark.edu/departments/ finance/)

The academic mission of the department of finance is to provide an educational experience that:

- Stimulates student learning through open dialogue and informative discussion both inside and outside the classroom;
- Actively engages students in their own learning through problembased casework, participation in real-world business activities, and internships in the financial community; and
- Prepares students to successfully meet the rigors of the challenging and diverse career opportunities in finance.

Students who elect to major in finance can choose from one of five concentrations: banking, financial analytics, financial management/ investment, risk management, and real estate. This choice should reflect the student's primary career focus and electives should be used to complement the coursework in the chosen concentration. Careers in finance that are analytically oriented will generally require proficiency in accounting, economics, and quantitative methods. In contrast, careers in finance that are sales or management oriented will generally require marketing and management skills. Finance majors are strongly encouraged to consult with departmental faculty advisers and/or the department chair in developing their curriculum.

## Requirements for Finance Major with Banking Concentration

| Major Course Requirements |  |  |
| :--- | :--- | :--- |
| FINN 3013 | Financial Analysis | 3 |
| FINN 3053 | Financial Markets and Institutions | 3 |
| FINN 3103 | Financial Modeling | 3 |


| FINN 3703 | International Finance | 3 |
| :---: | :---: | :---: |
| Maximum of 27 hours of FINN courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track. |  |  |
| Junior/Senior Level Business Electives |  | 12 |
| Concentration hours |  | 12 |
| Total Hours |  | 36 |
| Banking Concentration |  |  |
| FINN 3133 | Commercial Banking | 3 |
| FINN 4313 | Advanced Commercial Banking | 3 |
| Choose one of the following three courses: |  | 3 |
| FINN 3933 | Real Estate Principles |  |
| FINN 4123 | Valuing New Ventures |  |
| FINN 4163 | Advanced Financial Modeling |  |
| Choose any other Finance 3000 or 4000 level classes or one of the following interdisciplinary electives listed below: |  | 3 |
| Accounting |  |  |
| ACCT 3723 | Intermediate Accounting I |  |
| ACCT 3753 | Intermediate Accounting II |  |
| Economics |  |  |
| ECON 4433 | Experimental Economics |  |
| Information Systems |  |  |
| ISYS 2263 | Principles of Information Systems |  |
| ISYS 4213 | ERP Fundamentals |  |
| Strategy, Entrepreneurship \& Innovation |  |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| SEVI 4433 | Small Enterprise Management |  |
| Marketing |  |  |
| MKTG 3553 | Consumer Behavior |  |
| MKTG 3633 | Marketing Research |  |
| Supply Chain Management |  |  |
| SCMT 3613 | SOURCE: Procurement and Supply Management |  |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics |  |
| Total Hours |  | 12 |

## Finance B.S.B.A. with Banking Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| MATH 2053 Finite Mathematics (Satisfies <br> General Education Outcome 2.1), 2,4 | $\mathbf{3}$ |  |
| BUSI 1111 Freshman Business Connection |  |  |

SCMT 2103 Integrated Supply Chain 3 Management ${ }^{3}$
MGMT 2103 Managing People and
Organizations ${ }^{3}$
ISYS 1123 Business Application Knowledge 3
Computer Competency ${ }^{4}$
BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies General
Education Outcomes 1.2 and 5.1) ${ }^{4}$
ACCT 2013 Accounting Principles ${ }^{4}$
BUSI 1033 Data Analysis and Interpretation ${ }^{4}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency $=$ ECON 2203) ${ }^{4}$
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Year Total:
Second Year
Fall

ACCT 2023 Accounting Principles II ${ }^{4} 3$
FINN 2043 Principles of Finance ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103) ${ }^{4}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{4}$
Fine Arts/Humanities - State Minimum Core
${ }_{7}$ (Satisfies General Education Outcome 3.1 or 3.2$)^{6}$,

Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment and Demographic Diversity Requirement) ${ }^{5}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{4}$
3 hours general education elective
MKTG 3433 Introduction to Marketing ${ }^{3}$
or ISYS 2103 Business Information Systems
Science - State Minimum Core (Satisfies General Education Outcome 3.4)
All pre-business requirements should be met by end of term
Year Total:

| Third Year | Fall |
| :--- | ---: |
|  | 3 |
| MKTG 3433 Introduction to Marketing |  |
| or ISYS 2103 Business Information Systems |  |
| FINN 3013 Financial Analysis | 3 |
| FINN 3103 Financial Modeling | 3 |

## Units

Spring

| Fine Arts/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{6}$, 7 | 3 |  |
| :---: | :---: | :---: |
| U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2) | 3 |  |
| FINN 3053 Financial Markets and Institutions | 3 |  |
| FINN 3133 Commercial Banking |  |  |
| SEVI 3013 Strategic Management (Satisfies |  |  |
| General Education Outcome 6.1) |  |  |
| Junior Senior Business Electives |  |  |
| General Education Electives |  |  |
| Year Total: | 15 |  |
| Fourth Year | Units |  |
|  | Fall Spring |  |
| FINN 3703 International Finance | 3 |  |
| Finance Concentration Elective | 3 |  |
| Junior/Senior Business Elective | 3 |  |
| Science - State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| FINN 4313 Advanced Commercial Banking |  | 3 |
| Finance or Interdisciplinary Electives |  |  |
| Junior Senior Business Elective |  |  |
| General Education Electives |  |  |
| Year Total: | $13 \quad 15$ |  |
| Total Units in Sequence: 120 |  |  |
| ${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053. <br> 2 Must be completed prior to BUSI 1033. <br> ${ }^{3}$ Must be completed prior to SEVI 3013. <br> ${ }^{4}$ Must be completed prior to taking any 3000 or 4000 level business courses. |  |  |
|  |  |  |
| ${ }^{5}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033. |  |  |
| ${ }^{6}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include: <br> ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H. |  |  |
| ${ }^{7}$ The Humanities Elective courses which satisfy the General Educatio Outcome 3.2 include: <br> AAST 2023, ANTH 1033, ARCH 1003, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003,ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level). |  |  |

## Requirements for B.S.B.A. in Finance with Financial Analytics Concentration

| Major Course Requirements |  |  |
| :--- | :--- | :--- |
| FINN 3013 | Financial Analysis | 3 |
| FINN 3053 | Financial Markets and Institutions | 3 |
| FINN 3103 | Financial Modeling | 3 |
| FINN 3703 | International Finance | 3 |
| Maximum of 27 hours of FINN courses in department (core, major, |  |  |
| elective). More than 27 hours allowed if the extra courses are part of |  |  |
| interdisciplinary minor or collateral track. |  |  |
| Junior/Senior Level Business Electives | $\mathbf{1 2}$ |  |
| Concentration hours | $\mathbf{1 2}$ |  |
| Total Hours | $\mathbf{3 6}$ |  |

## Financial Analytics Concentration

| FINN 4163 | Advanced Financial Modeling | 3 |
| :--- | :--- | :--- |
| FINN 4323 | Financial Data Analytics I | 3 |
| FINN 4333 | Financial Data Analytics II | 3 |
| Choose any other Finance 3000 or 4000 level class or one of the | 3 |  |
| following interdisciplinary electives listed below: |  |  |
| Accounting |  |  |
| ACCT 3723 | Intermediate Accounting I |  |
| ACCT 3753 | Intermediate Accounting II |  |
| Economics |  |  |
| ECON 4743 | Introduction to Econometrics |  |
| ECON 4753 | Forecasting |  |

Information Systems
ISYS 4193 Business Analytics and Visualization
ISYS 4213 ERP Fundamentals
Strategy, Entrepreneurship \& Innovation
SEVI 3933 Entrepreneurship and New Venture Development
SEVI 4433 Small Enterprise Management
Supply Chain Management
SCMT 3613 SOURCE: Procurement and Supply Management
SCMT 3623 PLAN: Inventory and Forecasting Analytics
Total Hours

## Finance B.S.B.A. with Financial Analytics Concentration

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |


| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| :---: | :---: | :---: |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{3}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{3}$ |  |  |
| BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  |  |
| Satisfies General Education Outcome3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) ${ }^{3}$ <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency = ECON 2103) |  |  |
| Year Total: | 16 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles II ${ }^{3}$ | 3 |  |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |
| Satisfies General Education Outcome3.3: |  |  |
| ECON 2013 Principles of Macroeconomics (ACTS <br> Equivalency = ECON 2103) ${ }^{3}$ <br> or ECON 2023 Principles of Microeconomics <br> (ACTS Equivalency = ECON 2203) | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| Fine Art/Humanities - State Minimum Core ${ }_{6}^{(S a t i s f i e s ~ G e n e r a l ~ E d u c a t i o n ~ O u t c o m e ~} 3.1$ or 3.2) ${ }^{5}$, | 3 |  |
| Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 , as well as the Social Issues, Multicultural Environment and Demographic Diversity Requirement) ${ }^{4}$ |  |  |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) ${ }^{3}$ |  |  |
| 3 hours general education elective |  |  |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ or ISYS 2103 Business Information Systems |  |  |
| Science - State Minimum Core (Satisfies General Education Outcome 3.4) |  |  |
| All pre-business requirements should be met by the end of the term |  |  |
| Year Total: | 15 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ | 3 |  |

THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Finance Major with Financial Management/ Investment Concentration

Major Course Requirements

| FINN 3013 | Financial Analysis |
| :--- | :--- |
| FINN 3053 | Financial Markets and Institutions |
| FINN 3103 | Financial Modeling |
| FINN 3703 | International Finance |
| Maximum of 27 hours of FINN courses in department (c |  |
| elective). More than 27 hours allowed if the extra course |  |
| interdisciplinary minor or collateral track. |  |
| Junior/Senior Level Business Electives |  |
| Concentration hours |  |
| Total Hours |  |
| Financial Management/Investment |  |
| Concentration |  |

Choose one of the following options: 6

| Option 1: Any two of the seven courses listed below: |  |
| :--- | :--- |
| FINN 3063 | Investments |
| FINN 3603 | Corporate Finance |
| FINN 4123 | Valuing New Ventures |
| FINN 4133 | Advanced Investments |
| FINN 4173 | Energy Finance |
| FINN 4233 | Advanced Corporate Finance |
| FINN 4243 | New Venture Finance |
| Option 2: |  |

FINN 4143 Portfolio Management I
FINN 4153 Portfolio Management II
Option 3:
FINN 3163 Fixed Income Securities I
FINN 3173 Fixed Income Securities II
Choose any other two Finance 3000 or 4000 level classes or two of 6 the following interdisciplinary electives listed below:
Accounting

| ACCT 3723 | Intermediate Accounting I |
| :--- | :--- |
| ACCT 3753 | Intermediate Accounting II |


| Economics |  |
| :--- | :--- |
| ECON 4433 | Experimental Economics |
| Information Systems |  |
| ISYS 2263 | Principles of Information Systems |
| ISYS 4213 | ERP Fundamentals |
| Strategy, Entrepreneurship \& Innovation |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |
| SEVI 4433 | Small Enterprise Management |
| Marketing |  |
| MKTG 3553 | Consumer Behavior |
| MKTG 3633 | Marketing Research |

## Supply Chain Management

SCMT 3613 SOURCE: Procurement and Supply Management

SCMT 3623 PLAN: Inventory and Forecasting Analytics
Total Hours
12

## Finance B.S.B.A. with Financial Management and Investment Concentration

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{3}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{3}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  | 3 |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) ${ }^{3}$ <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency $=$ ECON 2103) |  | 3 |
| Year Total: | 16 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles II ${ }^{3}$ | 3 |  |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) ${ }^{3}$ <br> or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) | 3 |  |

Fine Art/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5}$, 6

Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 , as well as the Social Issues, Multicultural Environment and Demographic Diversity Requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) ${ }^{3}$
3 hours general education elective
MKTG 3433 Introduction to Marketing ${ }^{2}$ or ISYS 2103 Business Information Systems
Social Sciences - State Minimum Core (Satisfies General Education Outcome 3.4)
All pre-business requirements should be met by the end of the term
Year Total: 15

| Third Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ | 3 |  |
| or ISYS 2103 Business Information Systems |  |  |
| FINN 3013 Financial Analysis | 3 |  |
| FINN 3103 Financial Modeling | 3 |  |
| Junior Senior Business Elective | 3 |  |
| Fine Arts/Humanities - State Minimum Core | 3 |  |
| (Satisfies General Education Outcome 3.1 or 3.2), |  |  |

FINN 3053 Financial Markets and Institutions
Finance or Interdisciplinary Elective
SEVI 3013 Strategic Management (Satisfies
General Education Outcome 6.1)
Junior Senior Business Electives
U.S. History or Government - State Minimum Core
(Satisfies General Education Outcome 4.2)
Year Total:
15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| Finance Option Class ${ }^{7}$ | 3 |  |
| Junior Senior Business Electives | 6 |  |
| 3 hours general education electives | 3 |  |
| Science - State Minimum Core (Satisfies General | 4 |  |

Education Outcome 3.4)
FINN 3703 International Finance
Finance Option Class ${ }^{7}$
Finance or Interdisciplinary Elective
General Education Electives
Year Total:
16

## Total Units in Sequence:

${ }^{2}$ Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business classes.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
5 The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1003, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003,ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
7 If student selects Option 2 (FINN 4143 and FINN 4153) under the Financial Management concentration, they must take ACCT 3723 as a junior/senior business elective in Fall of their junior year, FINN 3063 as either a junior/senior business elective or a finance/interdisciplinary elective in Spring of their junior year. If student selects Option 3 (FINN 3163 and FINN 3173) they must take FINN 3063 as either a junior/ senior business elective or a finance/interdisciplinary elective in their junior year.

## Finance Major with Real Estate Concentration

Major Course Requirements

| FINN 3013 | Financial Analysis | 3 |
| :--- | :--- | :--- |
| FINN 3053 | Financial Markets and Institutions | 3 |
| FINN 3103 | Financial Modeling | 3 |
| FINN 3703 | International Finance | 3 |
| Maximum of 27 hours of FINN courses in department (core, major, |  |  |
| elective). More than 27 hours allowed if the extra courses are part of |  |  |
| interdisciplinary minor or collateral track. |  |  |
| Junior/Senior Level Business Electives | $\mathbf{1 2}$ |  |
| Concentration hours | $\mathbf{1 2}$ |  |
| Total Hours | $\mathbf{3 6}$ |  |

## Real Estate Concentration

FINN 3933 Real Estate Principles 3
FINN 4413 Real Estate Appraisal 3

FINN 4433 Real Estate Finance and Investment 3
Choose any other Finance 3000 or 4000 level class or one of the 3
following interdisciplinary electives listed below:
Accounting
ACCT 3723 Intermediate Accounting I
ACCT 3753 Intermediate Accounting II

## Economics

ECON 4433 Experimental Economics
Information Systems

| ISYS 2263 | Principles of Information Systems |
| :---: | :---: |
| ISYS 4213 | ERP Fundamentals |
| Strategy, Entrepreneurship \& Innovation |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |
| SEVI 4433 | Small Enterprise Management |
| Marketing |  |
| MKTG 3553 | Consumer Behavior |
| MKTG 3633 | Marketing Research |
| Supply Chain Management |  |
| SCMT 3613 | SOURCE: Procurement and Supply Management |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics |

Total Hours

## Finance B.S.B.A. with Real Estate Concentration <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency $=$ BLAW 2003) ${ }^{2}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{3}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{3}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  | 3 |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS Equivalency $=$ ECON 2203) ${ }^{3}$ or ECON 2013 Principles of Macroeconomics (ACTS Equivalency $=$ ECON 2103) |  | 3 |
| Year Total: | 16 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles $\mathrm{II}^{3}$ | 3 |  |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |

Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency $=$ ECON 2103) ${ }^{3}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{3}$
Fine Arts/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2$)^{5 \text {, }}$

Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 , as well as the Social Issues, Multicultural Environment and Demographic Diversity Requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency $=$ MATH 2203) ${ }^{3}$
3 hours general education elective
MKTG 3433 Introduction to Marketing ${ }^{2}$
or ISYS 2103 Business Information Systems
Science - State Minimum Core (Satisfies General Education Outcome 3.4)
All pre-business requirements should be met by the end of the term
Year Total: 15

| Third Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ | 3 |  |
| or ISYS 2103 Business Information Systems | 3 |  |
| FINN 3013 Financial Analysis | 3 |  |
| FINN 3933 Real Estate Principles | 3 |  |
| Fine Arts/Humanities - State Minimum Core |  |  |
| (Satisfies General Education Outcome 3.1 or 3.2) $^{5}$, |  |  |
| 6 | 3 |  |

(Satisfies General Education Outcome 4.2)
FINN 3053 Financial Markets and Institutions
FINN 3103 Financial Modeling
SEVI 3013 Strategic Management (Satisfies
General Education Outcome 6.1)
Junior Senior Business Electives
General Education Elective
Year Total:

Fourth Year | Units |
| ---: |
| Spring |

FINN 4433 Real Estate Finance and Investment 3
Finance or Interdisciplinary Elective
Junior Senior Business Elective

Science - State Minimum Core (Satisfies General
Education Outcome 3.4)
Year Total:
15

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
${ }^{2}$ Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1003, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003,ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Finance Major with Risk Management Concentration

Major Course Requirements

| FINN 3013 | Financial Analysis | 3 |
| :--- | :--- | :--- |
| FINN 3053 | Financial Markets and Institutions | 3 |
| FINN 3103 | Financial Modeling | 3 |
| FINN 3703 | International Finance | 3 |
| Maximum of 27 | hours of FINN courses in department (core, major, |  |

Concentration hours 12
Total Hours

## Risk Management Concentration

| FINN 3623 | Risk Management | 3 |
| :--- | :--- | :--- |
| FINN 4733 | Life and Health Insurance I | 3 |
| FINN 4833 | Property and Casualty Insurance I | 3 |
| Choose any other Finance 3000 or 4000 level class or one of the <br> following interdisciplinary electives listed below:  | 3 |  |

## Accounting

ACCT 3723 Intermediate Accounting I
ACCT 3753 Intermediate Accounting II

## Economics

## Strategy, Entrepreneurship \& Innovation

SEVI 3933 Entrepreneurship and New Venture Development SEVI 4433 Small Enterprise Management
Marketing
MKTG 3553 Consumer Behavior
MKTG 3633 Marketing Research

## Supply Chain Management

SCMT 3613 SOURCE: Procurement and Supply Management
SCMT 3623 PLAN: Inventory and Forecasting Analytics
Total Hours
12

## Finance B.S.B.A. with Risk Management Concentration

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency | 3 |  |
| BLAW 2013 The Legal Environment of <br> Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS <br> Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{3}$ |  | 3 |
| ACCT 2013 Accounting Principles ${ }^{3}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  | 3 |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) ${ }^{3}$ <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency $=$ ECON 2103) |  | 3 |
| Year Total: | 16 | 15 |


| Second Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles $\mathrm{II}^{3}$ | 3 |  |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) ${ }^{3}$ <br> or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| Fine Arts/Humanities - State Minimum Core <br>  | 3 |  |
| Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 , as well as the Social Issues, Multicultural Environment and Demographic Diversity Requirement) ${ }^{6}$ |  | 3 |
| MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203) ${ }^{3}$ |  | 3 |
| 3 hours general education elective |  | 3 |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ or ISYS 2103 Business Information Systems |  | 3 |
| Science - State Minimum Core (Satisfies General Education Outcome 3.4) |  | 4 |
| All pre-business requirements should be met by the end of the term |  |  |
| Year Total: | 15 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ or ISYS 2103 Business Information Systems | 3 |  |
| FINN 3013 Financial Analysis | 3 |  |
| FINN 3623 Risk Management | 3 |  |
| General Education Electives | 3 |  |
| FINN 3053 Financial Markets and Institutions |  | 3 |
| FINN 4833 Property and Casualty Insurance I |  | 3 |
| SEVI 3013 Strategic Management (Satisfies General Education Outcome 6.1) |  | 3 |
| Junior/Senior Business Electives |  | 3 |
| U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2) |  | 3 |
| Year Total: | 12 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| FINN 3703 International Finance | 3 |  |
| FINN 4733 Life and Health Insurance I | 3 |  |
| Junior Senior Business Electives | 6 |  |
| General Education Elective | 3 |  |
| FINN 3103 Financial Modeling |  | 3 |
| Finance or Interdisciplinary Electives |  | 3 |
| Junior Senior Business Elective |  | 3 |

Fine Arts/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2$)^{4}$, 5

Science - State Minimum Core (Satisfies General
Education Outcome 3.4)
Year Total:
15
16

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
${ }^{2}$ Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013 , or THTR 1013 H .
5 The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1003, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003,ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).
${ }^{6}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.

## Finance Minors for Business Students

The Department of Finance offers two minor options for Walton College students in the areas of Banking/Financial Management/ Investment and Insurance/Real Estate. The minors require completion of 15 hours of study with all of the upper level courses applied toward the minor taken in residence. Students must complete ACCT 2023 as a prerequisite to upper division Finance course requirements. The 15 hours include the following options and courses:

| 1. Banking/Financial Management/Investment |
| :--- |
| FINN $3013 \quad$ Financial Analysis |
| Select two of the following: |
| FINN 3053 |
| FINN 3103 Financial Markets and Institutions <br> FINN 3703 Financial Modeling <br> Select two of the following:  <br> FINN 3063 Investments <br> FINN 3133 Commercial Banking <br> FINN 330 V Finance Study Abroad <br> FINN 3603 Corporate Finance <br> FINN 4133 Advanced Investments <br> FINN 4233 Advanced Corporate Finance |


| FINN 4313 | Advanced Commercial Banking |  |
| :--- | :--- | ---: |
| Total Hours |  | $\mathbf{1 5}$ |
| 2. Insurance/Real Estate |  |  |
| Select five of the following: |  |  |
| FINN 3003 | Personal Financial Management |  |
| FINN 330V | Finance Study Abroad |  |
| FINN 3623 | Risk Management |  |
| FINN 4733 | Life and Health Insurance I |  |
| FINN 4833 | Property and Casualty Insurance I |  |
| FINN 3933 | Real Estate Principles |  |
| FINN 4413 | Real Estate Appraisal |  |
| FINN 4433 | Real Estate Finance and Investment |  |

Total Hours

Students who desire to earn a Finance minor must notify the Walton College Undergraduate Programs Office of their intent to pursue a minor. All requirements for a minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

## Faculty

Acrey, Cash, Ph.D., M.B.A. (University of Arkansas), B.A. (University of Arkansas at Little Rock), Clinical Assistant Professor, 2013.
Carlton, Dale, J.D. (University of Arkansas), B.A. (Ouachita Baptist University), Instructor, 2022.
Driver, Nelson G., B.S. (University of Arkansas), Instructor, 1997.
Hsu, Hung-Chia Scott, Ph.D. (University of North Carolina-Chapel Hill), M.A. (University of Southern California), B.A. (National Taiwan University), Associate Professor, 2015, 2021.
Huang, Lifa, Ph.D., M.B.A. (University of Arkansas), M.S. (Southern Illinois University), Teaching Assistant Professor, 2019.
Jandik, Dobrina, Ph.D. (University of Arkansas), M.Sc.Eng. (University of Chemical Technology), M.B.A. (University of Montana), Clinical Associate Professor, 2017.
Jandik, Tomas, Ph.D. (University of Pittsburgh), M.S., B.S. (Czech Technical University), Professor, Dillard Chair in Corporate Finance, 2000, 2016.

Lee, Wayne Y., Ph.D. (University of California-Los Angeles), M.B.A. (Santa Clara University), B.S.M.E. (De La Salle College, Philippines), Professor, Alice L. Walton Chair in Finance, Garrison Chair in Finance, 1998.

Li, Xi, Ph.D. (Vanderbilt University), M.A. (Tulane University), B.S. (Hunan University), Associate Professor, 2018.
Liu, Kuan, Ph.D. (Boston College, Rutgers University), M.S., B.S. (Wuhan University), Assistant Professor, 2020.
Liu, Pu, Ph.D., M.B.A. (Indiana University at Bloomington), B.S. (National Cheng Kung University), Professor, Harold Dulan Chair in Capital Formation, Robert E. Kennedy Chair in Finance, 1984, 2009.
Lynch, Andrew, Ph.D., M.A. (University of Missouri), B.S. (Southwest Baptist University), Assistant Professor, 2020.
Malakhov, Alexey, Ph.D. (Northwestern University), Ph.D. (University of North Carolina at Charlotte), M.S. (Moscow State University), Associate Professor, Edward W. Reed Endowed Professorship in Finance, 2006, 2013.

Morris, Noel, B.A. (Arkansas Tech University), Instructor, 2007.
Rennie, Craig, Ph.D. (University of Oregon), M.B.A. (Dalhousie University), B.A. (University of Toronto), Associate Professor, Clete and Tammy Brewer Professorship in Business, 2001, 2007.

Riley, Timothy B., Ph.D., M.B.A., B.S.S. (University of Kentucky), Assistant Professor, 2016.
Wang, Yu, Ph.D. (Rutgers University, Boston College), M.S., B.S. (Wuhan University), Assistant Professor, 2020.
Yeager, Timothy J., Ph.D., M.A. (Washington University in St. Louis), Professor, Arkansas Bankers Association Chair in Banking, 2006, 2016.
Zhang, Xinde, Ph.D. (University of North Carolina-Charlotte), M.S. (Youngstown State University), B.S. (Jilin University, China), Visiting Assistant Professor, 2020.

## Courses

FINN 1003. Your Money and Credit. 3 Hours.
Introduction to personal finance. Topics include building wealth, do's and don'ts of credit, car and home ownership. Lectures on theory and concepts; 'learning from the masters' video on best practices; financial simulations and case exercises. (Typically offered: Fall, Spring and Summer)

FINN 2043. Principles of Finance. 3 Hours.
Introduction to the financial system and financial management. Addresses the role and functions of financial intermediaries and markets for fixed income and equity securities; understand how interest rates are determined and assets valued; learn how firms effectively manage financial resources and create value through investment and financing decisions. Prerequisite: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better. (Typically offered: Spring)

## FINN 2043H. Honors Principles of Finance. 3 Hours.

Introduction to the financial system and financial management. Addresses the role and functions of financial intermediaries and markets for fixed income and equity securities; understand how interest rates are determined and assets valued; learn how firms effectively manage financial resources and create value through investment and financing decisions. Prerequisite: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better and honors standing. (Typically offered: Spring)
This course is equivalent to FINN 2043.
FINN 3003. Personal Financial Management. 3 Hours.
Topics covered include budgeting, financial planning, managing credit, taxes, insurance, investments, and retirement planning. (Typically offered: Fall and Spring)

FINN 3013. Financial Analysis. 3 Hours.
Focuses on how information contained in financial statements can be used in financial decision-making; in particular, to assess financial performance, evaluate credit and default risk, forecast future funds needs, weigh the risk-reward of debt vs. equity financing, and develop estimates of intrinsic value using relative valuation metrics and discounted cash flow methods. Prerequisite: FINN 2043 or FINN 3043. (Typically offered: Fall, Spring and Summer)

FINN 3053. Financial Markets and Institutions. 3 Hours.
Role and operations of financial markets and institutions in the economy. Supply of, demand for, funds, interest rates and flow of funds analysis. Financial policies, practices of bank and nonbank financial institutions. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall, Spring and Summer)

## FINN 3063. Investments. 3 Hours.

Introduction to basic investment concepts including: risk-return and meanvariance efficient frontiers, diversification and the pricing of risk, security valuation. Corequisite: FINN 3013. Prerequisite: FINN 2043 or FINN 3043. (Typically offered: Fall, Spring and Summer)

FINN 3103. Financial Modeling. 3 Hours.
Develop strong computer skills in financial analysis by integrating conceptual material with spreadsheet-based numerical solution and simulation techniques. Prerequisite: FINN 2043 or FINN 3043. (Typically offered: Fall, Spring and Summer)

## FINN 3133. Commercial Banking. 3 Hours.

Commercial bank administration, management; loans; bond portfolios; credit analysis; public relations; analysis and interpretations of Federal Reserve regulations and publications. Prerequisite: FINN 2043 or FINN 3043. (Typically offered: Fall and Spring)

## FINN 3163. Fixed Income Securities I. 3 Hours.

The markets and institutional settings of fixed income securities; valuation and risk analysis of money market and capital market instruments; strategies and management of bond portfolios; taxable and tax-exempt securities; U.S. and non-U.S. fixed income securities; term structure of interest rate; and interest rate derivatives as hedging tools. Corequisite: FINN 3103 and FINN 3063. Prerequisite: Departmental consent. (Typically offered: Fall)

## FINN 3173. Fixed Income Securities II. 3 Hours.

Continuation of FINN 3163. The markets and institutional settings of fixed income securities; valuation, and risk analysis of money market and capital market instruments; strategies and management of bond portfolios; taxable and tax-exempt securities; U.S. and non-U.S. fixed income securities; term structure of interest rate; and interest rate derivatives as hedging tools. Prerequisite: FINN 3163. (Typically offered: Spring)

## FINN 330V. Finance Study Abroad. 1-3 Hour.

Providing a balance of theory and practical application, this course provides students with study abroad experiences in finance addressing strategic and operational processes within the global context by understanding international financial systems, culture, geography, history, and politics of other countries. Prerequisite: Departmental consent, completion of 30 hours, ENGL 1013, (MATH 2053 or MATH 2554), ECON 2013, ECON 2023, ISYS 1123, BUSI 1111 and ACCT 2013. (Typically offered: Summer)

FINN 330VH. Honors Finance Study Abroad. 1-3 Hour.
Providing a balance of theory and practical application, this course provides students with study abroad experiences in finance addressing strategic and operational processes within the global context by understanding international financial systems, culture, geography, history, and politics of other countries. Prerequisite: Departmental consent, completion of 30 hours, ENGL 1013, (MATH 2053 or MATH 2554), ECON 2013, ECON 2023, ISYS 1123, BUSI 1111, ACCT 2013 and honors standing. (Typically offered: Summer)
This course is equivalent to FINN 330V.

## FINN 3603. Corporate Finance. 3 Hours.

Develop analytical competencies in financial planning, cost of capital estimation, application of discounted cash flow approach to valuation and capital allocation, lease analysis, evaluation of merger and organizational restructuring strategies. Prerequisite: (FINN 2043 or FINN 3043) and FINN 3013. (Typically offered: Fall, Spring and Summer)

## FINN 3623. Risk Management. 3 Hours.

A survey of the extent and types of risk in business; ways of dealing with business risk; use of security and commodity exchanges; survey of insurance for risk bearing purposes. (Typically offered: Fall and Spring)

## FINN 3703. International Finance. 3 Hours.

Introduction to international financial markets, exchange rates and exchange rate determination, balance of trade measures, and vehicles for foreign trade financing. (Typically offered: Fall, Spring and Summer)

## FINN 3933. Real Estate Principles. 3 Hours.

Comprehensive, covering economics of real estate, real estate value, real estate finance, rights in real property and their transfer, public programs, policies relating to real property. (Typically offered: Fall and Spring)
FINN 4003H. Honors Finance Colloquium. 3 Hours.
Explores important concepts, significant events and/or new developments in the field of Finance. Prerequisite: Senior standing. (Typically offered: Fall)

FINN 4013. Seminar in Personal Financial Planning. 3 Hours.
Explores financial planning function, including contact, data acquisition, plan development and implementation; covers all areas of personal financial planning including investments, insurance, taxes, and estate planning; addresses planning techniques and financial planning ethical issues; emphasis on case studies. Preor Corequisite: FINN 4733. Prerequisite: FINN 3003, FINN 3063, FINN 3623, and ACCT 3843. (Typically offered: Spring)
FINN 410V. Special Topics in Finance. 1-6 Hour.
Explore current events, new developments and special topics in Finance not covered in other courses. Prerequisite: FINN 2043. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## FINN 4123. Valuing New Ventures. 3 Hours.

Valuation methods of entrepreneurial, early-stage, and R\&D finance, including term sheets, valuing full and partial stakes, preferred and participating convertible preferred stock, options, later-round investments, complex structures, R\&D finance, monte carl simulation, real options, binomial trees, and game theory. Prerequisite: Junior Standing. (Typically offered: Fall, Spring and Summer)
FINN 4133. Advanced Investments. 3 Hours.
Sound training in the principles of security analysis and portfolio management and certain advanced techniques of financial management. Modern portfolio theory and its application to portfolio management practices will be emphasized. Prerequisite: FINN 3063. (Typically offered: Fall and Spring)

FINN 4143. Portfolio Management I. 3 Hours.
This course applies modern investment theory to the practical management of the Rebsament Trust. Students prepare a statement of investment objectives, recommend an asset allocation strategy based on a quantitative analysis of asset class returns, and select securities using fundamental analysis. Classes are organized as management meetings and visits to investment firms are an important part of the class. Application, interview and instructor approval are required. Corequisite: FINN 3063 and ACCT 3723. Prerequisite: Departmental consent. (Typically offered: Fall)

## FINN 4153. Portfolio Management II. 3 Hours.

This course is a continuation of FINN 4143. Topics covered include technical analysis, dynamic asset allocation and derivative strategies. Visits to major investments firms and organized exchanges in New York City or other locations are generally planned. Selection is by invitation. Prerequisite: FINN 4143 and by invitation only. (Typically offered: Spring)

## FINN 4163. Advanced Financial Modeling. 3 Hours.

The course applies Business Intelligence (BI), Cloud, Artificial Intelligent (AI) tools to business data for financial analysis and modeling. Data handling and modeling make use of the latest BI platforms such as Microsoft Power BI and Tableau. Prerequisite: FINN 3013 or FINN 3103. (Typically offered: Fall, Spring and Summer)

## FINN 4173. Energy Finance. 3 Hours.

This course is as a comprehensive introduction to the field of Energy Finance, i.e., the application of Finance principles to energy, energy-service, and related industries. Topics covered include: (1) physical fossil fuel markets; (2) physical electricity markets; (3) financially traded energy products; and (4) credit, counterparty, and country risk. Pre- or Corequisite: ACCT 3723. Prerequisite: FINN 3013 and (FINN 2043 or FINN 3043). (Typically offered: Fall and Spring)

## FINN 4233. Advanced Corporate Finance. 3 Hours.

Addresses complex and multifaceted issues and problems in financial decisionmaking. Prerequisite: FINN 3603. (Typically offered: Irregular)

## FINN 4243. New Venture Finance. 3 Hours.

Explores early-stage funding sources and the startup ecosystem, due diligence when seeking funding, and the issues that arise about governance and control when seeking funding, including a deep dive into term sheets and capitalization tables. Prerequisite: Junior Standing. (Typically offered: Fall, Spring and Summer)

## FINN 4313. Advanced Commercial Banking. 3 Hours.

Problems and cases emphasizing application of analytical tools and techniques in commercial bank risk measurement and management. Evaluation of small business credit risk; analysis of liquidity, capital, and interest rate risk; stress testing; hedging risk with derivatives. Prerequisite: FINN 3133. (Typically offered: Spring)

FINN 4323. Financial Data Analytics I. 3 Hours.
This course provides students with a broad understanding of: the general principles and techniques of advanced programming languages; familiarity with its applications to financial data warehousing and extraction; competency and proficiency in its use in processing, analyzing, and visualization of data; and the development, implementation, and evaluation of algorithmic strategies. Prerequisite: FINN 3013 or FINN 3103. (Typically offered: Fall, Spring and Summer)

## FINN 4333. Financial Data Analytics II. 3 Hours.

This course provides an in-depth study of financial data analysis and emphasizes popular financial models and trading strategies. We will particularly emphasize the use of quantitative methods and data-driven approaches in backtesting and analyzing the risk/return tradeoff of financial models and trading strategies. Prerequisite: FINN 4323. (Typically offered: Fall, Spring and Summer)

FINN 4413. Real Estate Appraisal. 3 Hours.
Valuation theories applied to real estate. Characteristics which affect value are studied and valuation methodologies are learned and performed by the students. Focus is on residential real estate but all types of real estate are addressed. Students prepare in actual residential appraisal report. Prerequisite: FINN 3933. (Typically offered: Fall)

FINN 4433. Real Estate Finance and Investment. 3 Hours.
Consideration of professional aspects of the real estate field. Emphasis is placed upon finance techniques and investment analysis. The focus is on commercial real estate. Brokerage, property management, appraisal, property development and current problems are also addressed. Students prepare a feasibly study on a commercial development project. Corequisite: FINN 3103. Prerequisite: FINN 3933. (Typically offered: Spring)

FINN 450V. Independent Study. 1-3 Hour.
Permits students on an individual basis to explore selected topics in finance, with the consent of instructor. (Typically offered: Irregular)

FINN 4733. Life and Health Insurance I. 3 Hours.
Basic principles, functions, uses of life and health insurance; types of policy contracts; calculation of premiums, reserves; organizations, management, supervision, of companies. (Typically offered: Fall)

FINN 4833. Property and Casualty Insurance I. 3 Hours.
Forms and functions of fire, marine, inland marine, automobile title, miscellaneous types insurance and bonds for business, personal use. (Typically offered: Spring)

## General Business (GBUS)

## John Delery

Management Department Chair
402 Business Building
479-575-4007
General Business is the broadest major in Walton College. It is offered by the Department of Management, which also offers a major in management (p.670). This online program provides the student exposure to all facets of the business process. Maximum flexibility is retained by the student. At the same time, careful use of general and junior/senior business electives allows the student to concentrate additional coursework in one or more selected functional areas.

The Walton College Online Bachelor of Science in Business Administration degree with a major in General Business is intended to provide students the opportunity to enroll in a four-year degree
program online. In addition, the online degree affords students who have completed an Associate's Degree in Business or those who are near completion of their business degree, the option to complete a B.S.B.A. with a major in General Business.

## Requirements for Online B.S.B.A. in General Business

## Admission

Students must apply to the University of Arkansas, Office of Admissions for consideration and indicate their interest in the online program on the admissions application. Students are required to submit an application for admission, official transcripts (either high school or college transcripts or both), and a $\$ 40$ application fee.

## Requirements for the Online Program

1. Walton College Policy for On-Campus Students Taking Online Courses
Any student pursuing an on-campus (face to face) undergraduate degree from the University of Arkansas may take up to 35 percent of the total credit hours of regular online (semester/summer) and self-paced online (correspondence) courses for degree credit. On-campus students will be restricted to 2 courses ( 8 hours) of online classes within their first 30 hours. WCOB 1111 Freshman Business Connection, however, cannot be taken online. Thereafter, students can take up to 12 hours of online classes per academic year. For students who have transferred academic credits from other institutions, the percentage of total credit hours obtained at the University of Arkansas through regular online (semester/summer) and self-paced online (correspondence) courses for degree credit cannot exceed 35 percent of the total remaining hours needed to complete the degree after transfer credits are accounted for. In addition, on-campus students cannot enroll in online courses unless they have a cumulative GPA of at least 2.0 (after their first 15 hours of undergraduate coursework) and they have no more than one outstanding incomplete in a previous online course.
2. Walton College Policy for Online Students Taking On-Campus Courses
Online students will be restricted to 8 hours of on-campus classes within their first 30 hours. Thereafter, students can take up to 12 hours of on-campus classes per academic year, but no more than 35 percent of their total credit hours on campus may be used in total toward their degree. Ordinarily, no more than 60 hours of coursework can be transferred from the online degree program into an on-campus degree program. Transfer credits for students who transfer into the online degree program will be evaluated the same as transfer credits for the on-campus program. For students who have transferred academic credits from other institutions, the percentage of total credit hours obtained at the University of Arkansas through regular online (semester/summer) and self-paced online (correspondence) courses for degree credit cannot exceed 35 percent of the total remaining hours needed to complete the degree after transfer credits are accounted for.
3. Online students will have priority registration for online courses.

For questions regarding the Online Degree in General Business, please visit online.uark.edu (http://online.uark.edu/) or contact the Undergraduate Programs Office at 479-575-4622.

## Course Requirements

Students must complete the following 21 hours by selecting one 3hour course from each of the following seven groups: (Sequencing of courses will be determined by choices made)

| Group 1 |  |
| :---: | :---: |
| ACCT 3533 | Accounting Technology |
| ACCT 3723 | Intermediate Accounting I |
| ACCT 3843 | Fundamentals of Taxation I |
| Group 2 |  |
| ECON 3033 | Microeconomic Theory |
| ECON 3133 | Macroeconomic Theory |
| ECON 4333 | Economics of Organizations |
| Group 3 |  |
| FINN 3013 | Financial Analysis |
| FINN 3053 | Financial Markets and Institutions |
| FINN 3623 | Risk Management |
| Group 4 |  |
| ISYS 2263 | Principles of Information Systems |
| ISYS 3293 | Systems Analysis and Design |
| ISYS 4213 | ERP Fundamentals |
| Group 5 |  |
| MGMT 4243 | Ethics and Corporate Responsibility |
| MGMT 4253 | Leadership |
| MGMT 4263 | Organizational Change and Development |
| Group 6 |  |
| MKTG 3553 | Consumer Behavior |
| MKTG 3633 | Marketing Research |
| MKTG 4433 | Retail Strategy |
| Group 7 |  |
| SCMT 3443 | DELIVER: Transportation and Distribution Management |
| SCMT 3613 | SOURCE: Procurement and Supply Management |
| SCMT 3643 | International Logistics |
| Maximum of 27 hours of courses in any one department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track. |  |
| Junior/Senior B | usiness Electives |

## General Business B.S.B.A. Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan for General Business should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| MATH 2053 Finite Mathematics (Satisfies <br> General Education Outcome 2.1), 2,4 | $\mathbf{3}$ |  |

BUSI 1111 Freshman Business Connection ${ }^{4} \quad 1$
SCMT 2103 Integrated Supply Chain 3
Management ${ }^{3}$

MGMT 2103 Managing People and
3
Organizations ${ }^{3}$
ISYS 1123 Business Application Knowledge -
Computer Competency ${ }^{2,4}$
BLAW 2013 The Legal Environment of
Business (ACTS Equivalency = BLAW 2003) ${ }^{3}$
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies General
Education Outcomes 1.2 and 5.1) ${ }^{4}$
ACCT 2013 Accounting Principles ${ }^{4}$
BUSI 1033 Data Analysis and Interpretation ${ }^{4}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203) ${ }^{4}$
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Year Total:
Second Year Fall

SEVI 2053 Business Foundations ${ }^{4} 3$
or ACCT 2023 Accounting Principles II
Choose one of the following options:
ISYS 2103 Business Information Systems ${ }^{3}$
FINN 2043 Principles of Finance ${ }^{3}$
MKTG 3433 Introduction to Marketing ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency $=$ ECON 2103) ${ }^{4}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{4}$
Fine Art/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or $3.2)^{6,7}$
Social Sciences - State Minimum Core (Satisfies
General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment and Demographic Diversity Requirement) ${ }^{5}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{4}$
3 hours general education elective
Select one of the following:
ISYS 2103 Business Information Systems ${ }^{3}$
FINN 2043 Principles of Finance ${ }^{3}$
MKTG 3433 Introduction to Marketing ${ }^{3}$
Science - State Minimum Core (Satisfies General Education Outcome 3.4)
All pre-business requirements should be met by the end of the term
Year Total:

## Units

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Select one of the following: | 3 |  |
| ISYS 2103 Business Information Systems |  |  |
| MKTG 3433 Introduction to Marketing ${ }^{3}$ |  |  |
| FINN 2043 Principles of Finance (whichever was not taken earlier) ${ }^{3}$ |  |  |
| Science - State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| Group 1 Course (see above) | 3 |  |
| Group 2 Course (see above) | 3 |  |
| SEVI 3013 Strategic Management (Satisfies General Education Outcome 6.1) |  | 3 |
| Group 3 Course (see above) |  | 3 |
| Group 6 Course (see above) |  | 3 |
| Junior Senior Business Elective |  | 3 |
| U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2) |  | 3 |
| Year Total: | 13 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| Group 5 Course (see above) | 3 |  |
| Junior Senior Business Elective | 6 |  |
| Group 7 Course (see above) | 3 |  |
| General Education Electives | 3 |  |
| Group 4 Course (see above) |  | 3 |
| Junior Senior Business Elective |  | 6 |
| Fine Art/Humanities - State Minimum Core <br>  |  |  |
| General Education Electives |  | 6 |
| Year Total: | 15 | 15 |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
${ }^{2}$ Must be completed prior to BUSI 1033.
${ }^{3}$ Must be completed prior to SEVI 3013.
${ }^{4}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{5}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{6}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{7}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003,

ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Courses

## MGMT 2103. Managing People and Organizations. 3 Hours.

Study of the process of acquiring and managing Human Capital, focusing on the organizational behavior, legal, economic, and technical issues concerned with business decisions about acquiring, motivating, and retaining employees; emphasis given to the development, implementation, and assessment of policies and practices consistent with legal, social, human, and environmental dynamics. Corequisite: Walton College students: MATH 2053 or MATH 2554 each with a grade of C or better. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better. (Typically offered: Fall, Spring and Summer)

## MGMT 2103H. Honors Managing People and Organizations. 3 Hours.

Study of the process of acquiring and managing Human Capital, focusing on the organizational behavior, legal, economic, and technical issues concerned with business decisions about acquiring, motivating, and retaining employees; emphasis given to the development, implementation, and assessment of policies and practices consistent with legal, social, human, and environmental dynamics. Corequisite: Walton College students: MATH 2053 or MATH 2554 each with a grade of C or better and honors standing. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of $C$ or better and honors standing. (Typically offered: Fall, Spring and Summer) This course is equivalent to MGMT 2103.

MGMT 2423. Social Issues, Diversity and Ethics in a Global Business Environment. 3 Hours.

Ethics, diversity, and culture are significant issues organizations must address within their workforces as they strive for success in a global business environment. Organizations that understand these factors will be better positioned to attract and retain talent, ensure employee and firm success, and foster continued positive contributions to society. In this course, students will explore how organizations can embrace and address critical social issues directly and ethically. Students will leave the course with an enhanced understanding of the incredible diversity of employees in terms of personal characteristics, culture, and beliefs, and with an increased awareness of important tools for enhancing employee and organizational success in today's business climate. Prerequisite: BUSI 1111 with a grade of $C$ or better will only apply to business majors; there are no prerequisites for non-business majors. (Typically offered: Fall and Spring)

## MGMT 3533. Alternative Dispute Resolution. 3 Hours.

This immersion into the divergent forms of conflict/dispute resolution will expose students to the dynamics of one of the leading disciplines in the workplace and society as a whole. Students will be presented with a comprehensive analysis of divergent aspects of conflict resolution strategies such as negotiation, mediation, arbitration, neutral fact finding, settlement conferences, summary trials, conciliation and facilitation. Confrontational negotiating styles and illustrations will be contrasted with topical strategies such as mutual gains. Prerequisite: Junior standing. (Typically offered: Irregular)

MGMT 3563. Management Concepts and Organizational Behavior. 3 Hours.
Business students may not receive credit for this course. Course introduces students to fundamental concepts of management practice with particular emphasis on managing human behavior in organizations. Addresses the planning, organizing, directing, and controlling functions performed by managers as these functions relate to managing human resources. Provides survey of critical management concepts; enables students to develop analytical and problem solving skills through case studies and experimental exercises. Students may not receive credit for both MGMT 3563 and MGMT 2103. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Irregular)
MGMT 3653. Creating and Leading a Diverse Workforce. 3 Hours.
Study of the process of creating and leading a diverse workforce, focusing on the knowledge and skills necessary for creating a culture that embraces and makes diversity work; examines the many dimensions of diversity with emphasis on understanding the range of cultural behaviors and expectations, cultural communication, and building diverse work teams. Special attention will be given to developing talent management competencies, such as recruiting, coaching, mentoring, career development, and evaluating and measuring the effects of diversity initiatives. Prerequisite: Junior standing. (Typically offered: Irregular)

## MGMT 4103. Special Topics in Management. 3 Hours.

Explores trends, concepts, and important developments in management as they impact on organizational performance. Topics are selected by the Management Department faculty for each semester the course is offered. (Typically offered: Irregular) May be repeated for degree credit.

## MGMT 4243. Ethics and Corporate Responsibility. 3 Hours.

A comprehensive and critical examination of traditional and current ethical theories and approaches that guide business decision-making, ethical issues that affect business decisions, and ethics related to the various business disciplines. (Typically offered: Fall and Spring)

## MGMT 4253. Leadership. 3 Hours.

This course offers a foundation for understanding and evaluating organizational leadership. It is designed to assist students in developing frameworks for understanding and enacting leadership. This course examines topics such as the nature and foundation of the leader-follower relationship, models that explain effective leadership, and the interface of leadership with gender, ethics, and culture. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)
MGMT 4263. Organizational Change and Development. 3 Hours.
This course will develop diagnostic and intervention skills that can be applied to identifying and overcoming problems of morale and productivity in organizations. A variety of behavioral methods will be covered. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)
MGMT 4273. Leading Groups and Teams. 3 Hours.
This course focuses on applying theory and principles of leadership, groups, and teams to develop the knowledge and skills necessary to effectively lead and work in teams. It is designed to help students develop confidence as team leaders by focusing on (1) improving team leadership skills related to factors such as communication, decision-making, and conflict management, and (2) self-reflection of their own personalities, skills, and experiences as important and relevant predictors of their effectiveness as team leaders. Pre- or Corequisite: MGMT 4253. (Typically offered: Fall and Spring)
MGMT 450V. Independent Study. 1-3 Hour.
Permits students on individual basis to explore selected topics in management. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

MGMT 4633. Faith, Spirituality, and the Workplace. 3 Hours.
An in-depth and interactive survey of faith and spirituality in the workplace. Provides students with a foundational knowledge of various faith traditions and forms of spirituality, including non-theist perspectives. Highlights the interconnections between faith traditions. Encourages exploration and identification of personal value systems and their origins. Develops skills that enable meaningful interaction with individuals from diverse faith and spiritual backgrounds. Examines the growing body of academic research on faith and spirituality in the workplace. Studies the management challenges and opportunities inherent in developing faith-friendly workplaces. Examines the different ways modern organizations are approaching faith and spirituality in the workplace. Offers perspectives from, and provides the opportunity to engage with, multiple religious, spiritual, and business leaders. Prerequisite: Junior Standing. (Typically offered: Irregular)
MGMT 4943. Talent Acquisition and Management. 3 Hours.
In-depth study of theoretical, legal, methodological, and substantive issues related to selection, performance appraisal, and development of employees. Students participate in individual and group projects designed to provide theoretical and practical skills related to staffing. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)

## MGMT 4953. Organizational Rewards and Compensation. 3 Hours.

Develops an understanding of reward systems theory and its application to the design of compensation systems. Provides theoretical and legal background and practical applications for the use of reward systems in attracting, motivating, and retaining employees. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)

## MGMT 4963. People Analytics. 3 Hours.

There is a growing demand for data-based decision making in organizations, and Human Resources is no exception. In this course, students will gain an appreciation for the ways in which people data can be used to make more effective Human Resources decisions. Students will gain experience manipulating a data set, performing basic analyses, interpreting results, and make data-driven recommendations, while learning how people analytics fit into advancing larger organizational goals. Distilling and communicating results using visual media is also emphasized. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)

## MGMT 4983. Talent Development. 3 Hours.

A comprehensive approach to developing talent demonstrates an organization's commitment to its employees and facilitates the organization's ability to meet strategic goals. This course focuses on applying the theories and principles of coaching, mentoring, training, and development to cultivate the knowledge and skills necessary to effectively develop talent. It is designed to provide an understanding of how coaching, mentoring, training, and development can be performed in a variety of situations and to demonstrate the relevance of these functions for effective leadership. Key relational and communication skills essential for talent development are emphasized. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)

## Human Resources Management (HMRG)

John Delery

Management Department Chair
402 Business Building
479-575-3266
Management Department Website (https://walton.uark.edu/departments/ management/)

The Human Resource Management Major is designed to prepare students for careers in human resource-related occupations. Among issues and areas addressed are Human Resource analytics, management-employee relations, quality of work life, compensation and other reward systems, talent acquisition, and training and development.

The Human Resource Management Major emphasizes the importance of integrating individual goals and organizational objectives.

## Requirements for B.S.B.A. in Human Resource Management

All Human Resource Management majors must complete the following 6 hours of coursework: MGMT 4943 and MGMT 4953. Students must also take at least 6 hours from the following courses: MGMT 3653, MGMT 4983, and MGMT 4963. An additional 12 hours of credit are required from specified management and non-management courses in order to complete the requirements for the major.

Human Resource Management Major Requirements: The major in Human Resource Management requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a management major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.
Major Course Requirements
MGMT 4943
Talent Acquisition and Management
MGMT 4953 Organizational Rewards and Compensation

| Select at least tw | of the following: |  |
| :---: | :---: | :---: |
| MGMT 3653 | Creating and Leading a Diverse Workforce |  |
| MGMT 4963 | People Analytics |  |
| MGMT 4983 | Talent Development |  |


| MGMT 3533 | Alternative Dispute Resolution |
| :--- | :--- |
| MGMT 4103 | Special Topics in Management |
| MGMT 4243 | Ethics and Corporate Responsibility |
| MGMT 4253 | Leadership |
| MGMT 4263 | Organizational Change and Development |
| MGMT 4633 | Faith, Spirituality, and the Workplace |
| MGMT 4273 | Leading Groups and Teams |
| SEVI 3233 | Corporate Innovation |
| SEVI 3673 | Social Entrepreneurship |
| SEVI 3933 | Entrepreneurship and New Venture Development |
| SEVI 4433 | Small Enterprise Management |
| SEVI 4583 | International Management |
| SEVI 4993 | Entrepreneurship Practicum |
| ECON 3533 | Labor Economics |
| ECON 4333 | Economics of Organizations |
| HIST 4943 | U.S. Labor History, from 1877-present |
| PSYC 3013 | Social Psychology |
| PSYC 3063 | Psychology of Diversity |
| Total Hours |  |

## Human Resources Management B.S.B.A. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) | 3 |  |
| BUSI 1111 Freshman Business Connection | 1 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  |  |
| ACCT 2013 Accounting Principles |  |  |
| BUSI 1033 Data Analysis and Interpretation |  |  |
| ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) (Satisfies General Education Outcome 3.3) |  |  |
| Natural Science - State Minimum Core (Satisfies General Education Outcome 3.4) |  |  |
| Year Total: | 16 |  |


| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| SEVI 2053 Business Foundations | 3 |  |
| ISYS 2103 Business Information Systems ${ }^{2}$ | 3 |  |
| MATH 2043 Survey of Calculus (ACTS | 3 |  |
| Equivalency = MATH 2203) |  |  |
| Social Sciences - State Minimum Core (Satisfies <br> General Education Outcomes 3.3 and 4.1, as well | 3 |  |
| as the Social Issues, Multicultural Environment, <br> and Demographic Diversity Requirement) |  |  |
| Fine Art/Humanities - State Minimum Core <br> (Satisfies General Education Outcome 3.1 or 3.2) |  |  |
| 6 |  |  |

SCMT 2103 Integrated Supply Chain 3
Management ${ }^{2}$
MGMT 2103 Managing People and

Organizations ${ }^{2}$


## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
3 Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses which satisfy the General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include:
ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:

ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, ENGL 2023, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
6 The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, ENGL 2023, GNST 2003, GNST 2003H, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Diversity, Equity and Inclusion Management Undergraduate MicroCertificate

The Diversity, Equity and Inclusion Management Undergraduate MicroCertificate certifies that students have completed coursework that prepares them for the rapidly growing area of DEI within organizations. Students will explore what diversity, equity and inclusion means to organizations and how they can successfully manage these three elements. This includes managing the regulatory environment associated with DEI, along with exploring how DEI influences organizations and organizational outcomes.

Diversity, Equity and Inclusion Management Undergraduate
MicroCertificate Requirements: The DEI Management Undergraduate MicroCertificate requires nine credit hours that may also be used to fulfill the requirements for an undergraduate degree. The specific requirements are listed below. See an advisor for course selection.

| Required Courses |  |  |
| :---: | :---: | :---: |
| MGMT 3653 | Creating and Leading a Diverse Workforce | 3 |
| Select two of the following: |  | 6 |
| BUSI 3033 | The African American Experience in Business |  |
| MGMT 4633 | Faith, Spirituality, and the Workplace |  |
| SEVI 4583 | International Management |  |
| Total Hours |  | 9 |

## Faculty

Delery, John, Ph.D. (Texas A\&M University), M.S. (Memphis State
University), B.S. (Tulane University of Louisiana), Professor, Raymond F. Orr Chair in Management, 1992, 2009.
Launder, John, M.A. (University of Missouri), B.A. (Westminster College), Instructor, 2011.
Lueke, Sarah B., Ph.D. (University of Akron), M.S. (Indiana UniversityPurdue University-Indianapolis), B.A. (University of Wisconsin-Madison), Teaching Assistant Professor, 2019.
O'Leary-Kelly, Anne M., Ph.D. (Michigan State University), B.A.
(University of Michigan), Professor, William R. and Cacilia Howard Chair in Management, 1997, 2012.
Pullen, Brian, M.A. (University of Arkansas), B.S. (Arkansas Tech University), Instructor, 2005.
Rosen, Chris, Ph.D. (University of Akron), M.A. (Appalachian State University), B.A. (Washington and Lee University), Professor, 2006, 2015.
Schaffer, Meline M., Ph.D., M.S. (Clemson University), Teaching Assistant Professor, 2019.
Simon, Lauren, Ph.D., B.S.B.A., B.S. (University of Florida), Associate
Professor, 2016, 2018.

Soignet, Denise Breaux, Ph.D. (Florida State University), M.B.A., B.S. (Nicholls State University), Teaching Associate Professor, 2010.
Sprandel, Heather, Ed.D., M.Ed. (University of Arkansas), B.A. (DePaul University), Instructor, 2019.
Stoverink, Adam, Ph.D. (Texas A\&M University), M.B.A. (St. Louis University), B.S.B.A. (University of Missouri), Associate Professor, 2017, 2021.

Wilmot, Michael, Ph.D. (University of Minnesota), M.S., B.A. (University of Nebraska), Assistant Professor, 2020.
Zhang, Ying, Ph.D. (University of Hong Kong), M.S. (Peking University), B.S. (Jilin University), Assistant Professor, 2021.

## Information Systems (ISYS)

Shaila Miranda
Department Chair
204 Business Building
479-575-4500
Email: smiranda@walton.uark.edu
Information Systems Department Website (https://walton.uark.edu/ departments/information-systems/)

The curriculum in information systems is designed to prepare graduates for careers in solving business problems with applications of computer technology.

Graduates with a degree in Information Systems are sought by hundreds of companies for many different types of positions, such as programmer, analyst, database administrator, and web developer, among others. Graduates are now programming, analyzing and designing systems, consulting, teaching, and solving business problems across the country.

Three concentrations are offered:

- Blockchain Enterprise Systems
- Business Analytics
- Enterprise Resource Planning

The department also offers three minors: one in business analytics, one in data and cybersecurity management and one in information systems for business students.

The department also offers a certificate of proficiency in cybersecurity and data management, and three microcertificates - Blockchain, Business Analytics and Business Cybersecurity.

## Information Systems Major Requirements

The major in Information Systems requires 27 hours of major in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 30 hours is allowed in the Information Systems major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor. The Information Systems department encourages its majors to seek an interdisciplinary minor. See an adviser for selection of courses.

NOTE: Course requirements in the Information Systems major total 27 credit hours. Because of prerequisites, students should allow two full years (24 months) to complete this coursework. Prerequisites are strictly enforced.

## Course Requirements in the Major for All Concentrations

Principles of Information Systems
ISYS 3293
Systems Analysis and Design

| ISYS $3393 \quad$ Business Application Development Fundamentals |
| :--- |
| ISYS $4283 \quad$ Business Database Systems |
| ISYS $4363 \quad$ Business Project Development |
| ISYS $4213 \quad$ ERP Fundamentals |
| Note: These required courses represent a common body of |
| knowledge for all information systems majors. Majors must select one |
| of the following concentrations and must complete nine additional |
| hours of coursework in the elected concentration. |
| Maximum of 30 hours of ISYS courses in department (core, major, |
| elective). More than 27 hours allowed if the extra courses are part of |
| interdisciplinary minor or collateral track. |
| Junior/Senior Level Business Electives |
| Concentration Courses |
| 1 CSCE 2004 Programming Foundations I is recommended as a |
| general education elective. |

## Business Analytics Concentration

ISYS 4193 Business Analytics and Visualization 3
ISYS $4293 \quad 3$
3 hour 3000/4000 level ISYS or Business Elective 3
Total Hours

## Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan for Information Systems should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS |  | 3 |
| Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{3}$ |  |  |
| ACCT 2013 Accounting Principles ${ }^{3}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  | 3 |
| Satisfies General Education Outcome 3.3: |  |  |


| ECON 2023 Principles of Microeconomics (ACTS |  | 3 |
| :---: | :---: | :---: |
| Equivalency $=$ ECON 2203) ${ }^{3}$ |  |  |
| or ECON 2013 Principles of Macroeconomics |  |  |
| (ACTS Equivalency = ECON 2103) |  |  |
| Year Total: | 16 | 15 |
| Second Year |  | Units |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles II ${ }^{3}$ or SEVI 2053 Business Foundations | 3 |  |
| ISYS 2103 Business Information Systems ${ }^{2}$ | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |
| $\text { Equivalency }=\mathrm{ECON} 2103)^{3}$ |  |  |
|  |  |  |
| or ECON 2023 Principles of Microeconomics |  |  |
| (ACTS Equivalency = ECON 2203) |  |  |
| ENGL 1023 Composition II (ACTS Equivalency <br> = ENGL 1023) (Satisfies General Education |  |  |
| Outcome 1.1) ${ }^{3}$ |  |  |
| Fine Arts/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5}$, 6 |  |  |
| Social Sciences - State Minimum Core (Satisfies 3 |  |  |
| General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement) ${ }^{4}$ |  |  |
| MATH 2043 Survey of Calculus (ACTS |  | 3 |
| $\text { Equivalency = MATH 2203) }{ }^{3}$ |  |  |
| 3 hours general education elective |  |  |
| ISYS 2263 Principles of Information Systems |  |  |
| Science - State Minimum Core (Satisfies General Education Outcome 3.4) |  |  |
|  |  |  |
| All pre-business requirements should be met by the end of term |  |  |
| Year Total: | 15 | 16 |
| Third Year |  | Units |
|  | Fall | Spring |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ | 3 |  |
| ISYS 3293 Systems Analysis and Design | 3 |  |
| Junior/Senior Business Electives | 3 |  |
| Science - State Minimum Core (Satisfies General Education Outcome 3.4) | 4 |  |
| ISYS 3393 Business Application Development |  | 3 |
| Fundamentals |  |  |
| ISYS 4213 ERP Fundamentals |  | 3 |
| SEVI 3013 Strategic Management ((Satisfies |  | 3 |
| General Education Outcome 6.1) |  |  |
| Junior/Senior Business Electives |  | 3 |
| U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2) |  | 3 |
| Year Total: | 16 | 15 |


| Fourth Year |  | Uni |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ISYS 4283 Business Database Systems | 3 |  |
| ISYS 4193 Business Analytics and Visualization | 3 |  |
| Junior/Senior Business Electives | 3 |  |
| 3 hour 3000/4000 level ISYS or Business Elective | 3 |  |
| General Education Electives |  |  |
| ISYS 4293 Business Intelligence | 3 |  |
| ISYS 4363 Business Project Development |  | 3 |
| Fine Arts/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) 5, 6 | 3 |  |
| General Education Electives |  | 3 |
| Year Total: | 15 | 2 |
| Total Units in Sequence: |  | 20 |
| ${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053. <br> ${ }^{2}$ Must be completed prior to MGMT 3013. <br> ${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses. |  |  |
| ${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033. |  |  |
| ${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include: <br> ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H. |  |  |
| ${ }^{6}$ The Humanities Elective courses which satisfy the General Educatio Outcome 3.2 include: <br> AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level). |  |  |

## Information Systems Major Requirements

The major in Information Systems requires 27 hours of major in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 30 hours is allowed in the Information Systems major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor. The Information Systems department encourages its majors to seek an interdisciplinary minor. See an adviser for selection of courses.

NOTE: Course requirements in the Information Systems major total 27 credit hours. Because of prerequisites, students should allow two full years ( 24 months) to complete this coursework. Prerequisites are strictly enforced.

| Course Requirements in the Major for All Concentrations |  |
| :--- | :--- |
| ISYS 2263 | Principles of Information Systems |
| ISYS 3293 | Systems Analysis and Design |
| ISYS 3393 | Business Application Development Fundamentals |
| ISYS 4283 | Business Database Systems |
| ISYS 4363 | Business Project Development |
| ISYS 4213 | ERP Fundamentals |

Note: These required courses represent a common body of knowledge for all information systems majors. Majors must select one of the following concentrations and must complete nine additional hours of coursework in the elected concentration.

Maximum of 30 hours of ISYS courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.
Junior/Senior Level Business Electives
Concentration Courses
${ }^{1}$ CSCE 2004 Programming Foundations I is recommended as a general education elective.

## Enterprise Resource Planning Concentration

| ISYS 4223 | ERP Configuration and Implementation | 3 |
| :--- | :--- | :--- |
| ISYS 4233 | Seminar in ERP Development | 3 |
| 3 hour 3000/4000 level ISYS or Business Elective | 3 |  |
| Total Hours | $\mathbf{9}$ |  |

## Information Systems B.S.B.A. with Enterprise Resource Planning Concentration Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan for Information Systems should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| MATH 2053 Finite Mathematics (Satisfies <br> General Education Outcome 2.1), | 3 |  |
| BUSI 1111 Freshman Business Connection |  |  |
| SCMT 2103 Integrated Supply Chain | 1 |  |
| Management |  |  |
| MGMT 2103 Managing People and <br> Organizations |  |  |
| ISYS 1123 Business Application Knowledge - <br> Computer Competency |  |  |
| BLAW 2013 The Legal Environment of <br> Business (ACTS Equivalency = BLAW 2003) |  |  |
| 2 <br> COMM 1313 Public Speaking (ACTS | 3 |  |
| Equivalency = SPCH 1003) (Satisfies General <br> Education Outcomes 1.2 and 5.1) | 3 |  |

BUSI 1033 Data Analysis and Interpretation ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency $=$ ECON 2203) ${ }^{3}$
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Year Total:
16

Second Year | Units |
| ---: |
| Spring |

ACCT 2023 Accounting Principles II $^{3} 3$
or SEVI 2053 Business Foundations
ISYS 2103 Business Information Systems ${ }^{2}$
3
Satisfies General Education Outcome 3.3:
9 ECON 2013 Principles of Macroeconomics (ACTS
Equivalency $=$ ECON 2103) ${ }^{3}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1) ${ }^{3}$
Fine Art/Humanities State Minumum Core
(Satisfies General Education Outcome 3.1 or 3.2) 5, 6

Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency $=$ MATH 2203) ${ }^{3}$
3 hours general education elective
ISYS 2263 Principles of Information Systems
Science Course State Minimum Core (Satisfies General Education Outcome 3.4)
All pre-business requirements should be met by end of term
Year Total:

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |
| MKTG 3433 Introduction to Marketing |  |  |
| ISYS 3293 Systems Analysis and Design | 3 |  |
| Junior Senior Business Electives | 3 |  |
| Science - State Minimum Core (Satisfies General | 3 |  |

## Education Outcome 3.4

ISYS 3393 Business Application Development 3
Fundamentals
ISYS 4213 ERP Fundamentals 3
SEVI 3013 Strategic Management ((Satisfies 3
General Education Outcome 6.1)
Junior Senior Business Electives
U.S. History or Government State Minimum Core 3
(Satisfies General Education Outcome 4.2)

## Units

Spring

Year Total:
Fourth Year
ISYS 4283 Business Database Systems
ISYS 4223 ERP Configuration and
Implementation
Junior Senior Business Electives
3 hour 3000/4000 level ISYS or Business Elective
General Education Electives
ISYS 4363 Business Project Development
ISYS 4233 Seminar in ERP Development
General Education Electives
Fine Arts/Humanities State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2$)^{5}$,
6

15

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Information Systems Major Requirements

The major in Information Systems requires 27 hours of major in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 30 hours is allowed in the Information Systems major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor. The Information Systems department encourages its majors to seek an interdisciplinary minor. See an adviser for selection of courses.

NOTE: Course requirements in the Information Systems major total 27 credit hours. Because of prerequisites, students should allow two full

Units
Fall Spring
3
3
3
3
3

1 CSCE 2004 Programming Foundations I is recommended as a general education elective.

## Blockchain Enterprise Systems Concentration

| ISYS 4173 | Blockchain Fundamentals | 3 |
| :--- | :--- | :--- |
| ISYS 4453 | Introduction to Blockchain Applications | 3 |
| ISYS 4463 | Blockchain Enterprise Systems Development | 3 |
| Total Hours |  | $\mathbf{9}$ |

## Information Systems B.S.B.A. with Blockchain Enterprise Systems Concentration <br> Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan for Information Systems should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |

BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies General
Education Outcomes 1.2 and 5.1) ${ }^{3}$
ACCT 2013 Accounting Principles ${ }^{3}$
BUSI 1033 Data Analysis and Interpretation ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203) ${ }^{3}$
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Year Total:

| Second Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| ACCT 2023 Accounting Principles II <br> or SEVI 2053 Business Foundations <br> ISYS 2103 Business Information Systems |  |  |
| 2 <br> Satisfies General Education Outcome 3.3: | 3 |  |
| ECON 2013 Principles of Macroeconomics (ACTS | 3 |  |
| Equivalency = ECON 2103) <br> or ECON 2023 Principles of Microeconomics <br> (ACTS Equivalency = ECON 2203) | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency <br> = ENGL 1023) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| Fine Art/Humanities Course State Minimum Core <br> (Satisifies General Education Outcome 3.1 or 3.2) |  |  |
| 6 |  |  |

Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{3}$
3 hours general education elective
ISYS 2263 Principles of Information Systems
Science Course State Minimum Core (Satisfies
General Education Outcome 3.4)
All pre-business requirements should be met by end of term
Year Total:

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |
| MKTG 3433 Introduction to Marketing |  |  | Education Outcome 3.4)

ISYS 3393 Business Application Development Fundamentals
ISYS 4173 Blockchain Fundamentals
ISYS 4213 ERP Fundamentals

Sy

## Development

Fine Arts/Humanities State Minimum Core 3
(Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5,}$
General Education Electives 3
Year Total: 15

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, and SOCI 2033.
${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003,MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Business Analytics Minor

The Walton College offers an interdisciplinary minor in Business Analytics. Analytics are currently used by many companies for applications ranging from strategic management of data to day operations to customer insights to retail analytics to developing and maintaining a competitive edge.
3 The minor requires completion of 15 hours of study with all of the upper division courses applied toward the minor taken in residence. The 15 hours include:

| ISYS 4193 | Business Analytics and Visualization | 3 |
| :--- | :--- | :--- |
| ISYS 4293 | Business Intelligence | 3 |
| ISYS 4393 | Seminar in Applied Business Analytics | 3 |
| Select two courses (6 hours) from the following: | 6 |  |
| ACCT 3543 | Accounting Analytics |  |
| ISYS 4213 | ERP Fundamentals |  |
| FINN 3013 | Financial Analysis |  |
| ECON 4743 | Introduction to Econometrics |  |
| ECON 4753 | Forecasting |  |
| MGMT 4243 | Ethics and Corporate Responsibility |  |
| MKTG 3633 | Marketing Research |  |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics |  |

Students who desire to earn a Business Analytics minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for a minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper division minor requirements must be taken in residence.

## Data and Cybersecurity Management Minor

The Data and Cybersecurity Management minor in the Information Systems Department of the Walton College of Business is designed to develop graduates able to help organizations assess and detect threats while securing and protecting data and data-driven systems against a myriad of threats such as malicious software, hacking, insider threats, and other cybercrimes. Students will also learn and apply best industry practices to minimize data collection, protect client and individual privacy, and otherwise further ethical data management. Students will not only learn about cybersecurity, crime, and privacy law, but will also learn about techniques of risk assessment, continuity planning, and threat detection. This will include learning with respect to behavioral aspects, ethics, legal considerations, and best practices in cyber security management. The minor requires completion of 15 hours of study with all of the upper-level courses applied toward the minor in residence. The 15 hours include the following courses:

| Required Core Courses (9 hours) |  |  |
| :--- | :--- | :--- |
| ISYS 4013 | Principles of Data and Cybersecurity | 3 |
| ISYS 4023 | Network and Data Security in a Changing World | 3 |
| ISYS 4043 | Cybersecurity, Crime and Data Privacy Law | 3 |
|  | Fundamentals |  |

## Total Hours

Students who desire to earn a Data and Cybersecurity Management minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

## Information Systems Minor for Business Students

The Department of Information Systems offers a minor for Walton College students desiring more knowledge of information systems to assist them in their careers. The minor requires completion of 15 hours of study with all of the upper level courses applied toward the minor in residence. The 15 hours include the following courses:

| ISYS 2263 | Principles of Information Systems | 3 |
| :--- | :--- | :--- |
| ISYS 3293 | Systems Analysis and Design | 3 |
| ISYS 3393 | Business Application Development Fundamentals | 3 |
| ISYS 4213 | ERP Fundamentals | 3 |
| Select one of the following: | 3 |  |

ISYS 4223 ERP Configuration and Implementation
Any 3-hour Junior/Senior level ISYS course

## Total Hours

Students who desire to earn an Information Systems minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

## Certificate of Proficiency in Cybersecurity and Data Management

Students pursuing the Certificate of Proficiency in Cybersecurity and Data Management Program in the Information Systems Department of the Sam M. Walton College of Business must meet the admission requirements for the University of Arkansas and have completed the following courses (or equivalent): ISYS 1123, ECON 2143, ACCT 2013, and WCOB 1033.

| Required Core Courses (3 hours) |  |  |
| :--- | :--- | :--- |
| ISYS 4013 | Principles of Data and Cybersecurity | 3 |
| ISYS 4023 | Network and Data Security in a Changing World | 3 |
| ISYS 4043 | Cybersecurity, Crime and Data Privacy Law | 3 |
|  | Fundamentals |  |

## Total Hours

All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the certificate. All upper-division certificate requirements must be taken in residence.

## Undergraduate Microcertificates

The undergraduate microcertificates in Information Systems are credentials designed to provide undergraduate business students with a microcertificate in specific IS knowledge areas - Business Analytics, Blockchain, Enterprise Resource Planning (ERP), and Business Cybersecurity. The demand for skilled professionals in information systems continues to outpace the supply of qualified applicants. Each
nine-hour microcertificate program is open to individuals with backgrounds in any business discipline.

## Blockchain Undergraduate MicroCertificate

Requirements: To receive the undergraduate Blockchain MicroCertificate, students are required to take 9 hours of coursework in the Walton College of Business. Students are advised to check prerequisites prior to enrolling in a course.

## Required Courses

ISYS 4173 Blockchain Fundamentals 3

Select both courses from the following:
ISYS 4453 Introduction to Blockchain Applications
ISYS 4463 Blockchain Enterprise Systems Development
Or, one from above and one of the following:
ISYS 3273 Cryptocurrency
ISYS 4013 Principles of Data and Cybersecurity
ISYS 4213 ERP Fundamentals
Total Hours

## Business Analytics Undergraduate MicroCertificate

Requirements: To receive the undergraduate Business Analytics MicroCertificate, students are required to take 9 hours of coursework in the Walton College of Business. Students are advised to check prerequisites prior to enrolling in a course.

## Required Courses

| ISYS 4193 | Business Analytics and Visualization | 3 |
| :--- | :--- | :--- |
| ISYS 4293 | Business Intelligence | 3 |

Select one of the following: 3

| ISYS 4013 | Principles of Data and Cybersecurity |
| :--- | :--- |
| ISYS 4173 | Blockchain Fundamentals |
| ISYS 4213 | ERP Fundamentals |
| ISYS 4393 | Seminar in Applied Business Analytics |

Total Hours

## Business Cybersecurity Undergraduate MicroCertificate

To receive the undergraduate Business Cybersecurity MicroCertificate, students are required to take 9 hours of coursework in the Walton College of Business. Students are advised to check prerequisites prior to enrolling in a course:

## Required Courses

| ISYS 4013 | Principles of Data and Cybersecurity |
| :--- | :--- |
| ISYS 4023 | Network and Data Security in a Changing World |

Select one course from the following:
ISYS 4033 Advanced Information Security Management
ISYS 4043 Cybersecurity, Crime and Data Privacy Law Fundamentals
ISYS 4173 Blockchain Fundamentals
ISYS 4213 ERP Fundamentals
Total Hours
The undergraduate microcertificates in the Information Systems are credentials designed to provide undergraduate business students with

MicroCertificate in specific IS knowledge areas - Business Analytics, Blockchain, Enterprise Resource Planning (ERP), and Business Cybersecurity. The demand for skilled professionals in information systems continues to outpace the supply of qualified applicants. Each 9hour microcertificate program is open to individuals with backgrounds in any business discipline.

## Enterprise Resource Planning Undergraduate Microcertificate: (9 hours)

Requirements: To receive the undergraduate ERP Microcertificate, students are required to take 9 hours of coursework in the Walton College of Business. Students are advised to check prerequisites prior to enrolling in a course.

## Required Courses

ISYS 4213 ERP Fundamentals
Select both of the following:

```
ISYS 4223 ERP Configuration and Implementation
```

    ISYS 4233 Seminar in ERP Development
    Or, one from above and one of the following:
ISYS 4013 Principles of Data and Cybersecurity
ISYS 4173 Blockchain Fundamentals
Total Hours

## Faculty

Anand, Abhijith, Ph.D. (University of Waikato), M.I.S. (University of Wollongog), B.E. (K.S. Institute of Technology), Assistant Professor, 2017.

Bristow, Susan E., Ed.D., M.B.A., B.S.B.A. (University of Arkansas), Teaching Associate Professor, 1997, 2020.
Conway, Daniel, Ph.D., M.A. (Indiana University), B.A. (Augustana College), Teaching Professor, 2019.
Cronan, Timothy P., Ph.D. (Louisiana Tech University), M.S. (South Dakota State University), B.S. (University of Southwestern Louisiana), Professor, M.D. Matthews Endowed Chair in Information Systems, 1979. Davis, EmmaLe, Ph.D. (University of Arkansas), M.Ed., B.S. (University of Oklahoma), Teaching Assistant Professor, 2022.
Dereszynski, Michael, M.I.S. (University of Arkansas), B.S. (Milwaukee School of Engineering), Instructor, 2019.
Freeze, Ron, Ph.D. (Arizona State University), M.B.A. (University of Missouri-Kansas City), B.S. (General Motors Institute), Clinical Professor, 2015, 2021.
Gastineau, Jana, M.S., B.S. (Arkansas State University), Instructor, 2022.

Grover, Varun, Ph.D. (University of Pittsburg), M.B.A. (Southern Illinois University), B.S. (Indian Institute of Technology), Distinguished Professor, David D. Glass Chair in Information Systems, 2017.
Harmon, Kevin, Ph.D., M.B.A., M.S. (Texas Tech University), B.S. (Truman State University), Assistant Professor, 2022.
Hoehle, Hartmut, Ph.D., B.Com. (Victoria University of Wellington), Visiting Professor, 2013, 2022.
Kapoor, Gaurav, Ph.D. (University of Florida), M.S. (Drexel University), B.E. (University of Mumbai), Teaching Assistant Professor, 2023.

Keiffer, Elizabeth, Ph.D., M.A. (University of Arkansas), B.S. (East Central University), Teaching Assistant Professor, 2016, 2019. Lacity, Mary, Ph.D. (University of Houston), B.S.B.A. (Pennsylvania State University), Distinguished Professor, David D. Glass Chair in Information Systems, 2018, 2022.
Liu, Yanran, Ph.D. (Georgia State University), M.M., B.Mgt. (China University of Geosciences), Visiting Assistant Professor, 2021.

Mallampalli, Kamesh, Ph.D. (University of Georgia), M.M. (Indian Institute of Management), B.S. (University of Delhi), Visiting Assistant Professor, 2022.
Mullins, Jeff, Ph.D., M.A., B.S. (University of Arkansas), Assistant Professor, 2006, 2018.
Nolan, Steve, Ph.D., M.A. (University of Missouri-Columbia), B.A. (Westminster College), Instructor, 2017.
Pierce, Lisa, M.S. (University of Georgia), B.S. (University of Tennessee), Instructor, 2014.
Sabherwal, Rajiv, Ph.D. (University of Pittsburgh), P.G.D.M. (Indian Institute of Management), B.S.E.E. (Regional Engineering College, India), Distinguished Professor, Edwin and Karlee Bradberry Chair, 2011, 2019.
Shook, Carole, M.S.B.A., B.S.B.A. (University of Arkansas), Teaching Associate Professor, 1999, 2023.
Steelman, Zachary R., Ph.D., M.I.S. (University of Arkansas), B.B.A. (Northeastern State University), Associate Professor, 2017, 2022.
Sykes, Tracy Ann, Ph.D. (University of Arkansas), B.S. (University of Maryland-College Park), Associate Professor, 2011, 2016.
Syler, Rhonda A., Ph.D. (Auburn University), M.B.A. (Columbus State
University), M.S. (Kansas State University), B.S. (Middle Tennessee State University), Teaching Assistant Professor, 2016.
Weng, Qin, Ph.D. (University of Pittsburg), M.S. (Virginia Commonwealth University), B.A. (Beijing Foreign Studies University), Assistant Professor, 2018.

Young, Amber, Ph.D. (University of Oklahoma), M.B.A. (Oklahoma
Christian University), B.S.Ed. (University of Oklahoma), Associate Professor, 2018, 2023.

## Courses

ISYS 1123. Business Application Knowledge - Computer Competency. 3 Hours.
An introduction to computer literacy using information business application software; email/Internet; word processing; spreadsheets; presentation; database; collaborative/groupware; and integration of computer applications. Introduces the student to computer Concepts and Microsoft Office (Word, Excel, Windows, and PowerPoint) to manage finances, work with formulas, charts and graphics, and the development of professional worksheets and presentations. Students learn business computing through appropriate self-paced, computer-based instruction. (Typically offered: Fall, Spring and Summer)
ISYS 2001. Principles of Business Application Development. 1 Hour. An introduction to the principles of business application development and the development process for business applications using a current high level languages such as Python, Swift, etc. Discussions include topics such as development teams, project management, design thinking, coding, and entrepreneurship; essential skill sets for future leaders. Students learn about coding using languages such as Python and Swift while developing their own applications. (Typically offered: Fall and Spring)

## ISYS 2103. Business Information Systems. 3 Hours.

This course presents the fundamentals of business information systems (IS) topics essential to today's business graduate. Applied areas of business will be used to provide the context for the IS topics, business applications, and management challenges. The broad objective of this course is to present students with a business and information systems framework that will allow them to envision how business decisions are enabled and empowered by information systems and technology. Prerequisite: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better. (Typically offered: Fall, Spring and Summer)

ISYS 2103H. Honors Business Information Systems. 3 Hours.
This course presents the fundamentals of business information systems (IS) topics essential to today's business graduate. Applied areas of business will be used to provide the context for the IS topics, business applications, and management challenges. The broad objective of this course is to present students with a business and information systems framework that will allow them to envision how business decisions are enabled and empowered by information systems and technology. Prerequisite: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of $C$ or better and honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to ISYS 2103.
ISYS 2263. Principles of Information Systems. 3 Hours.
This course presents the fundamental concepts used in developing information systems. It provides a framework for students to use throughout their software development coursework. Also includes management of information systems concepts. This course requires extensive use of computer systems. Prerequisite: ACCT 2013, MATH 2053 and ISYS 2103, each with a grade of $C$ or better. (Typically offered: Fall and Spring)
ISYS 3273. Cryptocurrency. 3 Hours.
This course will focus on topics such as a brief history of money, Bitcoin and the origin of cryptocurrency, blockchain system fundamentals (cryptography and consensus algorithms), real-world application with software clients and wallets, as well as assessing the current regulatory environment, financial applications and exchanges. Upon completion, students will understand what constitutes as digital money and how this phenomenon is currently transpiring within an economic, legal, and financial context; will be prepared to learn more about specific financial industry applications; make judgements on viability of certain crypto projects; and speak to challenges facing the future of cryptocurrency. Prerequisite: ISYS 2103 and ACCT 2013, each with a grade of C or better. (Typically offered: Fall and Spring)

## ISYS 3293. Systems Analysis and Design. 3 Hours.

Practice and application of one structured analysis methodology; development of structured analysis specification; exposure to other methodologies; quality assurance and walkthroughs; survey of real systems and their components. Prerequisite: ISYS 2263 or CSCE 2014 with a grade of C or better. (Typically offered: Fall and Spring)
ISYS 3393. Business Application Development Fundamentals. 3 Hours.
Principles of design and development of windows and web applications using cutting edge visual development tools. The programming language will be a modern language used widely in industry, and the focus will be on its use in client-server, web, and/or mobile applications. Pre- or Corequisite: ISYS 3293. Prerequisite: ISYS 2263 or CSCE 2014 with a grade of " C " or better. (Typically offered: Fall and Spring)

## ISYS 4003H. Honors Information Systems Colloquium. 3 Hours.

Explores events, concepts and/or new developments in the field of Computer Information Systems and Quantitative Analysis. Prerequisite: Senior standing and honors standing. (Typically offered: Fall)

## ISYS 4013. Principles of Data and Cybersecurity. 3 Hours.

This course provides students with insight into the cybersecurity and data issues surrounding businesses; fundamental concepts of the study of law - enabling students to understand the basics of reading and briefing a case as well as the process of legal analysis and case procedure and discovery; securing organizational data; detecting and responding to cyber-based security breaches; emerging technologies, and ensuring a secured computing environment for safeguarding company information will be explored. Prerequisite: ACCT 2013. (Typically offered: Fall and Spring)

## ISYS 4023. Network and Data Security in a Changing World. 3 Hours.

This course explores network and data security in the context of today's digital enterprise. In addition to traditional network protocol and security issues, this course will explore security issues unique to cloud environments, data protection, loT ecosystems, ERP systems, and Blockchain deployments. Prerequisite: ISYS 4013 with a grade of $C$ or better. (Typically offered: Fall and Spring)

ISYS 4033. Advanced Information Security Management. 3 Hours.
This course provides students with an in-depth, advanced understanding of cybersecurity and data management. Topics include risk assessment, continuity planning, data protection, threat detection, threat/risk mitigation, and recovery issues and techniques. Current topics in data and cybersecurity will also be included. Prerequisite: ISYS 4023 with a grade of C or better. (Typically offered: Fall and Spring)

## ISYS 4043. Cybersecurity, Crime and Data Privacy Law Fundamentals. 3 Hours.

This course examines the law governing computer crime, data privacy, and cybersecurity. Substantive crimes such as hacking, identity theft, economic espionage, and online threats are discussed. The Fourth Amendment, Privacy, the Wiretap Act, and other limits on law enforcement that might affect private industry developing surveillance tools used by governments are examined. Prerequisite: ISYS 4013. (Typically offered: Fall and Spring)

ISYS 4053. Advanced Cybersecurity, Crime and Privacy Law. 3 Hours.
The course will explore best practices for data privacy and security protection measures, mitigation techniques for privacy and security threats, and privacy and security law. The importance of informational privacy will be highlight and a highlevel overview of U.S. laws and regulations including FTC roles, and government surveillance will be provided. Prerequisite: ISYS 4023 and ISYS 4043. (Typically offered: Fall and Spring)

## ISYS 4173. Blockchain Fundamentals. 3 Hours.

This course provides the fundamental concepts underpinning blockchain technologies. This course focuses on blockchain applications for business. Students will learn about the overall blockchain landscape, including the investments, the size of markets, major players and the global reach, as well as the potential business value of blockchain applications and the challenges that must be overcome to achieve that value. Students will learn enough about the underlying technologies to be well-prepared to develop blockchain applications in future courses. Prerequisite: ISYS 2103 and ACCT 2013, each with a grade of C or better, or CSCE 2004 with a grade of C or better. (Typically offered: Fall and Spring)

ISYS 4193. Business Analytics and Visualization. 3 Hours.
Introductory study of business analytics, visualization, and systems to provide analytics-based information derived from data within and/or external to the organization. Business analytics used to support management in the decision making. Application of tools in business analytics, problem solving, visualization, and decision making. Prerequisite: (Non-business majors: (INEG 3313 or STAT 3013 with a grade of C or better)) or (Business majors: (BUSI 1033 with a grade of C or better)). (Typically offered: Fall)
ISYS 4213. ERP Fundamentals. 3 Hours.
An introduction to enterprise resource planning systems. Students should gain an understanding of the scope of these integrated systems that reach across organizational boundaries and can change how a company does business. Implementation issues are covered, including the importance of change management. Prerequisite: ISYS 2103 and ACCT 2013, each with a grade of C or better, or CSCE 2004, with a grade of C or better. (Typically offered: Fall and Spring)

## ISYS 4223. ERP Configuration and Implementation. 3 Hours.

The process of configuring and implementing an enterprise resource planning system. Business process analysis and integration. Students will develop a company and set up several modules in SAP R/3 for use. Develop understanding of how the business processes work and integrate. Prerequisite: ISYS 4213 with a grade of " C " or better. (Typically offered: Fall)

ISYS 4233. Seminar in ERP Development. 3 Hours.
ERP administration and system development practices. Advanced system support issues related to Enterprise Resource Planning systems that are used in global organizations. Basic ABAP programming. In addition, students will learn how to provide basic systems administration support of the operating system, database, and application systems software levels or ERP systems. Pre- or Corequisite: ISYS 4223 with a grade of "C" or better. (Typically offered: Spring)
ISYS 4243. Current Topics in Computer Information. 3 Hours.
Intensive investigation of selected developments in computer information systems hardware, software, and organization having current impact on computer information systems design and application. Offering an extension of lower-level CIS courses through individual student research and faculty team-teaching of advanced topics. Topical selection made with each course offering. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ISYS 4283. Business Database Systems. 3 Hours.
Introduces student to centralized information system design and implementation for business applications. In-depth study of logical systems modeling; physical file management; and software requirements. Pre- or Corequisite: ISYS 3393.
Prerequisite: ISYS 3293 with a grade of $C$ or better. (Typically offered: Fall)
ISYS 4293. Business Intelligence. 3 Hours.
Business intelligence focuses on creating, developing and storing information and knowledge from internal and external sources to better support business decisions. We will consider techniques from machine learning, data mining, and information retrieval to extract useful knowledge from data, which could be used for business intelligence, personalization or user profiling. Prerequisite: ISYS 4193 with a grade of "C" or better. (Typically offered: Spring)

## ISYS 4363. Business Project Development. 3 Hours.

Review of fundamentals of application processing systems design and development; implementation of such a system by class. Prerequisite: ISYS 3393 and ISYS 4283 each with a grade of $C$ or better. (Typically offered: Spring)
ISYS 4373. Application Development with Java. 3 Hours.
This course covers object-oriented programming concepts and illustrates them via an appropriate object-oriented programming language. Students will be exposed to the design of software objects, creation of software objects, and the use of objects in constructing an information system. Prerequisite: ISYS 3293 with a grade of $C$ or better. (Typically offered: Fall)

## ISYS 4393. Seminar in Applied Business Analytics. 3 Hours.

Application of business analytics, business intelligence, data mining, and data visualization to business problem solving. Business Analytics techniques using current and relevant software are applied to current business problems for presentation to management. Prerequisite: ISYS 4293. (Typically offered: Fall and Spring)

ISYS 4453. Introduction to Blockchain Applications. 3 Hours.
The focus of this course is to expose students to working with mainframe computer systems, large-scale data, and blockchain software \& technologies. This course provides the opportunity for students to gain valuable insight into mainframe coding concepts, SQL, and data in a mainframe operating environment. Prerequisite: ISYS 4173. (Typically offered: Fall)

## ISYS 4463. Blockchain Enterprise Systems Development. 3 Hours.

Accurately capturing and storing business transactions is an important processing function in many businesses. This course provides students with the necessary understanding and skills to develop blockchain and other large-scale data applications in a mainframe environment with high volume. Prerequisite: ISYS 4453 with a grade of "C" or better. (Typically offered: Spring)

## ISYS 450V. Independent Study. 1-3 Hour.

Permits students on individual basis to explore selected topics in data processing and/or Quantitative Analysis. (Typically offered: Fall and Spring)

# Supply Chain Management (SCMT) 

Brian Fugate
Department Chair
546 Willard J. Walker Hall
479-575-4051
J.B. Hunt Transport Department of Supply Chain Management Website (https://walton.uark.edu/departments/supplychain/)

The J.B. Hunt Transport Department of Supply Chain Management offers an undergraduate major leading to a Bachelor of Science in Business Administration degree. The major is designed to prepare students for careers in carrier management, logistics management, and at retailers or in companies that manufacture, sell, and distribute consumer goods to retailers. There is an emphasis on business process integration and students will learn to apply analytical techniques and use the systems approach in managing the flow of materials into and through the production and manufacturing processes of a firm to its customers. Employment opportunities exist in marketing, sales, and operations positions with carriers in all transportation modes, and in positions with shippers having responsibility in one or more areas under logistics management, warehousing, packaging, and materials handling. Opportunities also exist in governmental agencies.

Students may elect to pursue the B.S.B.A. in Supply Chain Management or a Minor in Supply Chain Management in an online format. Students must apply to the University of Arkansas, Office of Admissions for consideration to enroll in the B.S.B.A. and indicate their interest in the online program on the admissions application. Students are required to submit official transcripts (either high school or college transcripts or both), and an application fee. Students interested in pursuing a minor must notify the Walton College Undergraduate Programs Office.

## Requirements for B.S.B.A. in Supply Chain Management

| Major Course Requirements |  |  |
| :---: | :---: | :---: |
| SCMT 3443 | DELIVER: Transportation and Distribution Management | 3 |
| SCMT 3613 | SOURCE: Procurement and Supply Management | 3 |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics | 3 |
| SCMT 3663 | MAKE: Supply Chain Process Improvement | 3 |
| SCMT 4653 | Supply Chain Strategy and Change Management | 3 |
| SCMT 3103 | Supply Chain Management Internship (Alternative industry-based experiential coursework or work experience may be available as an exception through the SCMT 3103 Internship Application (https://walton.formstack.com/forms/scmt3103).) | 3 |
| Choose three hours from the following: |  | 3 |
| SCMT 3643 | International Logistics |  |
| SCMT 3653 | Project Management: Supply Chain New Product Planning and Launch |  |
| SCMT 3633 | Supply Chain Service and Customer Management |  |
| SCMT 4003H | Honors Supply Chain Management Colloquium |  |
| SCMT 4103 | Special Topics in Supply Chain Management |  |
| SCMT 4123 | Environmental, Social and Governance Strategies and Operations in Supply Chains |  |
| SCMT 4233 | Supply Chain Design and Optimization |  |

## SCMT 4633 Supply Chain Performance Management and Analytics

Maximum of 27 hours of SCMT courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.
Junior/Senior Business Electives

## Supply Chain Management Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan for Information Systems should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency $=$ BLAW 2003) ${ }^{2}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS |  | 3 |
| Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{3}$ |  |  |
| ACCT 2013 Accounting Principles ${ }^{3}$ |  | 3 |
| BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  | 3 |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) ${ }^{3}$ <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency = ECON 2103) |  | 3 |
| Year Total: | 16 | 15 |


| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ACCT 2023 Accounting Principles $\\|^{3}$ |  |  |
| or SEVI 2053 Business Foundations |  |  |
| Select one of the following: | 3 |  |

ISYS 2103 Business Information Systems ${ }^{2}$
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing ${ }^{2}$
Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103)
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1)
Fine Arts/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2)
5,6
Social Sciences - State Minimum Core (Satisfies
General Education Outcomes 3.3 and 4.1, as well
as the Social Issues, Multicultural Environment and
Demographic Diversity Requirement)
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203)
3 hours general education elective
Select one of the following:
ISYS 2103 Business Information Systems ${ }^{2}$
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing ${ }^{2}$
Science - State Minimum Core (Satisfies General
Education Outcome 3.4)
ALL pre-business requirements should be met
by end of term
Year Total:
Third Year
Select one of the following:
ISYS 2103 Business Information Systems ${ }^{2}$
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing ${ }^{2}$
Science - State Minimum Core (Satisfies General
Education Outcome 3.4)
SCMT 3443 DELIVER: Transportation and
Distribution Management
SCMT 3613 SOURCE: Procurement and Supply
Management

3000/4000 level SCMT course from elective courses
SCMT 3623 PLAN: Inventory and Forecasting Analytics
SEVI 3013 Strategic Management (Satisfies General Education Outcome 6.1)
SCMT 3103 Supply Chain Management Internship
Junior/Senior Business Elective
U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2)
Year Total:

## Fourth Year

SCMT 3663 MAKE: Supply Chain Process
3

## Improvement

Fall


## Supply Chain Management Minor for Business Students

The Department of Supply Chain Management offers a minor for Walton College students desiring more knowledge of supply chain management to assist them in their careers. The minor requires the completion of 15 hours of study from the following courses:

| SCMT 3443 | DELIVER: Transportation and Distribution Management | 3 |
| :---: | :---: | :---: |
| SCMT 3613 | SOURCE: Procurement and Supply Managemen | 3 |
| Plus an additional nine hours of approved 3000/4000 level SCMT courses |  |  |
| Total Hours |  | 15 |
| Students who desire to earn a Supply Chain Management minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative |  |  |

grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

## Faculty

## Courses

## SCMT 2103. Integrated Supply Chain Management. 3 Hours.

An introduction to integrated supply chain management. Core capabilities in plan, source, make, deliver, service/customer management, new product design, strategy, governance, project management, performance management, technology enablement, and supply chain finance are explored to provide students with a comprehensive cross-functional view of demand-driven value networks. Corequisite: Walton College students: MATH 2053 or MATH 2554 each with a grade of C or better. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better. (Typically offered: Fall and Spring)

## SCMT 2103H. Honors Integrated Supply Chain Management. 3 Hours.

An introduction to integrated supply chain management. Core capabilities in plan, source, make, deliver, service/customer management, new product design, strategy, governance, project management, performance management, technology enablement, and supply chain finance are explored to provide students with a comprehensive cross-functional view of demand-driven value networks. Corequisite: Walton College students: MATH 2053 or MATH 2554 with a grade of $C$ or better and honors standing. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of $C$ or better and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to SCMT 2103.

## SCMT 3103. Supply Chain Management Internship. 3 Hours.

This experience is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the supply chain profession. Prerequisite: Department consent, completion of pre-business core, junior standing, and SCMT 2103 with a grade of C or better. (Typically offered: Fall, Spring and Summer)

SCMT 3103H. Honors Supply Chain Management Internship. 3 Hours.
This experience is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the supply chain profession. Prerequisite: Department consent, completion of pre-business core, junior standing, honors standing and SCMT 2103 with a grade of C or better. (Typically offered: Fall, Spring and Summer)
This course is equivalent to SCMT 3103.
SCMT 3443. DELIVER: Transportation and Distribution Management. 3 Hours. Management of functional delivery and customer service capabilities in demanddriven value networks. Applicable interfaces with enabling capabilities such as governance, performance management, analytics, and technology enablement are evaluated. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 with a grade of C or better. (Typically offered: Fall and Spring)

SCMT 3613. SOURCE: Procurement and Supply Management. 3 Hours. This course covers the critical sourcing and procurement processes: strategic sourcing, source to pay, and supplier relationship management. Additionally, it covers innovative efforts to grow sourcing contribution to demand-driven supply chain integration, including sustainability, technology, and risk management. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 with a grade of C or better. (Typically offered: Fall and Spring)

## SCMT 3623. PLAN: Inventory and Forecasting Analytics. 3 Hours.

The intent of this course is to rigorously examine two key elements of logistics: inventory control and forecasting. Coverage of the former topic specifically focuses on inventory control methods for stochastic demand and lead times. Besides a review of the associated theoretical bases, the implementation of such policies in Excel is a central component of the course. Forecasting topics covered in this course include a review of a variety of forecasting techniques and forecast error measurement. Moreover, the linkage between forecasting and inventory control is discussed. As with inventory control, students will learn how to implement various forecasting techniques in Excel. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 with a grade of $C$ or better. (Typically offered: Fall and Spring)

## SCMT 3633. Supply Chain Service and Customer Management. 3 Hours.

Management of supply chain service quality, relationships, and customer segmentation in demand-driven value networks. Applicable cross-functional interfaces, performance measurement, and integration opportunities for boundary spanning supply chain professionals are discussed with emphasis on value-added behavioral exchange dynamics. Prerequisite: SCMT 3613. (Typically offered: Irregular)

## SCMT 3643. International Logistics. 3 Hours.

Logistics activities in international business with special emphasis on international sourcing and distribution channels, international transportation, import and export procedures, international sale and payment terms, and documentation. Special emphasis is placed on current events and their effect on the management of operations of U.S.-based organizations. Prerequisite: ((ECON 2013 and ECON 2023), or ECON 2143) and SCMT 2103 with a grade of C or better. (Typically offered: Fall and Spring)

## SCMT 3653. Project Management: Supply Chain New Product Planning and

 Launch. 3 Hours.Applies principles and tools of project management to supply chain industry projects in the new product development launch process to ensure alignment with supply chain processes. Experiential learning in collaborative team settings facilitate new product development and launch solutions to demand-driven value network problems. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of C or better. (Typically offered: Fall and Spring)

SCMT 3663. MAKE: Supply Chain Process Improvement. 3 Hours.
The course focuses on the fundamental concepts, techniques, and tools for managing production and improving business processes across the supply chain, in both manufacturing and service contexts. Philosophies, principles, approaches, and techniques students will learn and experience in this course include Lean, Total Quality Management, Theory of Constraints, Practical Scientific Thinking, and Toyota Kata. Prerequisite: SCMT 2103 with a grade of $C$ or better. (Typically offered: Fall and Spring)

## SCMT 4003H. Honors Supply Chain Management Colloquium. 3 Hours.

Explores events, concepts and/or new developments in the field of Supply Chain Management. Prerequisite: Honors standing and ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of $C$ or better. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## SCMT 4103. Special Topics in Supply Chain Management. 3 Hours.

Special topics in supply chain management not available in other courses. Topics are selected by the supply chain faculty for each semester each course is offered. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of $C$ or better. (Typically offered: Irregular)

SCMT 4113. Supply Chain Management Executive in Residence. 3 Hours.
The focus of this course will be executive viewpoints in supply chain management as it relates to relational skill development. The growth of supply chain management has resulted in the need for relational skills and capabilities for supply chain professionals. The purpose of the course is to help students identify not only the current issues of the industry, but also gather various viewpoints about the topics. Each week, an executive will speak with students on a topic of his or her choice. The goal is to allow a broad collection of issues to be presented by and to the students.
Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of C or better. (Typically offered: Fall and Spring)

SCMT 4123. Environmental, Social and Governance Strategies and Operations in Supply Chains. 3 Hours.
Environmental, Social and Governance (ESG) issues can carry significant supply chain challenges, risks, and opportunities. This course focuses on the relationship between ESG and supply chain planning, sourcing, manufacturing and service operations and logistics. Topics may include values-based leadership; globalizing social and environmental sustainability; diversity, inclusion and ethics across the supply chain; and voluntary product standards and governance, stakeholder engagement, reverse logistics, humanitarian logistics, ethical sourcing, transparency, innovation, resource scarcity, waste reduction, carbon emissions, and human rights across the extended supply network. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of $C$ or better. (Typically offered: Irregular)
SCMT 4233. Supply Chain Design and Optimization. 3 Hours.
This course focuses on supply chain network design and the underlying strategies needed to manage a supply chain as business conditions change and evolve. The purpose of this course is to provide the student with supply chain design thinking skills that they can employ to design solutions that optimize supply chain performance considering costs, constraints, and structure. The course is a combination of lecture and supply chain optimization case studies (network, transportation, and inventory). Prerequisite: SCMT 3443 and SCMT 3623. (Typically offered: Fall and Spring)

SCMT 4633. Supply Chain Performance Management and Analytics. 3 Hours. Integrates the strategic directives and successful execution by using supply chain performance management and analytics to drive supply chains from end-to-end. Examines and applies data analytics and visualization tools to better manage conflicting supply chain objectives and trade-offs. Prerequisite: SCMT 2103 with a grade of "C" or better. (Typically offered: Fall and Spring)

SCMT 4653. Supply Chain Strategy and Change Management. 3 Hours. Evaluate and select appropriate supply chain strategies and change management approaches for business situations. This capstone course leverages plan, source, make, deliver, customer service, and new product development capabilities to meet strategic and financial goals in demand-driven networks. Prerequisite: SCMT 3443, SCMT 3613 and SCMT 3623. (Typically offered: Fall and Spring)

SCMT 466V. Independent Study in Supply Chain Management. 1-3 Hour. Permits students to explore selected topics in supply chain management, logistics and transportation. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of C or better. (Typically offered: Fall and Spring)

SCMT 4853. Cross-Sector Collaboration for Sustainability. 3 Hours.
This course explores how organizations in the three sectors of society work together in value creation by addressing social and environmental problems manifest in global supply chains. Focusing on business and nonprofit organizations, we investigate the forces that bring about and influence these collaborations from practical and theoretical perspectives. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of C or better. (Typically offered: Spring)

## Management (MGMT)

John Delery

Department Chair
402 Business Building
479-575-3266
Management Department Website (https://walton.uark.edu/departments/ management/)

Management is the force responsible for directing organizations toward goals or objectives. Therefore, the management curriculum focuses on the nature and capabilities of human and other resources, as well as how the manager plans, organizes, staffs, coordinates, and evaluates those resources in an organization and its environment. The study of management prepares men and women for positions of leadership in profit and nonprofit organizations of all sizes. Management majors gain insight and skill needed for careers as professional managers throughout organizations. These skills include technical knowledge, communicative capacity, human understanding, and conceptual and problem-solving ability.

Two majors are offered in the management department.

- Human Resource Management
- Organizational Leadership

The Sam M. Walton College of Business also offers a general business (p. 620) major.

## Requirements for B.S.B.A. in Human Resource Management

All Human Resource Management majors must complete the following 6 hours of coursework: MGMT 4943 and MGMT 4953. Students must also take at least 6 hours from the following courses: MGMT 3653, MGMT 4983, and MGMT 4963. An additional 12 hours of credit are required from specified management and non-management courses in order to complete the requirements for the major.

Human Resource Management Major Requirements: The major in Human Resource Management requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a management major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.

| Major Course Requirements |  | 6 |
| :---: | :---: | :---: |
| MGMT 4943 | Talent Acquisition and Management |  |
| MGMT 4953 | Organizational Rewards and Compensation |  |
| Select at least two of the following: |  | 6 |
| MGMT 3653 | Creating and Leading a Diverse Workforce |  |
| MGMT 4963 | People Analytics |  |
| MGMT 4983 | Talent Development |  |
| Select three or four of the following: |  | 9 |
|  |  | or 12 |
| MGMT 3533 | Alternative Dispute Resolution |  |
| MGMT 4103 | Special Topics in Management |  |
| MGMT 4243 | Ethics and Corporate Responsibility |  |
| MGMT 4253 | Leadership |  |
| MGMT 4263 | Organizational Change and Development |  |


| MGMT 4633 | Faith, Spirituality, and the Workplace |  |
| :--- | :--- | :--- |
| MGMT 4273 | Leading Groups and Teams |  |
| SEVI 3233 | Corporate Innovation |  |
| SEVI 3673 | Social Entrepreneurship |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| SEVI 4433 | Small Enterprise Management |  |
| SEVI 4583 | International Management |  |
| SEVI 4993 | Entrepreneurship Practicum |  |
| ECON 3533 | Labor Economics |  |
| ECON 4333 | Economics of Organizations |  |
| HIST 4943 | U.S. Labor History, from 1877-present |  |
| PSYC 3013 | Social Psychology |  |
| PSYC 3063 | Psychology of Diversity |  |
| Total Hours |  | 24 |

## Human Resources Management B.S.B.A. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year |  | Unit |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) | 3 |  |
| BUSI 1111 Freshman Business Connection | 1 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  |  |
| ACCT 2013 Accounting Principles |  |  |
| BUSI 1033 Data Analysis and Interpretation |  |  |
| ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203) (Satisfies General Education Outcome 3.3) |  |  |
| Natural Science - State Minimum Core (Satisfies General Education Outcome 3.4) |  |  |
| Year Total: | 16 | 16 |

Second Year
SEVI 2053 Business Foundations
ISYS 2103 Business Information Systems ${ }^{2}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203)
Social Sciences - State Minimum Core (Satisfies
General Education Outcomes 3.3 and 4.1, as well
as the Social Issues, Multicultural Environment,
and Demographic Diversity Requirement)
Fine Art/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5}$,
6

SCMT 2103 Integrated Supply Chain
Management ${ }^{2}$
MGMT 2103 Managing People and Organizations ${ }^{2}$
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103) (Satisfies General Education Outcome 3.3) ${ }^{3}$
Fine Art/Humanities - State Minimum Core ${ }_{6}^{(S a t i s f i e s ~ G e n e r a l ~ E d u c a t i o n ~ O u t c o m e ~} 3.1$ or 3.2) ${ }^{5}$,

Natural Science - State Minimum Core (Satisfies
General Education Outcome 3.4)
ALL pre-business requirements should be met by end of term
Year Total:

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ | 3 |  |
| MGMT 4943 Talent Acquisition and Management | 3 |  |
| Junior Senior Business Elective | 3 |  |
| MGMT or Collateral Elective | 3 |  |

General Education Outcome 6.1)
MGMT 4953 Organizational Rewards and 3
Compensation
MGMT or Collateral Electives 3
Junior Senior Business Elective 3
U.S. History or Government - State Minimum Core 3
(Satisfies General Education Outcome 4.2)
Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MGMT Electives | 6 |  |
| MGMT or Collateral Electives | 3 |  |
| Junior Senior Business Elective | 3 |  |
| General Education Electives | 3 |  |
| MGMT or Collateral Elective |  | 3 |
| Junior Senior Business Electives |  | 3 |
| General Education Electives |  | 6 |

Year Total: 15

## Total Units in Sequence:

1 Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
3 Must be completed prior to taking any 3000 or 4000 level business courses.
4 The Social Sciences Elective courses which satisfy the General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include:
ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
5 The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, ENGL 2023, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
6 The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, ENGL 2023, GNST 2003, GNST 2003H, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Management Major with Organizational Leadership Concentration

The Organizational Leadership Concentration prepares new students for leadership positions within organizations. Among the topics explored are employee motivation, how to manage power and influence within organizations, developing effective teams, managing diversity, organizational transformation and change, and globalization.

All management majors must complete MGMT 4243 Ethics and Corporate Responsibility. An additional 21 hours of credit are required for students majoring in management. Six of these credit hours are specified in the concentration. Beyond this, students can choose from specified management and non-management courses in order to complete the requirements for the major.

## Management Major Requirements

The major in management requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a management major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.

## Courses Required

MGMT 4243 Ethics and Corporate Responsibility
Concentration Hours

## Total Hours

36
## Organizational Leadership Concentration

| MGMT 4253 | Leadership | 3 |
| :--- | :--- | :--- |
| MGMT 4263 | Organizational Change and Development | 3 |
| Select two of the following: | 6 |  |
| MGMT 3533 | Alternative Dispute Resolution |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| MGMT 4103 | Special Topics in Management |  |
| SEVI 4433 | Small Enterprise Management |  |
| SEVI 4583 | International Management |  |
| MGMT 4943 | Talent Acquisition and Management |  |
| MGMT 4953 | Organizational Rewards and Compensation |  |
| SEVI 4993 | Entrepreneurship Practicum |  |

Select three of the following: 9
ECON 3533 Labor Economics
ECON 4333 Economics of Organizations
ECON 4643 International Macroeconomics and Finance
FINN 3603 Corporate Finance
FINN 3703 International Finance
ISYS 2263 Principles of Information Systems
MKTG 4853 Marketing Management
MKTG 3633 Marketing Research
SCMT 3613 SOURCE: Procurement and Supply Management
SCMT 3643 International Logistics
SCMT 3653 Project Management: Supply Chain New Product Planning and Launch

Total Hours
21

## Management B.S.B.A., Organizational Leadership Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan for Information Systems should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| MATH 2053 Finite Mathematics (Satisfies <br> General Education Outcome 2.1), | $\mathbf{3}$ |  |
| BUSI 1111 Freshman Business Connection |  |  |
| SCMT 2103 Integrated Supply Chain <br> Management $^{2}$ | $\mathbf{1}$ |  |

MGMT 2103 Managing People and Organizations ${ }^{2}$
ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$
BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies General
Education Outcomes 1.2 and 5.1) ${ }^{3}$
ACCT 2013 Accounting Principles ${ }^{3}$
BUSI 1033 Data Analysis and Interpretation ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203) ${ }^{3}$
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Year Total:

Second Year
ACCT 2023 Accounting Principles II ${ }^{3}$
or SEVI 2053 Business Foundations
Select one of the following:
ISYS 2103 Business Information Systems
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing ${ }^{2}$
Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103) ${ }^{3}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{3}$
Fine Arts/Humanities State Minimum Core
(Satisfies General Education Outcomes 3.1 or 3.2) 5,6

Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{3}$
3 hours general education elective
Select one of the following:
ISYS 2103 Business Information Systems ${ }^{2}$
FINN 2043 Principles of Finance ${ }^{2}$ MKTG 3433 Introduction to Marketing ${ }^{2}$
Science - State Minimum Core (Satisfies General Education Outcome 3.4)
ALL pre-business requirements should be met by end of term
Year Total:

| Third Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| Select one of the following: | 3 |  |
| ISYS 2103 Business Information Systems |  |  |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:

AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Management Minor for Business Students

The Department of Management offers a minor for students desiring more knowledge of management to assist them in their careers. The minor requires completion of 15 hours of study with all of the upper level courses applied toward the minor in residence. The 15 hours include the following courses:
Select five of the following:
MGMT 3533 Alternative Dispute Resolution 15

Total Hours
Students who desire to earn a Management minor must notify the Walton College Undergraduate Programs Office of intent to pursue the minor. All requirements for the minor must be completed prior to the awarding of a student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level requirements must be taken in residence.

## Diversity, Equity and Inclusion Management Undergraduate MicroCertificate

The Diversity, Equity and Inclusion Management Undergraduate MicroCertificate certifies that students have completed coursework that prepares them for the rapidly growing area of DEI within organizations. Students will explore what diversity, equity and inclusion means to organizations and how they can successfully manage these three elements. This includes managing the regulatory environment associated with DEI, along with exploring how DEI influences organizations and organizational outcomes.

Diversity, Equity and Inclusion Management Undergraduate
MicroCertificate Requirements: The DEI Management Undergraduate MicroCertificate requires nine credit hours that may also be used to fulfill the requirements for an undergraduate degree. The specific requirements are listed below. See an advisor for course selection.

## Required Courses

MGMT 3653
Creating and Leading a Diverse Workforce

Select two of the following:
BUSI 3033 The African American Experience in Business
MGMT 4633 Faith, Spirituality, and the Workplace
SEVI 4583 International Management
Total Hours
9

## Faculty

Delery, John, Ph.D. (Texas A\&M University), M.S. (Memphis State University), B.S. (Tulane University of Louisiana), Professor, Raymond F. Orr Chair in Management, 1992, 2009.
Launder, John, M.A. (University of Missouri), B.A. (Westminster College), Instructor, 2011.
Lueke, Sarah B., Ph.D. (University of Akron), M.S. (Indiana UniversityPurdue University-Indianapolis), B.A. (University of Wisconsin-Madison), Teaching Assistant Professor, 2019.
O'Leary-Kelly, Anne M., Ph.D. (Michigan State University), B.A. (University of Michigan), Professor, William R. and Cacilia Howard Chair in Management, 1997, 2012.
Pullen, Brian, M.A. (University of Arkansas), B.S. (Arkansas Tech University), Instructor, 2005.
Rosen, Chris, Ph.D. (University of Akron), M.A. (Appalachian State University), B.A. (Washington and Lee University), Professor, 2006, 2015.
Schaffer, Meline M., Ph.D., M.S. (Clemson University), Teaching Assistant Professor, 2019.
Simon, Lauren, Ph.D., B.S.B.A., B.S. (University of Florida), Associate Professor, 2016, 2018.
Soignet, Denise Breaux, Ph.D. (Florida State University), M.B.A., B.S. (Nicholls State University), Teaching Associate Professor, 2010.
Sprandel, Heather, Ed.D., M.Ed. (University of Arkansas), B.A. (DePaul University), Instructor, 2019.
Stoverink, Adam, Ph.D. (Texas A\&M University), M.B.A. (St. Louis
University), B.S.B.A. (University of Missouri), Associate Professor, 2017, 2021.

Wilmot, Michael, Ph.D. (University of Minnesota), M.S., B.A. (University of Nebraska), Assistant Professor, 2020.
Zhang, Ying, Ph.D. (University of Hong Kong), M.S. (Peking University), B.S. (Jilin University), Assistant Professor, 2021.

## Courses

MGMT 2103. Managing People and Organizations. 3 Hours.
Study of the process of acquiring and managing Human Capital, focusing on the organizational behavior, legal, economic, and technical issues concerned with business decisions about acquiring, motivating, and retaining employees; emphasis given to the development, implementation, and assessment of policies and practices consistent with legal, social, human, and environmental dynamics. Corequisite: Walton College students: MATH 2053 or MATH 2554 each with a grade of C or better. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of $C$ or better. (Typically offered: Fall, Spring and Summer)
MGMT 2103H. Honors Managing People and Organizations. 3 Hours.
Study of the process of acquiring and managing Human Capital, focusing on the organizational behavior, legal, economic, and technical issues concerned with business decisions about acquiring, motivating, and retaining employees; emphasis given to the development, implementation, and assessment of policies and practices consistent with legal, social, human, and environmental dynamics. Corequisite: Walton College students: MATH 2053 or MATH 2554 each with a grade of C or better and honors standing. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of $C$ or better and honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MGMT 2103.

## MGMT 2423. Social Issues, Diversity and Ethics in a Global Business

 Environment. 3 Hours.Ethics, diversity, and culture are significant issues organizations must address within their workforces as they strive for success in a global business environment. Organizations that understand these factors will be better positioned to attract and retain talent, ensure employee and firm success, and foster continued positive contributions to society. In this course, students will explore how organizations can embrace and address critical social issues directly and ethically. Students will leave the course with an enhanced understanding of the incredible diversity of employees in terms of personal characteristics, culture, and beliefs, and with an increased awareness of important tools for enhancing employee and organizational success in today's business climate. Prerequisite: BUSI 1111 with a grade of $C$ or better will only apply to business majors; there are no prerequisites for non-business majors. (Typically offered: Fall and Spring)

## MGMT 3533. Alternative Dispute Resolution. 3 Hours.

This immersion into the divergent forms of conflict/dispute resolution will expose students to the dynamics of one of the leading disciplines in the workplace and society as a whole. Students will be presented with a comprehensive analysis of divergent aspects of conflict resolution strategies such as negotiation, mediation, arbitration, neutral fact finding, settlement conferences, summary trials, conciliation and facilitation. Confrontational negotiating styles and illustrations will be contrasted with topical strategies such as mutual gains. Prerequisite: Junior standing. (Typically offered: Irregular)

## MGMT 3563. Management Concepts and Organizational Behavior. 3 Hours.

Business students may not receive credit for this course. Course introduces students to fundamental concepts of management practice with particular emphasis on managing human behavior in organizations. Addresses the planning, organizing, directing, and controlling functions performed by managers as these functions relate to managing human resources. Provides survey of critical management concepts; enables students to develop analytical and problem solving skills through case studies and experimental exercises. Students may not receive credit for both MGMT 3563 and MGMT 2103. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Irregular)

## MGMT 3653. Creating and Leading a Diverse Workforce. 3 Hours.

Study of the process of creating and leading a diverse workforce, focusing on the knowledge and skills necessary for creating a culture that embraces and makes diversity work; examines the many dimensions of diversity with emphasis on understanding the range of cultural behaviors and expectations, cultural communication, and building diverse work teams. Special attention will be given to developing talent management competencies, such as recruiting, coaching, mentoring, career development, and evaluating and measuring the effects of diversity initiatives. Prerequisite: Junior standing. (Typically offered: Irregular)

## MGMT 4103. Special Topics in Management. 3 Hours.

Explores trends, concepts, and important developments in management as they impact on organizational performance. Topics are selected by the Management Department faculty for each semester the course is offered. (Typically offered: Irregular) May be repeated for degree credit.

## MGMT 4243. Ethics and Corporate Responsibility. 3 Hours.

A comprehensive and critical examination of traditional and current ethical theories and approaches that guide business decision-making, ethical issues that affect business decisions, and ethics related to the various business disciplines. (Typically offered: Fall and Spring)

## MGMT 4253. Leadership. 3 Hours.

This course offers a foundation for understanding and evaluating organizational leadership. It is designed to assist students in developing frameworks for understanding and enacting leadership. This course examines topics such as the nature and foundation of the leader-follower relationship, models that explain effective leadership, and the interface of leadership with gender, ethics, and culture. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)

MGMT 4263. Organizational Change and Development. 3 Hours.
This course will develop diagnostic and intervention skills that can be applied to identifying and overcoming problems of morale and productivity in organizations. A variety of behavioral methods will be covered. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)

MGMT 4273. Leading Groups and Teams. 3 Hours.
This course focuses on applying theory and principles of leadership, groups, and teams to develop the knowledge and skills necessary to effectively lead and work in teams. It is designed to help students develop confidence as team leaders by focusing on (1) improving team leadership skills related to factors such as communication, decision-making, and conflict management, and (2) self-reflection of their own personalities, skills, and experiences as important and relevant predictors of their effectiveness as team leaders. Pre- or Corequisite: MGMT 4253. (Typically offered: Fall and Spring)

## MGMT 450V. Independent Study. 1-3 Hour.

Permits students on individual basis to explore selected topics in management. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

## MGMT 4633. Faith, Spirituality, and the Workplace. 3 Hours.

An in-depth and interactive survey of faith and spirituality in the workplace. Provides students with a foundational knowledge of various faith traditions and forms of spirituality, including non-theist perspectives. Highlights the interconnections between faith traditions. Encourages exploration and identification of personal value systems and their origins. Develops skills that enable meaningful interaction with individuals from diverse faith and spiritual backgrounds. Examines the growing body of academic research on faith and spirituality in the workplace. Studies the management challenges and opportunities inherent in developing faith-friendly workplaces. Examines the different ways modern organizations are approaching faith and spirituality in the workplace. Offers perspectives from, and provides the opportunity to engage with, multiple religious, spiritual, and business leaders. Prerequisite: Junior Standing. (Typically offered: Irregular)

MGMT 4943. Talent Acquisition and Management. 3 Hours.
In-depth study of theoretical, legal, methodological, and substantive issues related to selection, performance appraisal, and development of employees. Students participate in individual and group projects designed to provide theoretical and practical skills related to staffing. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)

## MGMT 4953. Organizational Rewards and Compensation. 3 Hours.

Develops an understanding of reward systems theory and its application to the design of compensation systems. Provides theoretical and legal background and practical applications for the use of reward systems in attracting, motivating, and retaining employees. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)
MGMT 4963. People Analytics. 3 Hours.
There is a growing demand for data-based decision making in organizations, and Human Resources is no exception. In this course, students will gain an appreciation for the ways in which people data can be used to make more effective Human Resources decisions. Students will gain experience manipulating a data set, performing basic analyses, interpreting results, and make data-driven recommendations, while learning how people analytics fit into advancing larger organizational goals. Distilling and communicating results using visual media is also emphasized. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)

MGMT 4983. Talent Development. 3 Hours.
A comprehensive approach to developing talent demonstrates an organization's commitment to its employees and facilitates the organization's ability to meet strategic goals. This course focuses on applying the theories and principles of coaching, mentoring, training, and development to cultivate the knowledge and skills necessary to effectively develop talent. It is designed to provide an understanding of how coaching, mentoring, training, and development can be performed in a variety of situations and to demonstrate the relevance of these functions for effective leadership. Key relational and communication skills essential for talent development are emphasized. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)

## Marketing (MKTG)

Judith Anne Garretson Folse
Department Chair
325 Business Building
479-575-4055
jagfolse@walton.uark.edu (DGauri@walton.uark.edu)
Marketing Department Website (https://walton.uark.edu/departments/ marketing/)

The Department of Marketing offers two majors leading to a Bachelor of Science in Business Administration degree: Marketing and Retail. Requirements for the Marketing major are listed here. Find out more about the major at the Retail page (p. 681).

The major in marketing is designed to prepare students for careers involving product planning, distribution, promotion, and pricing strategies in profit or nonprofit organizations. In addition to a broad overview of the marketing functions within organizations, students are provided with knowledge and skills in consumer behavior, marketing research, and strategic marketing.

Students majoring in marketing are actively subjected to problemsolving situations, both domestic and international, where a variety of contemporary tools are employed to stimulate the strategic decisionmaking process. Supportive disciplines with which the marketer should be familiar include psychology, sociology, accounting, economics, statistics, quantitative analysis, and research methodology.

The marketing major is intended to provide students with broad knowledge and skills in marketing applicable to a wide range of profit and nonprofit organizations.

Requirements for a Major in Marketing: The major in marketing requires 21 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a marketing major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.
Major Course Requirements

| MKTG 3553 | Consumer Behavior |
| :--- | :--- |
| MKTG 3633 | Marketing Research |
| MKTG 4853 | Marketing Management |
| Select four of the following: |  |
| MKTG 3653 | Category Management Topics |
| MKTG 4233 | Integrated Marketing Communications |
| MKTG 4343 | Selling and Sales Management |


| MKTG 4103 | Marketing Topics (May take up to six hours from |
| :--- | :--- |
| two different topics) |  |
| MKTG 4633 | Global Marketing |
| MKTG 4433 | Retail Strategy |
| MKTG 4443 | Retail Buying and Merchandise |
| MKTG 4453 | New Product Development |
| MKTG 4513 | Nonprofit Marketing |

Maximum of 27 hours of MKTG courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

## Total Hours

Junior/Senior Business Electives (15 hours)

## Marketing B.S.B.A. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

First Year $\quad$ Fall | Units |
| ---: |
| Spring |

ENGL 1013 Composition I (ACTS Equivalency 3
= ENGL 1013) (Satisfies General Education
Outcome 1.1) ${ }^{3}$
MATH 2053 Finite Mathematics (Satisfies 3
General Education Outcome 2.1) ${ }^{1,3}$
BUSI 1111 Freshman Business Connection ${ }^{3} \quad 1$
SCMT 2103 Integrated Supply Chain 3
Management ${ }^{2}$
MGMT 2103 Managing People and
3
Organizations ${ }^{2}$
ISYS 1123 Business Application Knowledge - 3
Computer Competency ${ }^{3}$
BLAW 2013 The Legal Environment of
Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies General
Education Outcomes 1.2 and 5.1) ${ }^{3}$
ACCT 2013 Accounting Principles ${ }^{3}$
BUSI 1033 Data Analysis and Interpretation ${ }^{3} 3$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203)
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency = ECON 2103)
Year Total:
16

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ACCT 2023 Accounting Principles II <br> or SEVI 2053 Business Foundations | 3 |  |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ | $\mathbf{3}$ |  |

Satisfies General Education Outcome 3.3:

ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103) ${ }^{3}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1)
Fine Art/Humanities State Minimum Core (Satisfies
General Education Outcome 3.1 or 3.2) ${ }^{5,6}$
Social Sciences - State Minimum Core (Satisfies
General Education Outcomes 3.3 and 4.1 , as well as the Social Issues, Multicultural Environment and Demographic Diversity Requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{3}$
3 hours general education elective
ISYS 2103 Business Information Systems ${ }^{2}$
or FINN 2043 Principles of Finance
Science State Minimum Core (Satisfies General Education Outcome 3.4)
ALL pre-business requirements should be met by end of term
Year Total:
Third Year Fall

Units
Fall
ISYS 2103 Business Information Systems (whichever was not taken earlier) ${ }^{2}$
or FINN 2043 Principles of Finance
Science - State Minimum Core (Satisfies General
Education Outcome 3.4)
Junior Senior Business Electives
MKTG 3633 Marketing Research
MKTG Elective
SEVI 3013 Strategic Management (Satisfies
General Education Outcome 6.1)
Junior Senior Business Electives
U.S. History or Government State Minimum Core
(Satisfies General Education Outcome 4.2)
Year Total:
13

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| MKTG 3553 Consumer Behavior | 3 |  |
| MKTG Electives | 6 |  |
| General Education Electives | 6 |  |

MKTG 4853 Marketing Management

## MKTG Elective

Junior Senior Business Elective
Fine Art/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5}$, 6

Year Total:

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business course.
${ }^{4}$ The Social Sciences Elective courses which satisfy the General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include:
ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
5 The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013 H .
${ }^{6}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Marketing Minor for Business Students

The Department of Marketing offers a minor for Walton College students desiring more knowledge of marketing to assist them in their careers. The minor requires the completion of 15 hours of study with all of the courses applied toward the minor taken in residence. The 15 hours include the following courses:

| MKTG 3433 | Introduction to Marketing | 3 |
| :--- | :--- | ---: |
| MKTG 3553 | Consumer Behavior | 3 |
| Select three of the following: | 9 |  |
| MKTG 3633 | Marketing Research |  |
| MKTG 3653 | Category Management Topics |  |
| MKTG 4103 | Marketing Topics (may count for a maximum of 3 |  |
|  | hours credit) |  |

student's undergraduate degree. All specific course pre-requisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

## Faculty

Bhave, Ashutosh, Ph.D., M.S. (University of Texas Dallas-Naveen Jindal School of Management), B.Eng. (University of Pune-India), Assistant Professor, 2022.
Burton, Scot, Ph.D. (University of Houston), M.B.A., B.S.B.A. (University of Texas), Distinguished Professor, Tyson Chair in Food and Consumer Products Retailing, 1993, 2012.
Chen, Jialie, Ph.D. (Cornell University), B.A. (Shanghai University of Finance and Economics), Assistant Professor, 2018.
Cox, Nicole R., M.B.A. (University of Arkansas), B.S. (College of the Ozarks), Instructor, 2003.
Folse, Judith Anne Garretson, Ph.D. (University of Arkansas), M.B.A., B.B.A (Pittsburg State University), Professor, R.A. and Vivian Young Endowed Chair, 2022.
Gauri, Dinesh K., Ph.D., M.A. (State University of New York-Buffalo), M.S. (Indian Institute of Technology, New Delhi), Professor, Walmart Chair in Marketing, 2016.
Harris, Flint, Ed.D., M.Ed., B.S.E (University of Arkansas), Instructor, 2023.

Javad, M., Ph.D. (University of Kansas), M.B.A. (University of Tehran, Iran), B.Sc. (Sharif University of Technology, Iran), Assistant Professor, 2022.

Jensen, Molly R., Ph.D., M.A. (University of Arkansas), B.S. (Southwest Missouri State University), Clinical Associate Professor, 2003.
Jensen, Sarah D., Ed.D. (University of Arkansas), M.B.A., B.A. (Webster University), Instructor, 2009.
Jensen, Thomas D., Ph.D., M.A., B.A. (University of Arkansas), Professor, Wal-Mart Lecturer in Retailing, 1982, 2009.
Kopp, Steven W., Ph.D. (Michigan State University), M.B.A. (University of Southern Mississippi), B.S. (University of Missouri-Rolla), Associate Professor, 1992, 2000.
Miles, Rebecca S., Ph.D. (Oklahoma Christian University), M.Ed. (Central State University), B.S. (Oklahoma Christian College), Clinical Assistant Professor, 2007, 2015.
Murray, Jeff B., Ph.D. (Virginia Polytechnic Institute and State University), M.A., B.A. (University of Northern Colorado), Professor, R.A. and Vivian Young Chair in Marketing, 1989, 2004.
Rapert, Molly, Ph.D. (University of Memphis), M.B.A., B.S.B.A. (University of Arkansas), Associate Professor, 1991, 1998.
Sharma, Ashish, Ph.D. (University of Georgia), M.Fin. (University of Glasgow), M.B.A., B.S.B.A (Indraprastha University), Assistant Professor, 2020.

Smith, Leah, Ph.D. (University of Tennessee), M.B.A. (Wake Forest University), B.A. (Indiana University), Assistant Professor, 2020.
Soysal, Gonca, Ph.D. (Northwestern University), M.S. (Northwestern University), M.E. (University of Florida), B.S. (Middle East Technical University), Assistant Professor, 2017.
Stassen, Robert E., Ph.D., M.B.A. (University of Nebraska-Lincoln), B.S. (University of Minnesota), Associate Professor, 1989.
Velliquette, Anne M., Ph.D. (University of Arkansas), M.A.B., B.S.
(Southwest Missouri State University), Clinical Assistant Professor, 2014.
Villanova, Daniel, Ph.D. (Virginia Tech University), B.S.B.A.
(Appalachian State University), Assistant Professor, 2018.

## Courses

MKTG 3013. Retail Internship. 3 Hours.
This experience is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the retail, consumer products and related industries. Prerequisite: MKTG 3433 with a grade of $C$ or better, completion of the pre-business core, junior standing, and department consent. (Typically offered: Fall, Spring and Summer)

## MKTG 3433. Introduction to Marketing. 3 Hours.

Examines strategies, tactical, and operational decisions related to contemporary marketing activities. Topics covered include product, services and international strategies in consumer and business markets. Prerequisite: For business majors: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of $C$ or better; For Non-business majors: (BUSI 1033 or STAT 2303) and ((ECON 2013 and ECON 2023) or ECON 2143). (Typically offered: Fall, Spring and Summer)

## MKTG 3433H. Honors Introduction to Marketing. 3 Hours.

Examines strategies, tactical, and operational decisions related to contemporary marketing activities. Topics covered include product, services and international strategies in consumer and business markets. Prerequisite: Honors standing and ((for business majors: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better); (for non-business majors: (BUSI 1033 or STAT 2303) and ((ECON 2013 and ECON 2023) or ECON 2143)). (Typically offered: Fall, Spring and Summer)
This course is equivalent to MKTG 3433.
MKTG 3553. Consumer Behavior. 3 Hours.
Analyzes consumer motivation, buying behavior, market adjustment, product innovation and adaptation; consumer market measurement, including survey of economic, behavioral science theories of consumer market behavior, producer and intermediary reactions. Consumer decision making is evaluated as to psychological drives, sociological concepts used by producers, channel intermediaries, consumers; considers methods, techniques for measuring consumer behavior, and analyzing consumer markets. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)
MKTG 3633. Marketing Research. 3 Hours.
Research designs, techniques, and analyses of primary and secondary data for the purposes of (1) developing market forecasts and segmentation analyses; (2) strategy implementation determining product development, pricing, distribution, and promotion decisions; and (3) monitoring customer attitudes, motivations and satisfaction. Prerequisite: MKTG 3433. (Typically offered: Fall, Spring and Summer)

## MKTG 3653. Category Management Topics. 3 Hours.

This course exposes new majors in Marketing and Supply Chain Management to the current thinking of management and supply chain professionals in consumer packaged goods (CPG) and the tools to determine consumer demand in the CPG industry. Pre- or Corequisite: MKTG 3433. Prerequisite: SCMT 2103. (Typically offered: Irregular)

## MKTG 3833. Digital Marketing. 3 Hours.

An exploratory introduction to the tools and tactics used by today's marketers to effectively promote products, brands, and companies in the digital age, with focus on digital content, website design, graphic and video design, digital advertising, social media, search-engine optimization, email marketing, and marketing analytics. Prerequisite: MKTG 3433. (Typically offered: Irregular)

MKTG 4003H. Honors Marketing and Transportation Colloquium. 3 Hours.
Explores events, concepts and/or new developments in the field of Marketing and/or Transportation. Prerequisite: Senior standing, honors standing, and only Marketing majors or minors. (Typically offered: Irregular)
MKTG 4103. Marketing Topics. 3 Hours.
Special topics in marketing not available in other courses. Topics are selected by the Marketing faculty for each semester each course is offered. Prerequisite: MKTG 3433. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

MKTG 4233. Integrated Marketing Communications. 3 Hours.
The theory, knowledge, and application relevant to the coordination of marketing communications including advertising, personal selling, sales promotion, public relations, and publicity. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## MKTG 4343. Selling and Sales Management. 3 Hours.

Examines how organizations and individuals communicate value and obtain desired results through the process of personal selling and customer relationship management, along with the role of sales management in the development of people and resource utilization within the firm. Pre- or Corequisite: MKTG 3433. (Typically offered: Fall and Spring)

MKTG 4353. Advanced Professional Selling. 3 Hours.
Applies best practices of the selling process with hands-on and practical approaches to developing long-term business-to-business and business to customer relationships, communicating value and earning desired long-term results. The usage of role-play, involvement in sales competitions, sales data analytics and utilizing practitioner mentorships are key elements of this class with the goal of having the student be prepared to enter the sales field upon class completion. Prerequisite: MKTG 4343. (Typically offered: Irregular)

## MKTG 4433. Retail Strategy. 3 Hours.

Concentrates on planning to meet the objectives and satisfy the retail marketing concept. Attention is devoted to retail format, competition among retail institutions, determination of store location, merchandise lines, atmospherics, and levels of customer service provided with the sale of consumer products. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## MKTG 4443. Retail Buying and Merchandise. 3 Hours.

Examination of supplier and buyer responsibilities and decisions associated with product assortment depth, budgets, promotions, inventory investment and control, and gross margin management for consumer goods including apparel, food, and durables. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## MKTG 4453. New Product Development. 3 Hours.

The course is structured along the three main dimensions of new product development: designing, manufacturing, and marketing of new products. An analytical approach is taken consistent with current thinking and practice of the industry. Students learn the best approaches from a marketing manager's perspective to effectively manage the NPD process. Prerequisite: MKTG 3433. (Typically offered: Fall)

## MKTG 450V. Independent Study. 1-3 Hour.

The Marketing Independent Study course permits students on an individual basis to explore select topics in Marketing and Retail. Independent study projects will explore topics relevant for marketing and retail that typically are not covered in the existing curriculum. Prerequisite: Junior standing. (Typically offered: Irregular)

## MKTG 4513. Nonprofit Marketing. 3 Hours.

This course is designed to give students a deeper understanding of marketing in the nonprofit sector, how it functions and how nonprofit marketing differs from traditional for profit marketing through leadership opportunities. Students will work with local nonprofits on various marketing projects throughout the semester. The class will use a service learning model of instruction where students take a leadership role in project development and execution. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

MKTG 4633. Global Marketing. 3 Hours.
Examines differences in global environment; how cultural considerations, political, legal, and economic conditions affect market entry strategies and marketing mix decisions; development of marketing plan for global environments. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

MKTG 4733. Social Media and Marketing. 3 Hours.
Social media and marketing will explore different strategies to develop and execute a successful social media plan for various businesses. The class will also teach students how to create engaging content, manage social media accounts, track social media metrics, and leverage social media advertising to reach their target audience. Students will also learn about the different social media platforms and how to choose the right ones for various businesses. By the end of the course, students will have a comprehensive understanding of social media marketing and the tools and techniques to build and manage a strong social media presence for businesses. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

MKTG 4853. Marketing Management. 3 Hours.
Strategic planning and management of the marketing function within the firm from a managerial viewpoint. Focus on the development and management of marketing strategies and tactics related to product, pricing, promotion, and distribution decisions. Prerequisite: MKTG 3633 and MKTG 3553. (Typically offered: Fall and Spring)

## MKTG 4933. Search Marketing. 3 Hours.

A thorough examination of prevalent strategies, tactics, and tools used by today's marketers to generate qualified search traffic for their websites, content, ecommerce pages, and other digital properties. With a focus on the most powerful search and e-commerce platforms today, including Google, YouTube, Amazon, and Walmart.com, this course will demonstrate how effective content creation, search engine optimization (SEO), and search engine marketing (i.e., paid search) can help marketers accrue traffic, capture leads, drive sales, and grow a business. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## Organizational Management and Leadership (OMGL)

John Delery<br>Department Chair<br>402 Business Building<br>479-575-3266

Management Department Website (https://walton.uark.edu/departments/ management/)

The major in Organizational Management and Leadership leads to a B.S.B.A. and prepares students for leadership positions within organizations. Among the topics explored are employee motivation, how to manage power and influence within organizations, communication, developing and leading effective teams, managing diversity, organizational transformation and change, and globalization.

## Requirements for B.S.B.A. in Organizational Management and Leadership

Organizational Management and Leadership Major Requirements: All Organizational Management and Leadership majors must complete the following 6 hours of coursework: MGMT 4253, MGMT 4273. Students must also complete at least 6 hours of coursework from the following: MGMT 3653, MGMT 4983, and MGMT 4243. An additional 12 hours of credit are required from specified management and non-management courses in order to complete the requirements for the major.

The major in Organizational Management and Leadership requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a management major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.

| Required Courses (6 hours) |  |  |
| :---: | :---: | :---: |
| MGMT 4253 | Leadership | 3 |
| MGMT 4273 | Leading Groups and Teams | 3 |
| Select at least two of the following: |  | 6-9 |
| MGMT 3653 | Creating and Leading a Diverse Workforce |  |
| MGMT 4243 | Ethics and Corporate Responsibility |  |
| MGMT 4983 | Talent Development |  |
| Select three or four of the following: |  | 9-12 |
| MGMT 3533 | Alternative Dispute Resolution |  |
| MGMT 4103 | Special Topics in Management |  |
| MGMT 4263 | Organizational Change and Development |  |
| MGMT 4633 | Faith, Spirituality, and the Workplace |  |
| MGMT 4943 | Talent Acquisition and Management |  |
| MGMT 4953 | Organizational Rewards and Compensation |  |
| MGMT 4963 | People Analytics |  |
| SEVI 3233 | Corporate Innovation |  |
| SEVI 3673 | Social Entrepreneurship |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| SEVI 4433 | Small Enterprise Management |  |
| SEVI 4583 | International Management |  |
| SEVI 4993 | Entrepreneurship Practicum |  |
| ACCT 3533 | Accounting Technology |  |
| ECON 3533 | Labor Economics |  |
| ECON 4333 | Economics of Organizations |  |
| FINN 3623 | Risk Management |  |
| FINN 3703 | International Finance |  |
| FINN 3933 | Real Estate Principles |  |
| ISYS 2263 | Principles of Information Systems |  |
| ISYS 4193 | Business Analytics and Visualization |  |
| ISYS 4213 | ERP Fundamentals |  |
| MKTG 3553 | Consumer Behavior |  |
| MKTG 3633 | Marketing Research |  |
| MKTG 4233 | Integrated Marketing Communications |  |
| SCMT 3443 | DELIVER: Transportation and Distribution Management |  |
| SCMT 3613 | SOURCE: Procurement and Supply Management |  |
| BUSI 3023 | Sustainability in Business |  |
| BUSI 3033 | The African American Experience in Business |  |
| BUSI 3053 | Diversity in the Workforce |  |
| COMM 3373 | Leadership Communication |  |
| COMM 3703 | Organizational Communication |  |

## Organizational Management and Leadership B.S.B.A.

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p.67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed
are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1}$ | 3 |  |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) | 3 |  |
| BUSI 1111 Freshman Business Connection | 1 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |


| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| SEVI 2053 Business Foundations | 3 |  |
| ISYS 2103 Business Information Systems ${ }^{2}$ | 3 |  |
| MATH 2043 Survey of Calculus (ACTS | 3 |  |
| Equivalency = MATH 2203) |  |  |
| Social Sciences - State Minimum Core (Satisfies | 3 |  |

Natural Science - State Minimum Core (Satisfies

## SCMT 2103 Integrated Supply Chain

Management ${ }^{2}$
MGMT 2103 Managing People and Organizations ${ }^{2}$

ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) (Satisfies General Education Outcome 3.3) ${ }^{3}$
Fine Art/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2) 5, 6

General Education Outcome 3.4)
ALL pre-business requirements should be met by end of term
Year Total:

| Third Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| FINN 2043 Principles of Finance ${ }^{2}$ | 3 |  |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ | 3 |  |
| MGMT 4253 Leadership | 3 |  |
| Junior Senior Business Elective | 3 |  |
| MGMT or Collateral Elective | 3 |  |
| SEVI 3013 Strategic Management (Satisfies |  | 3 |
| General Education Outcome 6.1) |  | 3 |
| MGMT 4273 Leading Groups and Teams |  | 3 |
| MGMT or Collateral Electives |  | 3 |
| Junior Senior Business Elective |  | 3 |
| U.S. History or Government - State Minimum Core |  | 15 |
| (Satisfies General Education Outcome 4.2) |  |  |
| Year Total: |  | Units |
|  |  | Spring |
| Fourth Year | 6 |  |
|  | 3 |  |
| MGMT Electives | 3 |  |
| MGMT or Collateral Electives | 3 |  |
| Junior Senior Business Elective |  | 3 |
| General Education Electives |  | 3 |
| MGMT or Collateral Elective | 15 | 6 |
| Junior Senior Business Electives |  | 12 |
| General Education Electives |  |  |
| Year Total: |  |  |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
${ }^{2}$ Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome 3.1 include:
ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, ENGL 2023, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013 , MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Humanities Elective courses which satisfy the General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, ENGL 2023, GNST 2003, GNST 2003H, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C,

PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Faculty

Delery, John, Ph.D. (Texas A\&M University), M.S. (Memphis State University), B.S. (Tulane University of Louisiana), Professor, Raymond F. Orr Chair in Management, 1992, 2009.
Launder, John, M.A. (University of Missouri), B.A. (Westminster College), Instructor, 2011.
Lueke, Sarah B., Ph.D. (University of Akron), M.S. (Indiana University-
3 Purdue University-Indianapolis), B.A. (University of Wisconsin-Madison), Teaching Assistant Professor, 2019.
3 O'Leary-Kelly, Anne M., Ph.D. (Michigan State University), B.A.
(University of Michigan), Professor, William R. and Cacilia Howard Chair in Management, 1997, 2012.
Pullen, Brian, M.A. (University of Arkansas), B.S. (Arkansas Tech University), Instructor, 2005.
Rosen, Chris, Ph.D. (University of Akron), M.A. (Appalachian State University), B.A. (Washington and Lee University), Professor, 2006, 2015.
Schaffer, Meline M., Ph.D., M.S. (Clemson University), Teaching Assistant Professor, 2019.
Simon, Lauren, Ph.D., B.S.B.A., B.S. (University of Florida), Associate Professor, 2016, 2018.
Soignet, Denise Breaux, Ph.D. (Florida State University), M.B.A., B.S. (Nicholls State University), Teaching Associate Professor, 2010.
Sprandel, Heather, Ed.D., M.Ed. (University of Arkansas), B.A. (DePaul University), Instructor, 2019.
3 Stoverink, Adam, Ph.D. (Texas A\&M University), M.B.A. (St. Louis
University), B.S.B.A. (University of Missouri), Associate Professor, 2017, 2021.

Wilmot, Michael, Ph.D. (University of Minnesota), M.S., B.A. (University of Nebraska), Assistant Professor, 2020.
Zhang, Ying, Ph.D. (University of Hong Kong), M.S. (Peking University), B.S. (Jilin University), Assistant Professor, 2021.

## Retail (RETL)

Judith Anne Garretson Folse Marketing Department Chair 325 Business Building
jagfolse@walton.uark.edu
The Department of Marketing offers a retail major that leads to a B.S.B.A. degree. The department also offers a marketing major (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/ sammwaltoncollegeofbusiness/marketingmktg/).

The major in retail is designed to prepare students for careers in retailing or in companies that manufacture, sell, and distribute consumer goods to retailers. In addition to a broad view of the business and retail environments students can select to concentrate their retail studies in accounting, economics, finance, information systems, international retail, management, marketing, or supply chain management. A general retail concentration is also available.

## Retail Major Requirements

The retail major requires 24 hours of major courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a retail major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an
interdisciplinary minor or collateral track. See an adviser for selection of courses.

| Major Course Requirements |  |  |
| :--- | :--- | :--- |
| MKTG 3553 | Consumer Behavior | 3 |
| MKTG 4433 | Retail Strategy | 3 |
| MKTG 4443 | Retail Buying and Merchandise | 3 |
| MKTG 4343 | Selling and Sales Management | 3 |
| MKTG 4353 | Advanced Professional Selling | 3 |
| ISYS 4193 | Business Analytics and Visualization | 3 |
| MKTG 3013 | Retail Internship ${ }^{1}$ | 3 |
| Select three hours from the following: | 3 |  |


| MKTG 3653 | Category Management Topics |
| :--- | :--- |
| MKTG 3633 | Marketing Research |
| MKTG 3833 | Digital Marketing |
| MKTG 4233 | Integrated Marketing Communications |
| MKTG 4853 | Marketing Management |
| FINN 3013 | Financial Analysis |
| SCMT 3613 | SOURCE: Procurement and Supply Management |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics |
| SCMT 3653 | Project Management: Supply Chain New Product |
|  | Planning and Launch |

## Total Hours

${ }^{1}$ Alternative industry-based experiential coursework is available on an exception basis with departmental approval.

## Retail B.S.B.A. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS |  | 3 |
| Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1$)^{3}$ |  |  |

ACCT 2013 Accounting Principles ${ }^{3}$ ..... 3
BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ ..... 3
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203) ${ }^{3}$or ECON 2013 Principles of Macroeconomics(ACTS Equivalency $=$ ECON 2103)
Year Total: ..... 16

Second Year Fall
Units
ACCT 2023 Accounting Principles II $^{3}$ ..... 3
or SEVI 2053 Business Foundations
MKTG 3433 Introduction to Marketing ${ }^{2}$ ..... 3
Satisfies General Education Outcome 3.3:ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103) ${ }^{3}$or ECON 2023 Principles of Microeconomics(ACTS Equivalency = ECON 2203)ENGL 1023 Composition II (ACTS Equivalency= ENGL 1023) (Satisfies General EducationOutcome 1.1) ${ }^{3}$
Fine Art/Humanities State Minimum Core (Satisfies
General Education Outcome 3.1 or 3.2) ${ }^{5,6}$
Social Sciences - State Minimum Core (SatisfiesGeneral Education Outcomes 3.3 and 4.1 , as wellas the Social Issues, Multicultural Environment andDemographic Diversity Requirement) ${ }^{4}$MATH 2043 Survey of Calculus (ACTSEquivalency = MATH 2203) ${ }^{3}$
3 hours general education elective ..... 3
ISYS 2103 Business Information Systems ${ }^{2}$ ..... 3
Science State Minimum Core (Satisfies General
Education Outcome 3.4)
ALL pre-business requirements should be metby end of term
Year Total: ..... 15
Third Year Fall
ISYS 2103 Business Information Systems ${ }^{2}$ ..... 3
or FINN 2043 Principles of FinanceFine Art/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5}$,ISYS 4193 Business Analytics and Visualization
Junior Senior Business Electives ..... 6
MKTG 3553 Consumer Behavior ..... 3
MKTG 4433 Retail Strategy ..... 3
MKTG 3013 Retail Internship (Satisfies General ..... 3
Education Outcome 6.1)
3 Retail Major Elective ..... 3
Science - State Minimum Core (Satisfies General ..... 4
3 Education Outcome 3.4)
Year Total:33315

| Fourth Year |  | Units <br> Spring |
| :--- | ---: | ---: |
| MKTG 4443 Retail Buying and Merchandise | 3 |  |
| MKTG 4343 Selling and Sales Management | 3 |  |
| Junior Senior Business Elective | 3 |  |
| General Education Electives | 3 |  |
| MKTG 4353 Advanced Professional Selling |  | 3 |
| Junior Senior Business Elective |  | 3 |
| General Education Electives |  | 3 |
| U.S. History or Government State Minimum Core |  | 3 |
| (Satisfies General Education Outcome 4.2) | 12 |  |
| SEVI 3013 Strategic Management |  | 15 |
| Year Total: |  | 3 |

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013.
3 Must be completed prior to taking any 3000 or 4000 level business electives.
4 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, or SOCI 2033.
5 The Fine Arts Elective courses which satisfy General Education Outcome 3.1

| FINN 3013 | Financial Analysis |
| :---: | :---: |
| ISYS 4213 | ERP Fundamentals |
| MGMT course at 3000 or 4000 level |  |
| MKTG 3653 | Category Management Topics |
| MKTG 4233 | Integrated Marketing Communications |
| MKTG 4453 | N |
| SCM | SOURCE: Procurement and Supply Management |
| Total Hours | 15 |
| Students who desire to earn a retail minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence. |  |

## Faculty

Bhave, Ashutosh, Ph.D., M.S. (University of Texas Dallas-Naveen Jindal School of Management), B.Eng. (University of Pune-India), Assistant Professor, 2022.
Burton, Scot, Ph.D. (University of Houston), M.B.A., B.S.B.A. (University of Texas), Distinguished Professor, Tyson Chair in Food and Consumer Products Retailing, 1993, 2012.
Chen, Jialie, Ph.D. (Cornell University), B.A. (Shanghai University of Finance and Economics), Assistant Professor, 2018.
Cox, Nicole R., M.B.A. (University of Arkansas), B.S. (College of the Ozat6s) , Instrectorn13R03.
Folse, Judith Anne Garretson, Ph.D. (University of Arkansas), M.B.A., B.B.A (Pittsburg State University), Professor, R.A. and Vivian Young Endowed Chair, 2022.
include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, Gapria Bjißesh K., Ph.D., M.A. (State University of New York-Buffalo), MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013,M.S. (Indian Institute of Technology, New Delhi), Professor, Walmart or THTR 1013 H .
6 The Humanities Elective courses which satisfy General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013,CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or intermediate-level world language (usually 2003-level).

## Retail Minor for Business Students

The Department of Marketing offers a retail minor for Walton College students desiring more knowledge of retail, to assist them in their careers. The minor requires the completion of 15 hours of study with all of the courses applied toward the minor taken in residence.

The 15 hours include the following courses:

| MKTG 3433 | Introduction to Marketing | 3 |
| :--- | :--- | :--- |
| MKTG 3553 | Consumer Behavior | 3 |
| MKTG 4433 | Retail Strategy | 3 |
| MKTG 4443 | Retail Buying and Merchandise | 3 |
| Select one of the following: | 3 |  |

## Chair in Marketing, 2016.

Harris, Flint, Ed.D., M.Ed., B.S.E (University of Arkansas), Instructor, 2023.

Javad, M., Ph.D. (University of Kansas), M.B.A. (University of Tehran, Iran), B.Sc. (Sharif University of Technology, Iran), Assistant Professor, 2022.

Jensen, Molly R., Ph.D., M.A. (University of Arkansas), B.S. (Southwest Missouri State University), Clinical Associate Professor, 2003.
Jensen, Sarah D., Ed.D. (University of Arkansas), M.B.A., B.A. (Webster University), Instructor, 2009.
Jensen, Thomas D., Ph.D., M.A., B.A. (University of Arkansas), Professor, Wal-Mart Lecturer in Retailing, 1982, 2009.
Kopp, Steven W., Ph.D. (Michigan State University), M.B.A. (University of Southern Mississippi), B.S. (University of Missouri-Rolla), Associate Professor, 1992, 2000.
Miles, Rebecca S., Ph.D. (Oklahoma Christian University), M.Ed. (Central State University), B.S. (Oklahoma Christian College), Clinical Assistant Professor, 2007, 2015.
Murray, Jeff B., Ph.D. (Virginia Polytechnic Institute and State University), M.A., B.A. (University of Northern Colorado), Professor, R.A. and Vivian Young Chair in Marketing, 1989, 2004.
Rapert, Molly, Ph.D. (University of Memphis), M.B.A., B.S.B.A. (University of Arkansas), Associate Professor, 1991, 1998.
Sharma, Ashish, Ph.D. (University of Georgia), M.Fin. (University of Glasgow), M.B.A., B.S.B.A (Indraprastha University), Assistant Professor, 2020.

Smith, Leah, Ph.D. (University of Tennessee), M.B.A. (Wake Forest University), B.A. (Indiana University), Assistant Professor, 2020.
Soysal, Gonca, Ph.D. (Northwestern University), M.S. (Northwestern University), M.E. (University of Florida), B.S. (Middle East Technical University), Assistant Professor, 2017.
Stassen, Robert E., Ph.D., M.B.A. (University of Nebraska-Lincoln), B.S. (University of Minnesota), Associate Professor, 1989.
Velliquette, Anne M., Ph.D. (University of Arkansas), M.A.B., B.S.
(Southwest Missouri State University), Clinical Assistant Professor, 2014.
Villanova, Daniel, Ph.D. (Virginia Tech University), B.S.B.A.
(Appalachian State University), Assistant Professor, 2018.

## Courses

## MKTG 3013. Retail Internship. 3 Hours.

This experience is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the retail, consumer products and related industries. Prerequisite: MKTG 3433 with a grade of C or better, completion of the pre-business core, junior standing, and department consent. (Typically offered: Fall, Spring and Summer)

## MKTG 3433. Introduction to Marketing. 3 Hours.

Examines strategies, tactical, and operational decisions related to contemporary marketing activities. Topics covered include product, services and international strategies in consumer and business markets. Prerequisite: For business majors: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of $C$ or better; For Non-business majors: (BUSI 1033 or STAT 2303) and ((ECON 2013 and ECON 2023) or ECON 2143). (Typically offered: Fall, Spring and Summer)

## MKTG 3433H. Honors Introduction to Marketing. 3 Hours.

Examines strategies, tactical, and operational decisions related to contemporary marketing activities. Topics covered include product, services and international strategies in consumer and business markets. Prerequisite: Honors standing and ((for business majors: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better); (for non-business majors: (BUSI 1033 or STAT 2303) and ((ECON 2013 and ECON 2023) or ECON 2143)). (Typically offered: Fall, Spring and Summer)
This course is equivalent to MKTG 3433.

## MKTG 3553. Consumer Behavior. 3 Hours.

Analyzes consumer motivation, buying behavior, market adjustment, product innovation and adaptation; consumer market measurement, including survey of economic, behavioral science theories of consumer market behavior, producer and intermediary reactions. Consumer decision making is evaluated as to psychological drives, sociological concepts used by producers, channel intermediaries, consumers; considers methods, techniques for measuring consumer behavior, and analyzing consumer markets. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## MKTG 3633. Marketing Research. 3 Hours.

Research designs, techniques, and analyses of primary and secondary data for the purposes of (1) developing market forecasts and segmentation analyses; (2) strategy implementation determining product development, pricing, distribution, and promotion decisions; and (3) monitoring customer attitudes, motivations and satisfaction. Prerequisite: MKTG 3433. (Typically offered: Fall, Spring and Summer)

## MKTG 3653. Category Management Topics. 3 Hours.

This course exposes new majors in Marketing and Supply Chain Management to the current thinking of management and supply chain professionals in consumer packaged goods (CPG) and the tools to determine consumer demand in the CPG industry. Pre- or Corequisite: MKTG 3433. Prerequisite: SCMT 2103. (Typically offered: Irregular)

MKTG 3833. Digital Marketing. 3 Hours.
An exploratory introduction to the tools and tactics used by today's marketers to effectively promote products, brands, and companies in the digital age, with focus on digital content, website design, graphic and video design, digital advertising, social media, search-engine optimization, email marketing, and marketing analytics. Prerequisite: MKTG 3433. (Typically offered: Irregular)

MKTG 4003H. Honors Marketing and Transportation Colloquium. 3 Hours.
Explores events, concepts and/or new developments in the field of Marketing and/or Transportation. Prerequisite: Senior standing, honors standing, and only Marketing majors or minors. (Typically offered: Irregular)

## MKTG 4103. Marketing Topics. 3 Hours.

Special topics in marketing not available in other courses. Topics are selected by the Marketing faculty for each semester each course is offered. Prerequisite: MKTG 3433. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

## MKTG 4233. Integrated Marketing Communications. 3 Hours.

The theory, knowledge, and application relevant to the coordination of marketing communications including advertising, personal selling, sales promotion, public relations, and publicity. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## MKTG 4343. Selling and Sales Management. 3 Hours.

Examines how organizations and individuals communicate value and obtain desired results through the process of personal selling and customer relationship management, along with the role of sales management in the development of people and resource utilization within the firm. Pre- or Corequisite: MKTG 3433. (Typically offered: Fall and Spring)

MKTG 4353. Advanced Professional Selling. 3 Hours.
Applies best practices of the selling process with hands-on and practical approaches to developing long-term business-to-business and business to customer relationships, communicating value and earning desired long-term results. The usage of role-play, involvement in sales competitions, sales data analytics and utilizing practitioner mentorships are key elements of this class with the goal of having the student be prepared to enter the sales field upon class completion.
Prerequisite: MKTG 4343. (Typically offered: Irregular)

## MKTG 4433. Retail Strategy. 3 Hours.

Concentrates on planning to meet the objectives and satisfy the retail marketing concept. Attention is devoted to retail format, competition among retail institutions, determination of store location, merchandise lines, atmospherics, and levels of customer service provided with the sale of consumer products. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

MKTG 4443. Retail Buying and Merchandise. 3 Hours.
Examination of supplier and buyer responsibilities and decisions associated with product assortment depth, budgets, promotions, inventory investment and control, and gross margin management for consumer goods including apparel, food, and durables. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## MKTG 4453. New Product Development. 3 Hours.

The course is structured along the three main dimensions of new product development: designing, manufacturing, and marketing of new products. An analytical approach is taken consistent with current thinking and practice of the industry. Students learn the best approaches from a marketing manager's perspective to effectively manage the NPD process. Prerequisite: MKTG 3433. (Typically offered: Fall)

## MKTG 450V. Independent Study. 1-3 Hour.

The Marketing Independent Study course permits students on an individual basis to explore select topics in Marketing and Retail. Independent study projects will explore topics relevant for marketing and retail that typically are not covered in the existing curriculum. Prerequisite: Junior standing. (Typically offered: Irregular)

## MKTG 4513. Nonprofit Marketing. 3 Hours.

This course is designed to give students a deeper understanding of marketing in the nonprofit sector, how it functions and how nonprofit marketing differs from traditional for profit marketing through leadership opportunities. Students will work with local nonprofits on various marketing projects throughout the semester. The class will use a service learning model of instruction where students take a leadership role in project development and execution. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## MKTG 4633. Global Marketing. 3 Hours.

Examines differences in global environment; how cultural considerations, political, legal, and economic conditions affect market entry strategies and marketing mix decisions; development of marketing plan for global environments. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

MKTG 4733. Social Media and Marketing. 3 Hours.
Social media and marketing will explore different strategies to develop and execute a successful social media plan for various businesses. The class will also teach students how to create engaging content, manage social media accounts, track social media metrics, and leverage social media advertising to reach their target audience. Students will also learn about the different social media platforms and how to choose the right ones for various businesses. By the end of the course, students will have a comprehensive understanding of social media marketing and the tools and techniques to build and manage a strong social media presence for businesses. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## MKTG 4853. Marketing Management. 3 Hours.

Strategic planning and management of the marketing function within the firm from a managerial viewpoint. Focus on the development and management of marketing strategies and tactics related to product, pricing, promotion, and distribution decisions. Prerequisite: MKTG 3633 and MKTG 3553. (Typically offered: Fall and Spring)

## MKTG 4933. Search Marketing. 3 Hours.

A thorough examination of prevalent strategies, tactics, and tools used by today's marketers to generate qualified search traffic for their websites, content, ecommerce pages, and other digital properties. With a focus on the most powerful search and e-commerce platforms today, including Google, YouTube, Amazon, and Walmart.com, this course will demonstrate how effective content creation, search engine optimization (SEO), and search engine marketing (i.e., paid search) can help marketers accrue traffic, capture leads, drive sales, and grow a business. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

## Strategy, Entrepreneurship and Venture Innovation (SEVI)

Jason Ridge
Department Chair
515 Willard J. Walker Hall
jridge@walton.uark.edu
The Department of Strategy, Entrepreneurship and Venture Innovation offers undergraduate, master's, and doctoral programs for students who are interested in starting their own business or nonprofit organization or who are interested in developing innovation and creativity skills valuable to existing organizations.

The department offers a major in Innovation and Entrepreneurship. The major is most pertinent for students aiming to manage a small business or who have a clear idea for a venture they would like to create.

## Requirements for B.S.B.A. in Innovation and Entrepreneurship

 Innovation and Entrepreneurship MajorThe Innovation and Entrepreneurship major is aimed at Walton College Students who intend to start new for-profit, non-profit or for-benefit ventures, manage and grow small businesses, or enter the workforce with an entrepreneurial mindset and skills in innovation and technology commercialization.

The major requires 24 hours in addition to satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a Strategy, Entrepreneurship and Venture Innovation (i.e. core, major, electives) unless the courses are part of an interdisciplinary minor or collateral track.

| SEVI 2013 | Introduction to Venture and Value Creation | 3 |
| :---: | :---: | :---: |
| Choose one of the following Thematic Core courses: |  | 3 |
| SEVI 3233 | Corporate Innovation |  |
| SEVI 3673 | Social Entrepreneurship |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| SEVI 4433 | Small Enterprise Management |  |
| Choose three of the following courses: |  | 9 |
| SEVI 3673 | Social Entrepreneurship |  |
| SEVI 3233 | Corporate Innovation |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| SEVI 4003H | Honors Strategy, Innovation and Entrepreneurship Colloquium |  |
| MGMT 4103 | Special Topics in Management |  |
| MGMT 4253 | Leadership |  |
| MGMT 4263 | Organizational Change and Development |  |
| SEVI 4433 | Small Enterprise Management |  |
| SEVI 4543 | Students Acquiring Knowledge Through Enterprise (S.A.K.E.) Product Innovation Lab |  |
| SEVI 4583 | International Management |  |
| MGMT 4943 | Talent Acquisition and Management |  |
| MGMT 4953 | Organizational Rewards and Compensation |  |
| SEVI 4993 | Entrepreneurship Practicum |  |
| Choose three of the following courses: |  | 9 |
| ACCT 3723 | Intermediate Accounting I |  |
| ACCT 3843 | Fundamentals of Taxation I |  |
| BLAW 3033 | Commercial Law |  |
| FINN 3053 | Financial Markets and Institutions |  |
| FINN 3623 | Risk Management |  |
| FINN 3933 | Real Estate Principles |  |
| FINN 4123 | Valuing New Ventures |  |
| FINN 4243 | New Venture Finance |  |
| ISYS 2263 | Principles of Information Systems |  |
| MKTG 3553 | Consumer Behavior |  |
| MKTG 4233 | Integrated Marketing Communications |  |
| MKTG 4343 | Selling and Sales Management |  |
| MKTG 4433 | Retail Strategy |  |
| MKTG 4453 | New Product Development |  |
| MKTG 4633 | Global Marketing |  |
| SCMT 3613 | SOURCE: Procurement and Supply Management |  |

Choose three of the following courses: 9

| SCMT 3623 | PLAN: Inventory and Forecasting Analytics |
| :--- | :--- |
| SCMT 4653 | Supply Chain Strategy and Change Management |
| BUSI 3003H | Honors College Colloquium |
| BUSI 3023 | Sustainability in Business |

## Total Hours

## Innovation and Entrepreneurship B.S.B.A. Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan should see the Eight Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{3}$ | 3 |  |
| MATH 2053 Finite Mathematics (Satisfies General Education Outcome 2.1) ${ }^{1,3}$ | 3 |  |
| BUSI 1111 Freshman Business Connection ${ }^{3}$ | 1 |  |
| SCMT 2103 Integrated Supply Chain Management ${ }^{2}$ | 3 |  |
| MGMT 2103 Managing People and Organizations ${ }^{2}$ | 3 |  |
| ISYS 1123 Business Application Knowledge Computer Competency ${ }^{3}$ | 3 |  |
| BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$ |  |  |
| COMM 1313 Public Speaking (ACTS <br> Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) ${ }^{3}$ |  |  |
| ACCT 2013 Accounting Principles ${ }^{3}$ <br> BUSI 1033 Data Analysis and Interpretation ${ }^{3}$ |  |  |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2023 Principles of Microeconomics (ACTS <br> Equivalency = ECON 2203) ${ }^{3}$ <br> or ECON 2013 Principles of Macroeconomics <br> (ACTS Equivalency $=$ ECON 2103) |  |  |
| Year Total: | 16 |  |
| Second Year |  | Units |
|  | Fall | Spring |
| ACCT 2023 Accounting Principles II ${ }^{3}$ or SEVI 2053 Business Foundations | 3 |  |
| SEVI 2013 Introduction to Venture and Value Creation | 3 |  |
| Satisfies General Education Outcome 3.3: |  |  |
| ECON 2013 Principles of Macroeconomics (ACTS Equivalency $=$ ECON 2103) ${ }^{3}$ <br> or ECON 2023 Principles of Microeconomics <br> (ACTS Equivalency $=$ ECON 2203) | 3 |  |

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{3}$
Fine Art/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2 ) 5, 6

Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 as well as the Social Issues, Multicultural Environment and Demographic Diversity requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{3}$
3 hours general education elective
Select one of the following:
ISYS 2103 Business Information Systems ${ }^{2}$
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing ${ }^{2}$
Science - State Minimum Core (Satisfies General Education Outcome 3.4)
ALL pre-business requirements should be met by end of term
Year Total:

| Third Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| Select two of the following: | 6 |  |

U.S. History or Government - State Minimum Core 3
(Satisfies General Education Outcome 4.2)
SEVI/MGMT Major Course

SEVI 3013 Strategic Management (Satisfies 3
3 General Education Outcome 6.1)
General Electives 3
Year Total: 15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| Major Elective Course | 3 |  |
| General Electives | 3 |  |
| Fine Art/Humanities - State Minimum Core | 3 |  |

Major Elective Course
Junior/Senior Business Electives
Science - State Minimum Core (Satisfies General
Education Outcome 3.4)
Year Total:

Junior/Senior Business Electives

## Total Units in Sequence:

${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053.
2 Must be completed prior to SEVI 3013 (http://catalog.uark.edu/search/? P=MGMT\%203013).
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity Requirement include: ANTH 1023, HIST 1113, HIST 1123, SOCI 2013, SOCI 2013H, or SOCI 2033.
${ }^{5}$ The Fine Arts Elective courses which satisfy the General Education Outcome for 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
${ }^{6}$ The Humanities Elective courses which satisfy General Education Outcome 3.2 include:
AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, ENGL 2023, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or Intermediatelevel world language (usually 2003-level).

## Minor in Innovation and Entrepreneurship for Business Majors

The Department of Strategy, Entrepreneurship and Venture Innovation offers a minor for Walton College students desiring more knowledge of innovation and entrepreneurship to assist them in their business careers. The minor requires the completion of 15 specific hours of study with all of the upper division courses applied toward the minor taken in residence. The 15 hours include the following courses:

Required course

| SEVI 2013 | Introduction to Venture and Value Creation | 3 |
| :--- | :--- | :--- |
| Choose one of the following Thematic Core courses: | 3 |  |
| SEVI 3233 | Corporate Innovation |  |
| SEVI 3673 | Social Entrepreneurship |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| SEVI 4433 | Small Enterprise Management |  |

Choose three of the following courses:

## SEVI 3673 Social Entrepreneurship

SEVI 3933 Entrepreneurship and New Venture Development
SEVI 4433 Small Enterprise Management
SEVI 3233 Corporate Innovation *
MGMT 4103 Special Topics in Management
SEVI 4543 Students Acquiring Knowledge Through Enterprise (S.A.K.E.) Product Innovation Lab

SEVI 4003H Honors Strategy, Innovation and Entrepreneurship Colloquium
MGMT 4253 Leadership
MGMT 4263 Organizational Change and Development

| SEVI 4583 | International Management |
| :--- | :--- |
| MGMT 4943 | Talent Acquisition and Management |
| MGMT 4953 | Organizational Rewards and Compensation |
| SEVI 4993 | Entrepreneurship Practicum |
| * students may choose if not otherwise used toward the Thematic |  |
| Core course option |  |

Total Hours
Students who desire to earn an Innovation and Entrepreneurship minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

## Entrepreneurship Undergraduate Microcertificate

The Entrepreneurship Undergraduate Microcertificate will teach students the core tools necessary to start a new business venture, allowing them to learn the process by the practical building of their own new venture. The program aims to equip students with the knowledge, skills, and abilities to improve the probability of commercial success for an innovative new product and service of their choosing. The CiE program will consist of three 3-hour courses taken over the timeframe of at least two semesters.

The curriculum will cover the core principles of the Lean Canvas methodology and the use of Customer Discovery and other forms of research to validate the magnitude of the problem, determine the most likely solution for success and develop the business and financial models in preparation for investment. Students will bring problems they want to solve to these classes with the goal to vet potential solutions and prepare business models for presentation to investors, either through collegiatebased business pitch competitions or other means.

Required Courses

| SEVI 3303 | Startup Toolkit |
| :--- | :--- |
| SEVI 4303 | Venture Builders |

Electives--select any course from the following 3
SEVI 3673 Social Entrepreneurship
SEVI 4433 Small Enterprise Management
SEVI 4543 Students Acquiring Knowledge Through Enterprise (S.A.K.E.) Product Innovation Lab

SEVI 4583 International Management
SEVI 4993 Entrepreneurship Practicum
MGMT 4253 Leadership
Total Hours

## Microcertificate in Organizational Innovation

The Organizational Innovation Undergraduate MicroCertificate is designed to help further develop organizational innovation leaders through an undergraduate practicum-based program in organization innovation. The Undergraduate MicroCertificate will leverage the programs of the McMillon Innovation Studio. The Organizational Innovation Undergraduate MicroCertificate requires 9 hours of coursework to complete.

Organizational Innovation Undergraduate MicroCertificate Requirements:

The Organizational Innovation Undergraduate MicroCertificate requires 9 credit hours that may also be used to fulfill the requirements for an undergraduate degree. The specific requirements are listed below, See an adviser for course selection.

## Required Courses

SEVI 3233 Corporate Innovation
SEVI 4233 Corporate Innovation II
Select one of the following:
BUSI 330V Walton College Study Abroad
SEVI 310V Entrepreneurship Internship
Total Hours
9
Note: BUSI 330V credit allowed with Program Director approval only.

## Outdoor Products and Services Undergraduate Microcertificate

The Outdoor Products and Services Undergraduate Microcertificate is designed to provide students interested in pursuing careers or starting businesses in the outdoor products and services industries with the necessary background to be successful in these growing areas. The undergraduate microcertificate will provide specific instruction on such topics as the economics, culture, health benefits, infrastructure requirements, workforce diversity needs and ethical aspects of developing and managing appropriate products and services in the outdoor industries.

## Outdoor Products and Services Undergraduate Microcertificate Requirements:

The Outdoor Products and Services Undergraduate Microcertificate requires nine credit hours that may also be used to fulfill the requirements for an undergraduate degree. The specific requirements are listed below. See an advisor for course selection.

| Required Class |  |  |
| :--- | :--- | :--- |
| SEVI 2073 | Introduction to Outdoor Recreation Industries | 3 |
| Elective Courses: select two | 6 |  |
| SEVI 4703 | Outdoor Industries Capstone Experience |  |
| SEVI 4713 | Outdoor Industries Product Innovation Studio |  |
| SEVI 3673 | Social Entrepreneurship ${ }^{1}$ |  |
| SEVI 3933 | Entrepreneurship and New Venture Development ${ }^{1}$ |  |
| BUSI 330V | Walton College Study Abroad ${ }^{2}$ |  |
| SEVI 310V | Entrepreneurship Internship ${ }^{2}$ |  |

## Total Hours

${ }^{1}$ For SEVI 3673 and SEVI 3933 Outdoor Industries, program director approval is required.
${ }^{2}$ For BUSI 330V and SEVI 310V Outdoor Industries, program director approval is required.

## Undergraduate Microcertificate in Social Innovation

The Social Innovation Undergraduate Microcertificate is designed to provide students with a grounding in social entrepreneurship both as a social movement as well as an alternative to traditional business approaches. The Undergraduate Microcertificate will provide students with hands-on experience in learning about developing their own social venture from idea to pitch and it will enable them to determine the
viability, sustainability and scalability of their ideas. The Undergraduate Microcertificate also allows for opportunities to learn about social innovation strategies and techniques for consulting with social enterprises.

## Social Innovation Undergraduate Microcertificate

The Social Innovation Undergraduate Microcertificate requires nine credit hours that may be used to fulfill the requirements for an undergraduate degree. The specific requirements are listed below. See an adviser for course selection.

| Required Courses | - Select one or two of the following: | 3-6 |
| :---: | :---: | :---: |
| SEVI 3033 | Social Innovation Strategies |  |
| SEVI 3673 | Social Entrepreneurship |  |
| Elective Courses - Select one or two of the following: |  | 3-6 |
| BUSI 3003H | Honors College Colloquium ${ }^{1}$ |  |
| BUSI 330V | Walton College Study Abroad ${ }^{1}$ |  |
| SEVI 310V | Entrepreneurship Internship |  |
| SEVI 4333 | Biomedical Innovations for Global Impact |  |
| Total Hours |  | 9 |

${ }^{1}$ BUSI 3003 H credit is only for the Consulting for Social \& Environmental Impact Colloquium and BUSI 330 V credit only allowed for specified study abroad classes.

## Faculty

Callander, Adrienne, M.F.A. (Rutgers University), P.Bacc. (Maryland Institute College of Art), B.A. (Reed College), Clinical Assistant Professor, 2017.

Chen, Diana, Ph.D., M.S. (University of Arkansas), B.S. (Colorado State University), Lecturer, 2020.
Cummings, Michael, Ph.D. (University of Minnesota), J.D. and M.P.A. (Brigham Young University), B.S. (Utah Valley), Assistant Professor, 2017.

Cummings, Shaughan, J.D., M.P.A., B.A. (Brigham Young University), Teaching Assistant Professor, 2018.
Ellstrand, Alan E., Ph.D. (Indiana University at Bloomington), M.B.A. (North Illinois University), B.S. (University of Illinois-Urbana), Professor, 2000, 2002.
Garcia Contreras, Rogelio, Ph.D., M.A. (University of Denver), B.A. (Universidad Nacional Autonoma de Mexico), Teaching Assistant Professor, 2015.
Goforth, Sarah, M.A. (University of Wisconsin-Madison), B.A. (Hendrix College), Instructor, 2017.
Grandy, Jake, Ph.D. (University of Southern California), M.A. (University of New Mexico), B.S. (University of British Columbia), Assistant Professor, 2020.

Johnson, Jon, Ph.D. (Indiana University at Bloomington), M.B.A., B.S. (University of Arkansas), Professor, Walton College Professorship in Sustainability, 1996, 2007.
Osborne, Cara, M.S., Sc.D. (Harvard University), M.S.N. (Vanderbilt University), B.A. (Transylvania University), Assistant Professor of Practice, 2020.
Petrenko, Oleg, Ph.D. (Oklahoma State University), M.B.A., B.S.B.A. (University of Central Oklahoma), Assistant Professor, 2020.
Reeves, Carol, Ph.D. (University of Georgia), M.A. (University of South Carolina), B.S. (Georgia Southern College), Professor, Cecil and Gwendolyn Cupp Applied Professorship in Entrepreneurship, 1990, 2012.

Ridge, Jason, Ph.D., M.A., B.A. (Oklahoma State University), Associate Professor, 2015, 2017.
Worrell, Dan, Ph.D., M.S., B.S. (Louisiana State University), Professor, Corporate Responsibility Professorship in Management, 2005.
Zweig, Mark, M.B.A., B.S. (Southern Illinois University at Carbondale), Executive in Residence, 2005.

## Accounting (ACCT)

Jonathan Shipman
Department Chair
461 Business Building
479-575-6803
Accounting Department Website (https://walton.uark.edu/departments/ accounting/)

The mission of the William T. Dillard Department of Accounting is to cultivate an environment of educational excellence. We do so by pursuing the following endeavors:

- Providing a learning environment in which students interact with others to identify and solve accounting and business problems.
- Developing and disseminating knowledge that has the potential for significant impact on accounting, business, and education.
- Interacting with the accounting profession, the business and academic communities, and the community at large.

The Department of Accounting offers an undergraduate degree program in accounting and graduate programs at both the master's and doctoral levels. The department's programs are accredited by the AACSB - The International Association for Management Education, which ensures quality and promotes excellence and continuous improvement in undergraduate and graduate education. In addition, the accounting department offers courses in Business Law.

The objective of the B.S.B.A. accounting curriculum is to provide students with a broad overall education, solid grounding in the common body of knowledge of business administration, and exposure to accounting in sufficient depth to help them achieve entry-level competence for pursuit of a career in industry. The department also offers a five-year integrated program approach to receive the Master of Accountancy degree, which leads to the simultaneous award of the B.S.B.A. and the Master of Accountancy degrees. The integrated program is designed for students who wish to concentrate in accounting and obtain education in an accounting specialization. The objective of the integrated program is to provide students with advanced knowledge of accounting and business topics in order to obtain an accelerated position in accounting or help them launch a career in public accounting. Those students who are not accepted into the integrated program or choose not to enroll in the integrated program will be allowed to graduate with a B.S.B.A. upon successful completion of the B.S.B.A. degree requirements and Accounting Major Requirements.

Students may elect to pursue the B.S.B.A. in Accounting or a Minor in Accounting in an online format. Students must apply to the University of Arkansas, Office of Admissions for consideration to enroll in the B.S.B.A. and indicate their interest in the online program on the admissions application. Students are required to submit official transcripts (either high school or college transcripts or both), and an application fee. Students interested in pursuing a minor must notify the Walton College Undergraduate Programs Office.

## Accounting Major Requirements

| Course Requirements in the Major (27 hours) |  |  |
| :--- | :--- | :--- |
| ACCT 3533 | Accounting Technology | 3 |
| ACCT 3543 | Accounting Analytics | 3 |
| ACCT 3723 | Intermediate Accounting I | 3 |
| ACCT 3753 | Intermediate Accounting II | 3 |
| ACCT 3843 | Fundamentals of Taxation I | 3 |
| ACCT 4203 | Fundamentals of Taxation II | 3 |
| ACCT 4673 | Product, Project and Service Costing | 3 |
| ACCT 4703 | Governmental/Nonprofit Accounting | 3 |
| ACCT 4963 | Audit and Assurance Services | 3 |

Maximum of 30 hours of ACCT courses in department (core, major, elective). More than 30 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

## Total Hours

## Junior/Senior Business Electives (9 hours)

Selection of electives should be made in consultation with academic advisors.

The following courses are highly recommended to satisfy the junior/senior business elective requirement if not used toward the major: ACCT 310V, ACCT 310 VH , ACCT 3543, ACCT 410V, ACCT 4003H, FINN 3013, FINN 3103, ACCT 4123H, ISYS 4213 or any 3-hour Walton College Study Abroad Course. Students in the online program are encouraged to complete ACCT 310V, FINN 3013, ISYS 4213, or any 3-hour Walton College Study Abroad Course.

Maximum of 30 hours of ACCT courses in department (core, major, elective). More than 30 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

Accounting Students are encouraged to utilize ACCT 310V in the Spring of Year 4 for Internship Credit as a business elective (in combination with compressed sections of ACCT 4673 and ACCT 4963). To do so requires the student to defer 3 credit hours of General Education electives to an alternative Fall, Spring, or Summer semester. This also strengthens the ability of the student to transition into the Master of Accounting Program.

## Accounting B.S.B.A. Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan should see the Eight Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| MATH 2053 Finite Mathematics (Satisfies <br> General Education Outcome 2.1) |  |  |
| BUSI 1111 Freshman Business Connection |  |  |
| B | $\mathbf{3}$ | $\mathbf{1}$ |Management ${ }^{2}$

MGMT 2103 Managing People and
Organizations ${ }^{2}$
ISYS 1123 Business Application Knowledge -
Computer Competency ${ }^{3}$
BLAW 2013 The Legal Environment of
Business (ACTS Equivalency = BLAW 2003) ${ }^{2}$
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies General
Education Outcomes 1.2 and 5.1) ${ }^{3}$
ACCT 2013 Accounting Principles ${ }^{3}$
BUSI 1033 Data Analysis and Interpretation ${ }^{3}$
Satisfies General Education Outcome 3.3:
ECON 2023 Principles of Microeconomics (ACTS
Equivalency = ECON 2203) ${ }^{3}$
or ECON 2013 Principles of Macroeconomics
(ACTS Equivalency $=$ ECON 2103)
Year Total:
Second Year
ACCT 2023 Accounting Principles II
Choose one of the following options:
ISYS 2103 Business Information Systen
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing ${ }^{2}$
Satisfies General Education Outcome 3.3:
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency $=$ ECON 2103) ${ }^{3}$
or ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{3}$
Fine Art/Humanities - State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5}$, 6
Social Sciences - State Minimum Core (Satisfies General Education Outcomes 3.3 and 4.1 , as well as the Social Issues, Multicultural Environment and Demographic Diversity Requirement) ${ }^{4}$
MATH 2043 Survey of Calculus (ACTS
Equivalency = MATH 2203) ${ }^{3}$
3 hours General Education Elective
Choose one of the following options:
ISYS 2103 Business Information Systems ${ }^{2}$
FINN 2043 Principles of Finance ${ }^{2}$
MKTG 3433 Introduction to Marketing (whichever was not taken earlier) ${ }^{2}$
Science - State Minimum Core (Satisfies General Education Outcome 3.4)
ALL pre-business requirements should be met by end of term
Year Total:

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| Choose one of the following options: | 3 |  |
| MKTG 3433 Introduction to Marketing ${ }^{2}$ |  |  |
| FINN 2043 Principles of Finance ${ }^{2}$ |  |  |
| ISYS 2103 Business Information Systems (whichever was not taken earlier) ${ }^{2}$ |  |  |
| Fine Arts/Humanities - State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{5}$, 6 | 3 |  |
| ACCT 3723 Intermediate Accounting I | 3 |  |
| ACCT 3843 Fundamentals of Taxation I | 3 |  |
| U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2) | 3 |  |
| ACCT 3543 Accounting Analytics |  | 3 |
| ACCT 3753 Intermediate Accounting II |  | 3 |
| ACCT 4203 Fundamentals of Taxation II |  | 3 |
| SEVI 3013 Strategic Management ((Satisfies General Education Outcome 6.1) |  | 3 |
| General Electives |  | 3 |
| Year Total: | 15 | 15 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| ACCT 3533 Accounting Technology | 3 |  |
| ACCT 4703 Governmental/Nonprofit Accounting | 3 |  |
| Junior/Senior Business Electives | 6 |  |
| General Electives | 3 |  |
| ACCT 4673 Product, Project and Service |  | 3 |
| Costing |  |  |
| ACCT 4963 Audit and Assurance Services |  | 3 |
| Junior/Senior Business Electives |  | 3 |
| Science - State Minimum Core (Satisfies General Education Outcome 3.4) |  | 4 |
| Year Total: | 15 | 13 |

Total Units in Sequence:
${ }^{1}$ Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2053 or MATH 2554.
${ }^{2}$ Must be completed prior to SEVI 3013.
${ }^{3}$ Must be completed prior to taking any 3000 or 4000 level business courses.
${ }^{4}$ The Social Sciences Elective courses that satisfy General Education Outcomes 3.3 and 4.1, as well as the Social Issues, Multicultural Environment, and Demographic Diversity requirement, include: ANTH 1023, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, SOCI 2013, SOCI 2013H, or SOCI 2033.
5 The Fine Arts Elective courses that satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
6 The Humanities Elective courses that satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003,

ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123, or Intermediate-level world language (usually 2003-level).

## Accounting Minor for Business Students

The Department of Accounting offers a minor for Walton College students desiring more knowledge of accounting to assist them in their business careers. The minor requires the completion of 15 specific hours of study with all of the upper division courses applied toward the minor taken in residence. The 15 hours include the following courses:

| ACCT 3723 | Intermediate Accounting I | 3 |
| :--- | :--- | :--- |
| ACCT 3753 | Intermediate Accounting II | 3 |
| ACCT 3843 | Fundamentals of Taxation I | 3 |
| Choose two of the following three courses: | 6 |  |
| ACCT 3533 | Accounting Technology |  |
| ACCT 4673 | Product, Project and Service Costing |  |
| ACCT 4963 | Audit and Assurance Services |  |

## Total Hours

Students who desire to earn an Accounting minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

## Admission

Students are admitted to the integrated program according to the following requirements. Admission is granted only for the fall semester; Feb. 15 of the Junior year is the application deadline for those who wish to begin the integrated program the following fall. Students interested in this program must have completed 90 credit hours of study towards the baccalaureate degree (including ACCT 2013, ACCT 3723 and ACCT 3843) by the Feb. 15 deadline.

Acceptance into the integrated program is based upon the discretion of the admissions committee. The committee considers the overall quality of the applications, including the overall grade point average and the grades in ACCT 2013, ACCT 3723 and ACCT 3843. In addition, they are expected to have already mastered basic accounting concepts or, demonstrated, with and official, Graduate Management Admission Test (GMAT) score, as well as other relevant examples of academic ability and leadership. To receive serious consideration by the admissions committee, a student should have a minimum GPA of 3.0 within the applicant's overall university and accounting coursework. Due to the demand for seats in the program, the admissions committee selectively restricts admission into the program based upon the availability of instructional resources. Students must complete at least two long-session semesters in residence in the Master of Professional Accounting or Master of Accountancy program.

Transfer students will be handled on a case-by-case basis.

## Satisfactory Progress

Students are expected to make continuous progress toward the degree by completing required accounting coursework each semester. Students who fail to meet the requirements for the M.P.Ac. or M.Acc. program must choose another major of study or finalize their B.S.B.A. in Accounting. Students will be notified before this action is taken and should meet with an academic advisor in the Undergraduate Programs Office upon notification.

## Probation

A student is placed on probation if his or her grade point average in core undergraduate accounting courses falls below 3.00. Except with the consent of the M.Acc./M.P.Ac. Program Director a student on probation may not take graduate accounting courses.

## Graduation

To receive an integrated B.S.B.A/M.Acc./M.P.Ac. degree, a student must have a grade point average of at least 3.00 in all coursework taken as part of the minimum 30-hour M.Acc. or M.P.Ac. degree. He or she must also have a grade point average in graduate accounting coursework of at least 3.00 .

## Degree Requirements

The requirements of B.S.B.A./M.Acc./M.P.Ac. Integrated program are:

## 1. Undergraduate coursework

a. Complete the B.S.B.A. degree requirements and Accounting Major Requirements detailed above.
b. Students are strongly encouraged, but not required, to participate in an accounting internship, ACCT 310V, ACCT 310VH, or ACCT 535V.
2. Graduate coursework

Students with appropriate backgrounds in business administration and economics and with an undergraduate concentration in accounting will be required to complete 30 semester hours of course work beyond the baccalaureate degree, at least 21 semester hours of which must be in courses reserved exclusively for graduate students..

All students must be enrolled for a minimum of 9 hours during consecutive fall/spring semesters during their graduate year. The student must be in residence a minimum of 24 weeks (see residency requirements of the Master of Arts/Master of Science).

Students must complete the specified graduate coursework of the M.Acc. or M.P.Ac. degrees as described in the Graduate Catalog.

The M.Acc./M.P.Ac. degree programs do not require a thesis. Successful completion of the integrated B.S.B.A/M.Acc./M.P.Ac. program from the University of Arkansas will qualify a student to take relevant professional examinations.

For further information, write to the M.Acc./M.P.Ac. Adviser, Department of Accounting, Walton College of Business, University of Arkansas, Fayetteville, AR 72701 or contact the Graduate School of Business at gsb@walton.uark.edu.

## Faculty

Allee, Kristian, Ph.D., M.B.A. (Indiana University), B.S. (Brigham Young University), Associate Professor, Garrison/Wilson Chair in Accounting, 2016.

Atwood, T. J., Ph.D. (University of Illinois), M.B.A. (University of Texas at Austin), B.S. (Western Kentucky University), Associate Professor, 2014.

Bryan, Barry J., Ph.D. (Texas A\&M University), M.B.A., B.S.B.A.
(University of Arkansas), Teaching Professor, 2020.
Cassell, Cory A., Ph.D. (Texas A\&M University), M.S., B.S. (Trinity University), Professor, Ralph McQueen Distinguished Chair in Accounting, 2009, 2020.
Clarke, Morgan, M.Acc., B.A., B.Acc. (University of Arkansas), Instructor, 2021.

Crawley, Michael, Ph.D. (University of Texas at Austin), M.B.A., B.S. (Indiana University), Teaching Assistant Professor, 2016.
Dobrzykowski, Sarah, J.D. (Ohio Northern University), M.O.D., B.S.B.A. (Bowling Green State University), Instructor, 2019.
Gilber, Courtney, J.D., B.A. (University of Arkansas), Instructor, 2022.
Hayes, Thomas P., Ph.D. (University of North Texas), M.Acc. (University of Missouri), B.A. (Westminster College), Teaching Associate Professor, 2019.

Henry, Erin E., Ph.D. (University of Connecticut), M.S. (University of Memphis), B.Acc. (Mississippi State University), Associate Professor, 2019, 2023.
Jarnagin, Robyn, LL.M. (New York University), J.D., B.S. (University of Montana), Clinical Associate Professor, 2016, 2020.
Krupa, Trent, Ph.D. (University of Connecticut), M.B.A. (Bryant University), B.S.B.A., Assistant Professor, 2022.
McDermott, Reba, Ph.D. (Oklahoma State University), M.B.A. (University of Texas- San Antonio), B.S.B.A (Virginia Commonwealth University, University of Arkansas), Executive-in-Residence Instructor, 2021.
Peters, Gary F., Ph.D. (University of Oregon), M.S. (University of Missouri-Columbia), B.S. (Arkansas Tech University), Professor, S. Robson Walton Chair in Accounting, 2003, 2012.
Petrone, Kim, J.D. (Northwestern University), B.A. (Southern Methodist University), Teaching Assistant Professor, 2012, 2020.
Rawson, Caleb, Ph.D. (University of Colorado at Boulder), B.S. (Colorado Christian University), Assistant Professor, 2018.
Raymundo, Fellipe, Ph.D. (University of Tennessee, University of Arkansas), M.A. (University of Arkansas), B.A. (Ibmec), Assistant Professor, 2020.
Reed, Chad, M.Acc. (University of Missouri-Columbia), Instructor, 2022.
Richardson, Vernon J., Ph.D. (University of Illinois-Urbana-Champaign), M.B.A., B.S. (Brigham Young University), Distinguished Professor, G. William Glezen Jr. Endowed Chair in Accounting, 2005, 2016.
Rowe, Stephen, Ph.D. (University of Illinois), M.S. (Loyola University Chicago), B.A. (Covenant College), Associate Professor, 2016, 2020.
Shipman, Jonathan, Ph.D. (University of Tennessee), B.S. (University of Central Arkansas), Associate Professor, 2015, 2019.
Terrell, Katie, M.B.A. (University of Arkansas), B.A. (University of Central Arkansas), Instructor, 2012.
Thomas, JaLynn D., B.S. (Louisiana Tech College Ruston Campus), Instructor, 2011.
Ward, Ryane, J.D. (University of Arkansas), B.A. (University of Kansas), Instructor, 2022.
Wiebe, Zac, Ph.D., M.Acc. (University of Kansas), B.S. (University of Saskatchewan), Assistant Professor, 2018.

## Accounting Courses

ACCT 2013. Accounting Principles. 3 Hours.
Introduction of accounting as an information system with emphasis on processing and presenting information in the form of financial statements for use in decision making. The course emphasizes business processes and double entry accounting. Prerequisite: (Non-business majors: (ISYS 1123 with a grade of C or better) or DASC 1003 or ASTM 2903) and MATH 2043 or higher with a grade of $C$ or better), or (Business majors: (ISYS 1123 with a grade of C or better)), BUSI 1111 with a grade of $C$ or better, and (MATH 2053 or MATH 2554 each with a grade of $C$ or better)). (Typically offered: Fall, Spring and Summer)
ACCT 2013H. Honors Accounting Principles. 3 Hours.
Introduction of accounting as an information system with emphasis on processing and presenting information in the form of financial statements for use in decision making. The course emphasizes business processes and double entry accounting. This course is equivalent to ACCT 2013. Prerequisite: (Non-business majors: Honors Standing, (ISYS 1123 with a grade of C or better)), and MATH 2043 or higher with a grade of C or better) or (Business majors: Honors standing, (ISYS 1123 with a grade of C or better), BUSI 1111 with a grade of C or better, and (MATH 2053 or MATH 2554 with a grade of C or better)). (Typically offered: Spring) This course is equivalent to ACCT 2013.
ACCT 2023. Accounting Principles II. 3 Hours.
In this course we study managerial accounting concepts and their use in business decisions. We will examine the development and analysis of cost information for management use in decision-making, income determination, and performance evaluation. Prerequisite: ACCT 2013 with a grade of C or better. (Typically offered: Fall, Spring and Summer)

## ACCT 2023H. Honors Accounting Principles II. 3 Hours.

In this course we study managerial accounting concepts and their use in business decisions. We will examine the development and analysis of cost information for management use in decision-making, income determination, and performance evaluation. Prerequisite: ACCT 2013 with a grade of C or better and honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to ACCT 2023.
ACCT 2403. Accounting Fundamentals for Planning and Control. 3 Hours. Use of accounting information for planning and control, including interpretation of financial statements and fundamentals of managerial accounting. Topics include financial statement structures and analysis, profitability and cash flow analysis, cost behaviors, production cost analysis, budgeting, standard costs and performance reporting, sources and uses of corporate capital, and other related topics. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Fall and Spring)

## ACCT 310V. Accounting Internship. 1-3 Hour.

This class is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the accounting profession.
Prerequisite: Department consent and ACCT 3723 with a grade of $C$ or better. (Typically offered: Spring) May be repeated for up to 3 hours of degree credit.

## ACCT 310VH. Honors Accounting Internship. 1-3 Hour.

This class is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the accounting profession. Prerequisite: Honors standing, Department consent and ACCT 3723 with a grade of C or better. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.
This course is equivalent to ACCT 310V.

## ACCT 3533. Accounting Technology. 3 Hours.

This course provides an overview of accounting information systems and illustrates the importance of technology to accountants. Students are exposed to a variety of information technologies including manual, file-oriented, and database systems. The relative advantages and disadvantages of each type of system are highlighted and discussed. Prerequisite: ACCT 2013 with a grade of B or better. (Typically offered: Fall and Spring)

ACCT 3543. Accounting Analytics. 3 Hours.
This course provides students with an overview of the data analytics process in accounting: asking appropriate accounting questions, finding and mastering appropriate accounting data to address those questions, performing test analysis and communicating the results of the data through data visualizations. Extensive hands-on, experiential learning using short Excel and Tableau labs is a key part of the course. Basic knowledge of excel is recommended. Prerequisite: (Non-business majors: (ACCT 2013 with a grade of B or better) and (INEG 2314 or STAT 3013 with a grade of C or better)) or (Business majors: (ACCT 2013 with a grade of $B$ or better) and (BUSI 1033 with a grade of C or better)). (Typically offered: Fall and Spring)

## ACCT 3723. Intermediate Accounting I. 3 Hours.

This course is designed to study the theoretical basis for financial accounting concepts and principles related to financial reporting. This course emphasizes researching technical accounting pronouncements for application to external financial reporting issues. Prerequisite: ACCT 2013 with a grade of B or better. (Typically offered: Fall and Spring)

## ACCT 3753. Intermediate Accounting II. 3 Hours.

This is the second financial accounting course designed to continue study of financial accounting concepts and principles. This course emphasizes research of technical accounting pronouncements for application to external financial reporting issues. Prerequisite: ACCT 3723 with a grade of C or better. (Typically offered: Fall and Spring)

## ACCT 3843. Fundamentals of Taxation I. 3 Hours.

Introduction to federal income taxation with a focus on individuals, including basic tax concepts, income tax principles applicable to individual taxpayers, primary tax law authorities, tax research techniques, and tax planning strategies. Prerequisite: ACCT 2013 with a grade of B or better. (Typically offered: Fall and Spring)

ACCT 4003H. Honors Accounting Colloquium. 3 Hours.
Explores events, concepts and/or new developments in the field of accounting. Prerequisite: Honors standing, Senior standing and ACCT 3723 with a grade of $C$ or better. (Typically offered: Fall)

## ACCT 410V. Special Topics in Accounting. 1-3 Hour.

Explore current events, concepts and new developments relevant to Accounting not available in other courses. Prerequisite: Department consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ACCT 4123H. Professional Ethics and Corporate Governance. 3 Hours.
An examination of various aspects of accounting and business ethics including ethical theories; ethical reasoning; ethical values - including integrity, objectivity, auditor independence, and other values relevant for accountants; and ethics codes. The course provides students with a framework of ethical reasoning, professional values and attitudes for exercising professional skepticism and other behavior that is in the best interest of the public and accounting profession. Aspects of corporate governance related to establishing an ethical corporate culture will also be addressed. Prerequisite: Senior standing, Honors standing, and ACCT 3723 with a grade of C or better. (Typically offered: Spring)

## ACCT 4203. Fundamentals of Taxation II. 3 Hours.

Study of federal income taxation with a focus on entities other than individuals (C corporations, S corporations, partnerships, estates, and trusts) as well as an introduction to federal transfer taxes, state and local taxes, and multinational tax issues, including applicable tax principles and continued development of tax research techniques, and tax planning strategies. Prerequisite: ACCT 3723 and ACCT 3843 each with a grade of C or better. (Typically offered: Fall and Spring)

ACCT 4673. Product, Project and Service Costing. 3 Hours.
Cost systems with emphasis on information generation for cost management of products, projects and services. The course includes spreadsheet and other computer program analysis. Prerequisite: ACCT 2023 and ACCT 3723 each with grades of C or better. (Typically offered: Fall)

## ACCT 4703. Governmental/Nonprofit Accounting. 3 Hours.

Governmental and non-profit accounting, financial statement and internal controls compliance, and auditing for government and other non-profit organizations. Industry specific issues in accounting for health care organizations and colleges and universities; and federal governmental accounting. Prerequisite: ACCT 2013 and ACCT 2023 each with a grade of C or better. (Typically offered: Irregular)

## ACCT 4963. Audit and Assurance Services. 3 Hours.

Professional standards and procedures as applied to external and internal assurance engagements. Including coverage of the economic role of assurance providers, engagement planning, risk assessment, evidence gathering, and reporting. Prerequisite: ACCT 3723 with a grade of C or better. (Typically offered: Fall and Spring)

## Business Law Courses

BLAW 2013. The Legal Environment of Business (ACTS Equivalency = BLAW 2003). 3 Hours.

Introduction to the legal and ethical environment in which business operates. Topics covered in this survey course include: introduction to the legal system and the judicial resolution of disputes, constitutional law, administrative law, criminal law, torts, contracts, property law, advertising and marketing law, bankruptcy and credit transactions, business organizations, antitrust, employment law and ethics. (Typically offered: Fall, Spring and Summer)

## BLAW 2013H. Honors The Legal Environment of Business. 3 Hours.

Introduction to the legal and ethical environment in which business operates. Topics covered in this survey course include: introduction to the legal system and the judicial resolution of disputes, constitutional law, administrative law, criminal law, torts, contracts, property law, advertising and marketing law, bankruptcy and credit transactions, business organizations, antitrust, employment law and ethics. (Typically offered: Fall, Spring and Summer)
This course is equivalent to BLAW 2013.

## BLAW 3033. Commercial Law. 3 Hours.

A study of the laws applicable to commercial transactions. Topics covered include the common law of contracts, Articles Two (Sales) and Three (Commercial Paper) of the Uniform Commercial Code, secured transactions, suretyship, and bankruptcy. (Typically offered: Spring)

## Walton College of Business (WCOB)

Alan E. Ellstrand
Associate Dean for Programs and Research
328 Business Building
479-575-7105
Walton College offers five minor programs for business majors, each of which is interdisciplinary and not attached to a specific department in the college. Requirements for each of the minors are listed under the tabs.

Similarly, courses that are interdisciplinary and not assigned to a specific department in Walton College are listed here under the WCOB subject code.

## Minor in Blockchain Enterprise Systems for Business Majors

The minor requires completion of 15 hours of study with all of the upper division courses applied toward the minor in residence. Students who desire to earn a Blockchain Enterprise Systems minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for a minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upperdivision minor requirements must be taken in residence.

## Requirements for Minor in Blockchain Enterprise Systems:

## Required Courses

| ISYS 4173 | Blockchain Fundamentals | 3 |
| :--- | :--- | :--- |
| ISYS 4453 | Introduction to Blockchain Applications | 3 |
| ISYS 4463 | Blockchain Enterprise Systems Development | 3 |
| Choose 6 hours from the following: | 6 |  |
| ACCT 3533 | Accounting Technology |  |
| ACCT 3723 | Intermediate Accounting I |  |
| ACCT 4963 | Audit and Assurance Services |  |
| ECON 3433 | Money and Banking |  |
| ECON 4433 | Experimental Economics |  |
| ECON 4633 | International Trade |  |
| ECON 4743 | Introduction to Econometrics |  |
| ECON 4753 | Forecasting |  |
| FINN 3053 | Financial Markets and Institutions |  |
| FINN 3063 | Investments |  |
| FINN 3603 | Corporate Finance |  |
| ISYS 3293 | Systems Analysis and Design |  |
| ISYS 4193 | Business Analytics and Visualization |  |
| ISYS 4213 | ERP Fundamentals |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| MGMT 4263 | Organizational Change and Development |  |
| SCMT 3613 | SOURCE: Procurement and Supply Management |  |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics |  |
| SCMT 3643 | International Logistics |  |
| SCMT 3653 | Project Management: Supply Chain New Product |  |

## Total Hours

## Data and Cybersecurity Management Minor

The Data and Cybersecurity Management minor in the Information Systems Department of the Walton College of Business is designed to develop graduates able to help organizations assess and detect threats while securing and protecting data and data-driven systems against a myriad of threats such as malicious software, hacking, insider threats, and other cybercrimes. Students will also learn and apply best industry practices to minimize data collection, protect client and individual privacy, and otherwise further ethical data management. Students will not only learn about cybersecurity, crime, and privacy law, but will also learn about techniques of risk assessment, continuity planning, and threat detection.

This will include learning with respect to behavioral aspects, ethics, legal considerations, and best practices in cyber security management. The minor requires completion of 15 hours of study with all of the upper-level courses applied toward the minor in residence. The 15 hours include the following courses:

Required Core Courses (9 hours)

| ISYS 4013 | Principles of Data and Cybersecurity | 3 |
| :--- | :--- | :--- |
| ISYS 4023 | Network and Data Security in a Changing World | 3 |
| ISYS 4043 | Cybersecurity, Crime and Data Privacy Law <br> Fundamentals | 3 |
| Choose six hours from the following: | 6 |  |
| ISYS 3273 | Cryptocurrency |  |
| ISYS 4033 | Advanced Information Security Management |  |
| ISYS 4053 | Advanced Cybersecurity, Crime and Privacy Law |  |
| ISYS 4173 | Blockchain Fundamentals |  |
| MGMT 4243 | Ethics and Corporate Responsibility |  |

## Total Hours

Students who desire to earn a Data and Cybersecurity Management minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

## Enterprise Resource Planning Minor

The Walton College offers an interdisciplinary minor in Enterprise Resource Planning (ERP). ERP systems are large-scale programs, which are used by many large companies to integrate their business processes and run the organization using primarily one software system. The minor requires completion of 15 hours of study with all of the upper division courses applied toward the minor taken in residence.

## Requirements

| ISYS 4213 | ERP Fundamentals | 3 |
| :--- | :--- | :--- |
| ISYS 4223 | ERP Configuration and Implementation | 3 |
| Select three of the following: | 9 |  |
| ACCT 3533 | Accounting Technology |  |
| ACCT 3723 | Intermediate Accounting I |  |
| ISYS 4233 | Seminar in ERP Development |  |
| SCMT 3443 | DELIVER: Transportation and Distribution |  |
|  | Management |  |
| SCMT 3613 | SOURCE: Procurement and Supply Management |  |
| SCMT 3623 | PLAN: Inventory and Forecasting Analytics |  |

## Total Hours

Students who desire to earn an Enterprise Resource Planning minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

## Financial Economics Minor

The Walton College offers an interdisciplinary minor in Financial Economics. The minor will provide students with the background needed
for research in finance and industry. The minor requires completion of 15 hours of study with all of the upper division courses applied toward the minor taken in residence.

## Requirements

| FINN 3013 | Financial Analysis | 3 |
| :--- | :--- | :--- |
| ECON 4753 | Forecasting | 3 |
| Select three of the following: | 9 |  |
| FINN 3063 | Investments |  |
| FINN 3603 | Corporate Finance |  |
| ECON 3433 | Money and Banking |  |
| ECON 4743 | Introduction to Econometrics |  |

## Total Hours

Students who desire to earn a Financial Economics minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered in the minor. All upper level minor requirements must be taken in residence.

## Nonprofit Studies Minor

The Walton College offers an interdisciplinary minor in Nonprofit Studies. This minor will prepare students for working in the nonprofit sector as well as educating students who may be on boards and participate in other civic organizations. The minor requires completion of 15 hours of study with all of the upper division courses applied toward the minor taken in residence.

## Requirements

Required Course:
MKTG $4513 \quad$ Nonprofit Marketing 3

Select four courses from the following: 12
Tier 1 (Must select at least two courses):

| ACCT 4703 | Governmental/Nonprofit Accounting |
| :--- | :--- |
| ECON 3143 | Economics of Poverty and Inequality |
| ECON 3843 | Economics of the Developing World |
| ENGL 3053 | Technical and Professional Writing (ACTS <br>  <br> Equivalency = ENGL 2023) |
| MGMT 4253 | Leadership |
| MGMT 4263 | Organizational Change and Development |
| PLSC 3103 | Public Administration |
| PLSC 4183 | The Evolution of Nonprofits and Philanthropy |
| PLSC 4193 | Administrative Law |
| SEVI 3673 | Social Entrepreneurship |
| SCWK 4753 | Grantwriting |
| Tier 2 (Can select up to two courses): |  |
| BUSI 3023 | Sustainability in Business |
| AGEC 4163 | Agricultural and Rural Development |
| ENGL 2173 | Literacy in America |
| GEOS 3043 | Sustaining Earth |
| GEOS 4393 | American Public Lands \& Policy |
| GEOS 4693 | Environmental Justice |
| INST 3603 | Universal Human Rights: History and Practice <br> since 1945 |


| INST 4603 | Peace Studies: Approaches and Theory |
| :--- | :--- |
| INST 4653 | International Food Security and Food Sovereignty |
| INST 493V | Global Changemakers: Social Innovation Abroad |
| MGMT 4243 | Ethics and Corporate Responsibility |
| PLSC 4173 | Community Development |
| SCWK 3193 | Human Diversity and Social Work |
| SCWK 4153 | Social Welfare Policy |
| Total Hours | $\mathbf{1 5}$ |

Students who desire to earn a Nonprofit Studies minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point-average in the courses offered for the minor. All upper division level minor requirements must be taken in residence.

## Minors for Non-Business Students

For students who are business majors, the requirements for business minors are listed with each major business program.

For students who are business majors, the requirements for business minors are listed with each major business program.

To facilitate students outside Walton College in obtaining knowledge that will assist them in making sustained contributions to organizations and society in a global, diverse, and dynamic environment, the Walton College offers a business minor for non-business majors in a variety of disciplines.

Minors in Innovation and Entrepreneurship, as well as Leadership, are designed to focus more exclusively on core topics. These minors, therefore, require fewer hours of focused study, respectively, and only a general overview of business topics. The specific requirements for each of these minors are listed below.

Minors in General Business, Accounting, Business Economics, Economic Analytics, Enterprise Resource Planning, Enterprise Systems, Finance, Information Systems, International Business, Management, Marketing, Retail and Supply Chain Management provide broad exposure to specific business disciplines and have additional requirements including completion of 21 required hours of study (including equivalencies) with at least 50 percent of the courses applied toward the minor taken in residence. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

Non-business, degree-seeking students working toward these minors should note the following:

1. Students who elect to obtain a business minor must provide written notice of their intent to the dean's office of the college in which they are receiving a degree. This notice and all requirements for the business minor must be completed prior to the awarding of the student's undergraduate degree.
2. Business minor students must complete all 1000- and 2000-level courses required for the business minor and be a junior- or seniorlevel student to enroll in 3000- or 4000-level business courses.
3. All specific course prerequisites must be met. Although business minor students are not required to satisfy the entire pre-business core,
they must complete the required courses and any other prerequisite course specified prior to enrolling in a 3000/4000-level course.
4. Business minor students may complete multiple minors with the exception of General Business and an additional area of business study. Students may not use more than three hours of minor courses toward additional minor requirements.
5. ECON 2143 will substitute for ECON 2013/ECON 2023 for prerequisite purposes. In addition, students who take both ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) and ECON 2023 Principles of Microeconomics (ACTS Equivalency $=$ ECON 2203) will satisfy the economics requirements of the minor.
6. Business minor students are ineligible to take SEVI 3013 Strategic Management.
7. ECON 3053 and BUSI 3043 may not count toward the junior- or senior-level course requirements for the minor.
8. All equivalencies must be approved by the assistant dean for undergraduate programs.
9. Students may choose to pursue Concentration 1-General Business online, as long as they adhere to the requirements for online programs (p. ).

All upper level minor requirements must be taken in residence. All students seeking a business minor in the second block are required to complete the Walton College computer competency requirement ISYS 1123 and the following courses:

| ECON 2143 | Basic Economics: Theory and Practice | 3 |
| :--- | :--- | :--- |
| ACCT 2013 | Accounting Principles | 3 |
| BUSI 1033 | Data Analysis and Interpretation | 3 |
| Total Hours |  | 9 |

In addition, students must select and complete one of the following disciplines:

## General Business Minor

Requirements for General Business Minor
Select four of the following (at least 6 hours must be at the 3000 or
4000 level):
ACCT 2023 Accounting Principles II
or SEVI 205: Business Foundations
BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003)
ISYS 2103 Business Information Systems
SCMT 2103 Integrated Supply Chain Management
MGMT 2103 Managing People and Organizations
FINN 2043 Principles of Finance
MKTG 3433 Introduction to Marketing
Plus any other 3000- to 4000-level Walton College course (except
BUSI 3043)
Total Hours

## Accounting Minor

Requirements for Accounting Minor
ACCT 2023 Accounting Principles II
ACCT 3723 Intermediate Accounting I


## Business Economics Minor

Requirements for Business Economics Minor
ECON 3033 Microeconomic Theory 3

ECON 3133 Macroeconomic Theory 3
Plus an additional 6 hours of 3000- to 4000-level business economics 6 courses
Total Hours

## Economic Analytics Minor

Requirements for Economic Analytics Minor

| ECON 3033 | Microeconomic Theory | 3 |
| :--- | :--- | ---: |
| ECON 4743 | Introduction to Econometrics | 3 |
| ECON 4753 | Forecasting | 3 |
| ECON 4763 | Economic Analytics | 3 |
| Total Hours |  | $\mathbf{1 2}$ |

## Enterprise Resource Planning Minor <br> Requirements for Enterprise Resource Planning Minor

ACCT 2023 Accounting Principles II 3
FINN 2043 Principles of Finance 3
ISYS 4213 ERP Fundamentals 3
SCMT 2103 Integrated Supply Chain Management 3
Select an additional 3 hours from the following: 3
ISYS 4223 ERP Configuration and Implementation
ISYS 4233 Seminar in ERP Development
ISYS 4293 Business Intelligence
Total Hours

## Enterprise Systems Minor

Requirements for Enterprise Systems Minor
ISYS 4453 Introduction to Blockchain Applications 3
ISYS 4463 Blockchain Enterprise Systems Development 3
Plus an additional 6 hours from the following: 6
ISYS 4213 ERP Fundamentals
ISYS 4223 ERP Configuration and Implementation
ISYS 4233 Seminar in ERP Development
ISYS $4293 \quad$ Business Intelligence
Total Hours

## Finance Minor

Requirements for Finance Minor

| FINN $2043 \quad$ Principles of Finance |
| :--- |
| Plus an additional 9 hours of 3000 - to 4000 -le |
| Total Hours |
| Information Systems Minor |

## Requirements for Information Systems Minor

| ISYS 3293 | Systems Analysis and Design | 3 |
| :--- | :--- | ---: |
| ISYS 3393 | Business Application Development Fundamentals | 3 |
| Plus an additional | 3 hours from the following: | 3 |
| ISYS 4213 | ERP Fundamentals |  |
| ISYS 4223 | ERP Configuration and Implementation | 3 |
| One 3-hour 4000-level ISYS course | $\mathbf{1 2}$ |  |
| Total Hours |  |  |

## Innovation and Entrepreneurship Minor

Requirements for Strategic, Entrepreneurship and Venture Innovation Major:

| Required Courses (6 hours) |  |  |
| :---: | :---: | :---: |
| SEVI 2033 | Business Foundations for Innovators and Entrepreneurs ${ }^{1}$ | 3 |
| SEVI 2013 | Introduction to Venture and Value Creation () |  |
| Choose one of the following: |  | 3 |
| SEVI 3233 | Corporate Innovation (Choose one of the following Thematic Core courses (3 hours)) |  |
| SEVI 3673 | Social Entrepreneurship |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| SEVI 4433 | Small Enterprise Management |  |
| Choose three courses from the following: |  | 9 |
| SEVI 3233 | Corporate Innovation ${ }^{2}$ |  |
| SEVI 3673 | Social Entrepreneurship ${ }^{2}$ |  |
| SEVI 3933 | Entrepreneurship and New Venture Development |  |
| SEVI 4433 | Small Enterprise Management ${ }^{2}$ |  |
| SEVI 4543 | Students Acquiring Knowledge Through Enterprise (S.A.K.E.) Product Innovation Lab |  |
| SEVI 4583 | International Management |  |
| SEVI 4993 | Entrepreneurship Practicum |  |

## Total Hours

1 Students may not receive credit for both SEVI 2053 and SEVI 2033. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors.
2 Students may choose if not otherwise used towards the Thematic Core course option.

The minor requires completion of 18 hours of study (including equivalencies) with at least 50 percent of the courses applied toward the minor taken in residence. Each student must have a 2.00 cumulative grade-point-average in the courses offered for the minor.

## International Business Minor

Requirements for International Business Minor
ECON 4633 International Trade 3 dendergraduate degree. All specific course requirements must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level requirements must be taken in residence.

## Management Minor <br> Requirements for Management Minor

MGMT 4243 Ethics and Corporate Responsibility 3
Plus an additional 9 hours of 3000/4000 level management courses 9
(may include MGMT 2103 or MGMT 3563)
Total Hours

## Marketing Minor

Requirements for Marketing Minor

| MKTG 3433 | Introduction to Marketing | 3 |
| :--- | :--- | ---: |
| Select an additional 9 hours from the following: | 9 |  |
| MKTG 3553 | Consumer Behavior |  |
| MKTG 3633 | Marketing Research |  |
| MKTG 4233 | Integrated Marketing Communications |  |
| MKTG 4343 | Selling and Sales Management |  |
| MKTG 4433 | Retail Strategy |  |
| MKTG 4443 | Retail Buying and Merchandise |  |
| MKTG 4453 | New Product Development |  |
| MKTG 4633 | Global Marketing | $\mathbf{1 2}$ |
| SCMT 3613 | SOURCE: Procurement and Supply Management |  |
| Total Hours |  |  |
|  |  | 3 |
| Retail Minor |  | 3 |
| Requirements for Retail Minor | 3 |  |
| MKTG 3433 | Introduction to Marketing | 3 |
| MKTG 4433 | Retail Strategy | $\mathbf{3}$ |
| MKTG 3553 | Consumer Behavior |  |
| MKTG 4443 | Retail Buying and Merchandise |  |
| Total Hours |  |  |

## Supply Chain Management Minor

Requirements for Supply Chain Management Minor
SCMT 2103 Integrated Supply Chain Management 3
Plus an additional 12 hours of approved of 3000/4000 level SCMT courses

## Total Hours

## College of Education and Health Professions

## Mission and Objectives

The mission of the College of Education and Health Professions is to enhance the quality of life of the citizens of Arkansas, the nation, and the world through the development of scholar-practitioners in education, health, and human services.

The goals of the College of Education and Health Professions are to:

- Strengthen the academic quality and reputation of the college by developing and enhancing programs of excellence in teaching, research, and service.
- Improve the quality and diversity of our students, faculty, and staff.
- Generate increased private and public support for the college's research, academic, and service initiatives.


## Facilities and Resources <br> The Sylvia Hack Boyer Center for Student Services

The office provides advising and student support services to undergraduate students in the College of Education and Health Professions from matriculation to graduation.

## The Office for Teacher Education

The office provides field placement, teacher licensure, and student assessment. The office also provides support to the academic departments as they pursue state and national accreditation.

## Organization

For administrative purposes, the undergraduate programs of the college are organized under five academic units, with majors shown after each unit:

1. Communication Disorders and Occupational Therapy
a. Communication Sciences and Disorders
b. Occupational Therapy
2. Counseling, Leadership and Research Methods
a. Human Resource Development
3. Curriculum and Instruction
a. Career and Technical Education
b. Childhood Education
c. Drama Education
d. Educational Studies
e. Elementary Education
f. English Education
g. French Education
h. German Education
i. Social Studies Education
j. Spanish Education
k. Special Education
4. Eleanor Mann School of Nursing a. Nursing
5. Health, Human Performance and Recreation
a. Exercise Science
b. Physical Education
c. Public Health
d. Recreation and Sport Management
e. Teaching K-12 Physical Education and Health

## Facilities

The Graduate Education Building, Peabody Hall, Epley Center for Health Professions, and the Health, Physical Education and Recreation Building serve as the nucleus of the College of Education and Health Profession's activities.

The Graduate Education Building houses the Department of Rehabilitation, Human Resources and Communication Disorders, an auditorium, several conference and seminar rooms, classrooms, and offices for individual professors, along with administrative and service units such as the Dean's office, OASIS, and computer laboratory.

Peabody Hall houses the Department of Curriculum and Instruction, classrooms and offices for individual professors, along with the Office for Teacher Education for the College and University.

The Health, Physical Education and Recreation (HPER) Building houses the majority of faculty offices and classrooms for Athletic Training, Public Health, Kinesiology, Recreation and Sport Management, the Office for Studies on Aging, and the Exercise Science Research Center.

The Communication Sciences and Disorders program and the Speech and Hearing Clinic are housed in Epley Center for Health Professions.

The clinic contains faculty offices, a classroom, a graduate seminar room, teaching and research laboratories, and space and facilities for the provision of services to the speech, language, and hearing impaired. University services are provided through the clinic to university students and the community.

The Eleanor Mann School of Nursing is also housed in Epley Center for Health Professions. The nursing program facilities include administrative offices, faculty offices, two classrooms, simulation laboratories, a conference room, and a computer classroom. The school has affiliation agreements for clinical practice with area health care agencies.

The West Avenue Annex building houses research and service units: the Center for Mathematics and Science Education (CMASE), the Center for Children and Youth, the Arkansas Leadership Academy (ALA) and the Office for Innovation in Education (OIE). Established in 1991, the Arkansas Leadership Academy is a nationally recognized statewide partnership of 13 universities, 9 professional associations, 15 educational cooperatives, the Arkansas Departments of Education, Higher Education, and Workforce Education, the Arkansas Educational Television Network, Tyson Foods Inc., Wal-Mart Stores Inc., and the Walton Family Foundation. The Center for Mathematics and Science Education provides quality resources to private and public educators. The center also serves as the Arkansas NASA Educator Resource Center, disseminating educational materials provided by NASA. The Office for Innovation in Education is funded by the Arkansas Department of Education to develop and test new approaches to deliver and assess K-12 education innovations.

Established in 1974, the Center for the Utilization of Rehabilitation Resources for Education, Networking, Training and Service (CURRENTS) provides customized training and consulting for organizations ranging from large state agencies to small not-for-profits and is nationally recognized for the high level of commitment and responsiveness to their customers and their efforts to expand, improve, and strengthen services to people with disabilities. The center is located at the Arkansas School for Mathematics, Sciences and the Arts, Hot Springs, Arkansas.

## Academic Journals

The college is host to the Journal of Research on the College President, edited by G. David Gearhart, a professor of higher education and Chancellor Emeritus, and the Journal of School Choice, edited by Robert Maranto, 21st Century Endowed Chair in Leadership in the Department of Education Reform.

## Degrees Offered

The college offers curricula leading to four degrees - the Bachelor of Science in Education degree (B.S.E.), the Bachelor of Science (B.S.), the Bachelor of Arts in Teaching (B.A.T.), and the Bachelor of Science in Nursing (B.S.N.). Some of these degree programs have concentrations and specialties that are described within their sections.

## College Admission Requirements

All entering students (including freshmen, international, and transfer) admitted to the University of Arkansas, Fayetteville, are eligible for admission to the college. Some undergraduate programs require additional admission criteria to complete.

## Transfer of Credit

The policies controlling the granting of credit for course work taken at other institutions apply as follows:

1. Courses completed at the lower-division (freshman or sophomore) level at another institution may not count as equivalents of upperdivision (junior or senior) level courses offered in the college unless student requests program modification with proper petition approvals.
2. Students should be prepared to submit official course descriptions of transfer course work if there is any question as to whether the college will grant degree credit for such work.

## Exploring Majors

Students enrolled in the College of Education and Health Professions are encouraged to declare a major as soon as possible. For assistance contact the Sylvia Hack Boyer Center for Student Services, 3rd floor Graduate Education Building, 479-575-4203.

## College Scholarships

Thanks to the generosity of donors, the College of Education and Health Professions offers several scholarship opportunities. These gifts allow the college to support the university's mission of recruiting and retaining highachieving students who enrich and diversify the academic environment. Scholarships are available for both graduate and undergraduate students. Please visit the college's scholarship webpage (https://coehp.uark.edu/ students/scholarships.php) for more information.

## Student Organizations

There are many general-interest societies and organizations on the campus, and nearly every department of the university maintains an honor society through which high scholarship is rewarded. Of special interest to students in the college are the following:

- Eta Sigma Gamma - honor society for Public Health
- Kappa Delta Pi — honor society for education
- Phi Delta Kappa - honor fraternity for graduate students
- Kinesiology Club - for kinesiology majors
- Recreation and Sport Management Majors Club - for recreation and sport management students
- Razorback Athletic Training Association (RATA) — for undergraduate kinesiology majors with a concentration in exercise science - preathletic training, entry level graduate athletic training students and graduate assistant athletic trainers in women's and men's athletics
- National Student Speech-Language-Hearing Association - for communication sciences and disorders majors
- Arkansas Nursing Students Association, National Student Nurse Association, and the Pi Theta chapter of Sigma Theta Tau International Honor Society of Nursing — for nursing majors


## College Academic Regulations Admission Process for Initial Teacher Licensure <br> Stage I: Enrollment

Enroll in an undergraduate degree program leading to a potential teacher licensure field. Potential fields include the following:

- Agricultural Education - B.S.A.
- Art Education - B.F.A.
- Career \& Technical Education (Business Education) - B.S. E. Licensure Program
- Career \& Technical Education (Family \& Consumer Science) - B.S. E. Licensure Program
- Career \& Technical Education(Technology Education) - B.S. E. Licensure Program
- Childhood Education - B.S.E.
- Elementary Education - B.S.E. Licensure Program
- Human Environmental Sciences Education - B.S.H.E.S.
- Kinesiology K-12 - B.S. Licensure Program
- Music Education - B.M.
- Secondary Education - B.A., B.S. B.A.T.
- Special Education - B.S.E. Licensure Program
- Speech-Language Pathology - B.S.


## Stage II: Admission to Teacher Education

Complete the Admission to Teacher Education application on the Office of Field Placement and Licensure website (http://teachereducation.uark.edu/admissions/) for details. Satisfactory completion of this form does not guarantee admission to the student teaching semester or the Masters of Arts in Teaching (M.A.T.) degree program or other teacher education programs.

## Stage III: Program Admission

The following minimum criteria are necessary to be eligible for consideration for admission to a teacher education program:

1. Meet all requirements in stages I and II.
2. Consult with faculty adviser for additional requirements set by the chosen program.

## Initial Licensure

Students who have completed the stages listed above must obtain a licensure packet from the Teacher Certification Officer, 338 Graduate Education Building, prior to entering internship/student teaching. A mandatory meeting is held each semester before starting either an internship or a student teaching experience.

Students should always consult the Teacher Certification Officer or adviser regarding licensure requirement changes. Students will not be licensed to teach in Arkansas until they have met all requirements for licensure as set forth by the Arkansas Department of Education.

## College Honor Roll

At the close of each semester, the college recognizes students who qualify for the Honor Roll. Students must carry a minimum of 12 semester hours to be eligible for the Honor Roll and obtain a minimum term GPA of 3.75 .

## Graduation with Distinction

Graduation with Distinction will be conferred to College of Education and Health Professions students (who are not participating in the college "Honors Program") based upon their University of Arkansas cumulative grade-point average at the time of graduation. To earn this distinction, a student must have completed at least one-half of the course work required for his or her degree at the University of Arkansas, Fayetteville. The graduation with distinction designation will be assigned as follows:

1. For highest distinction, the student must have a minimum cumulative grade point average of 3.95 .
2. For high distinction, the student must have a minimum cumulative grade point average of 3.80 .

## Degree Requirements

## Minimum Requirements for the B.S.E. or B.S. or B.S.N. or B.A.T. Degree

The candidates for a baccalaureate degree from the college must meet university requirements, which specify at least 120 semester hours of work with a grade-point average of at least 2.00 on all work attempted in the university. Students exempting any course must still meet the 120-hour graduation requirement and should consult their adviser for specific program requirements. Exemption of courses does not result in credit earned. The students must comply with the prescriptions and restrictions listed below and under General Studies and must complete the requirements in one or more of the approved degree programs.

Students must also meet all other university requirements for graduation, including the University Core requirements (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/). Students are required to have a pre-graduation check at least one semester prior to the graduation term. Students who complete the pre-graduation check and meet all university and College of Education and Health Professions requirements may apply for graduation under the guidelines detailed on the Graduation Requirements page (p. 86). All course work, university requirements, and college requirements must be completed by the deadline for the term in which applied. Students not graduating in spring, but wishing to participate in the spring commencement ceremony, must apply for graduation by the established priority deadline for the spring term. For clarification, please contact the Sylvia Hack Boyer Center for Student Services, 350 Graduate Education Building, at 479-575-4203.

## Graduate Studies

The Graduate School, in cooperation with the college, offers advanced work in education and health professions leading to the degrees of Master of Arts in Teaching, Master of Science, Master of Education, Educational Specialist, Doctor of Education, and Doctor of Philosophy.

The graduate programs include:

- Adult and Lifelong Learning
- Athletic Training
- Childhood Education
- Communication Sciences and Disorders
- Community Health Promotion
- Counselor Education
- Curriculum and Instruction
- Educational Leadership
- Educational Statistics and Research Methods
- Educational Technology
- Education Policy
- Elementary Education
- Higher Education
- Human Resource and Workforce Development
- Kinesiology
- Middle-Level Education
- Nursing
- Physical Education
- Recreation and Sport Management
- Rehabilitation
- Secondary Education
- Special Education

The Graduate School awards the graduate degrees. Students who are interested in registering for graduate courses or in becoming candidates for these degrees should consult the dean of the Graduate School and the Graduate School Catalog.

Students who plan to study for an advanced degree in the subjectmatter field should consult with the head of the department concerning course requirements to be eligible to begin graduate study. Specialization requirements for a B.S.E. degree in the College of Education and Health Professions may not be sufficient in every field to gain admission for graduate study without deficiencies.

## Accreditations

The University of Arkansas holds membership in and is accredited by the North Central Association of Colleges and Secondary Schools. The college is also a member of the American Association of Colleges for Teacher Education.

The graduate program in communication disorders is accredited by the Council on Academic Accreditation of the American Speech-LanguageHearing Association, but the program is currently on probation. Find out more in the Graduate Catalog (http://catalog.uark.edu/graduatecatalog/ programsofstudy/communicationdisorderscdis/).

The counselor education graduate program is nationally accredited through the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

The Bachelor of Science in Nursing (B.S.N.) degree program is accredited by the Commission on Collegiate Nursing Education. It is also approved by the Arkansas State Board of Nursing.

The M.S. degree program in Rehabilitation Counseling is accredited by the Council on Rehabilitation Education (CORE). Graduates of the accredited program are eligible to sit for the Certified Rehabilitation Counselor (CRC) examination.

The B.S. degree program in Public Health is accredited by the Council on Education for Public Health (CEPH).

The teacher education program of the College of Education and Health Professions is accredited by the Council for the Accreditation of Educator Preparation (CAEP). This accreditation covers the initial teacher preparation programs and/or advanced educator preparation programs. Because of the accreditation by the Council for the Accreditation of Educator Preparation, students who complete the curricula as outlined in this catalog are eligible to be recommended for licensure in states that agree to certify graduates who are recommended by the College of Education and Health Professions as having fulfilled its requirements. Students who complete the approved program of study leading to initial licensure are eligible to receive licenses to teach at the grade level or in the fields for which they have made preparation upon application and presentation of acceptable scores on the appropriate Praxis exams. However, students must follow licensure guidelines set forth by the Arkansas Department of Education to be licensed to teach.

Office of the Dean of the College
324 Graduate Education Building, 479-575-3208

Interim Associate Dean of Academic and Student Affairs Matthew S. Ganio

Assistant Dean for Administration and Diversity
Lewatis D. McNeal
Associate Dean for Research and Innovation
Stephen Dittmore
Director of On-Campus Advising and Initiatives
Elizabeth McKinley
Director of Student Services and Online Advising Denise Bignar

## The Sylvia Hack Boyer Center for Student Services

Student Success Center suite 114/3rd floor Graduate Education Building, 479-575-4203

## Teacher Education/Licensure

109 Peabody Hall, 479-575-6740

## Honors Program

Student Success Center suite 114, 479-575-4538

## Speech and Hearing Clinic

606 North Razorback Road, 479-575-4509
World Wide Web: coehp.uark.edu (http://coehp.uark.edu/)
Below the majors, concentrations and minors are listed the requirements for teaching licensure.

## Majors, Concentrations and Minors Majors and Concentrations

- Career and Technical Education (p. 704)
- Business Education
- Family and Consumer Sciences Education
- Technology Education
- Childhood Education (p. 711)
- Communication Sciences and Disorders (p. 727)
- Drama Education (p. 741)
- Educational Studies (p. 745)
- Elementary Education (p. 765)
- English Education (p. 771)
- Exercise Science (p. 777)
- French Education (p. 780)
- German Education (p. 786)
- Human Resource Development (p. 792)
- Nursi (p. 750)ng (p. 750)
- Public Health (p. 795)
- Recreation and Sport Management (p. 799)
- Recreation Administration
- Sports Administration
- Social Studies Education (p. 806)
- Spanish Education (p. 812)
- Special Education (p. 818)
- Teaching K-12 Physical Education and Health (p. 822)


## Minors

- Educational Studies (p. 748)
- Human Resource Development (p. 794)
- Outdoor Leadership (p. 803)
- STEM Education (p. 822)

Undergraduate students in the college may declare any official academic minor available at the University of Arkansas. Students must notify the Sylvia Hack Boyer Center for Student Services of their intent to pursue a minor. The college, with the assistance of the college offering the minor, will certify that the requirements of the minor have been satisfied. The academic minor will be designated on the student's official transcript. Requirements for the minor are listed in the catalog under the department offering the minor.

## Certificates

- STEM Education (p. 822)


## Other Programs

## Curricula Offered for Initial Licensure

Nursing Licensure: Completing the minimum requirements for the degree of Bachelor of Science in Nursing will satisfy the academic requirements for licensure as a Registered Professional Nurse. Students must complete all of the requirements set forth by the Arkansas State Board of Nursing to be licensed as a registered nurse. See adviser for details.

## Teacher Licensure and Licensure of other School Personnel

The University of Arkansas offers approved undergraduate programs of study for initial licensure in childhood education, career and technical education (business education, family and consumer science, technology education), kinesiology (P-12 physical education), school counseling, special education, speech-language pathology, music and art education, and agriculture education, initial teacher licensure programs in secondary education (English/language arts, drama/speech, social studies, science, mathematics, world language), and childhood education in the Masters of Arts In Teaching (M.A.T.) degree program. The M.A.T. degree program is offered in consecutive summer, fall, and spring semesters with initial enrollment in the summer semester. The M.A.T. is a graduate degree program and requires a minimum of 33 semester hours. The M.A.T. degree program has two areas of emphasis: childhood education and secondary education in drama/speech, English, foreign language, mathematics, science and social studies. Consult the Admissions Process for Initial Teacher Licensure Stages I-III and the Graduate School Catalog for admission and graduation requirements for the M.A.T. degree program. The approved program of study for initial licensure in speechlanguage pathology is the Master of Science degree in Communication Disorders. Procedures for obtaining licensure parallel those used with M.A.T. graduates. There are some non-M.A.T. licensure programs. See the appropriate sections of this catalog for that information. For bachelor's degree licensure requirements in career and technical education, music and art education, and some areas of agriculture education, see appropriate sections of this catalog.

The State Board of Education issues the regulations governing the licensure of teachers in Arkansas. The Board specifies minimum cutoff scores for all Praxis exams. Each application for a teacher's license
requires completion of an approved program of study, completion of a state and national background check, and documentation of passing the Praxis exams. Those wishing to add an additional license or endorsement, should contact the Teacher Certification Officer in 338 Graduate Education Building for the approved programs of study or go to the menu "Additional Licensure Plan (http://coehp.uark.edu/ licensure.html)" on the college's website.

## University Teacher Education Board

The University Teacher Education Board is composed of the associate deans; faculty representatives from the College of Education and Health Professions; the Fulbright College of Arts and Sciences; the Dale Bumpers College of Agricultural, Food and Life Sciences; public school teachers and/or administrators, and students. The functions are to

- Govern the teacher education and licensure program.
- Establish general policies and procedures necessary to maintain quality in degree programs.
- Oversee the general coordination of the initial licensure process
- Approve new courses and course changes in individual licensure program.

The Board serves as a liaison for the faculties involved and emphasizes the importance of teacher education as one of the primary responsibilities of the university.

## Honors Program

The College of Education and Health Professions (COEHP) Honors Program is designed for students who value and want to be challenged by an exceptional educational experience and intensively focus their studies. The program creates and supports an academic environment of intellectual adventure and provides a carefully integrated and demanding curriculum. The rewards are immense: high academic achievement; involvement in undergraduate research; academic distinction of summa cum laude, magna cum laude, or cum laude and confirmation of an honors degree on the student's transcript; and recognition at commencement.

The mission of the Honors Program is to: establish and maintain an honors community of learning that is intellectually rigorous, personally and culturally enriching, and fosters learning and discovery through independent and collaborative inquiry; allow students to be creative, inquisitive and innovative; support student research and experiential learning; support student academic ventures through mentoring, travel funding, and research support; provide the opportunity to present work at undergraduate research symposia; challenge students to connect the classroom with the larger world by expanding social and cultural experiences and promoting leadership, and prepare students for admission to and success within graduate and professional schools in the United States and abroad.

Benefits of participating in the Honors Program include: small class sizes, close contact with talented faculty, opportunity for independent study that counts toward the requirements of the Honors Program, special academic counseling and priority registration, increased confidence and skill in writing, honors housing, Latin Honors designation on transcript, enhanced career opportunities, and increased advantages for graduate or professional school applicants.

Admission to the University of Arkansas Honors College assures automatic admission to the COEHP Honors Program for incoming freshmen. The student can apply for admission electronically through
the Honors College website (https://honorscollege.uark.edu/apply/). The following are admission criteria for students seeking admission to the COEHP Honors Program:

## Entering Freshmen

- Please visit the Honors College section (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/honorscollege/) of the catalog to view the admission criteria for new freshmen.


## Students Applying as Continuing or Transfer

(within and outside the University of Arkansas)

- 3.5 or greater cumulative GPA
- Applications from students who are currently on probation in another UA college's Honors Program will be evaluated following the conclusion of their probationary semester.
- Applications will not be accepted from students who are within three full semesters of anticipated graduation date.


## Expectations

At the end of each academic semester, the COEHP Honors Program will review academic records of all enrolled COEHP Honors students. A student's cumulative GPA must be 3.50 or greater to remain in good standing within the COEHP Honors Program; if the cumulative GPA falls between 3.00 and 3.49 , the student will be placed on probation for one academic semester. At that time, the student is strongly encouraged to remove any honors courses from their schedule. At the end of the probationary period if the student's cumulative GPA is 3.50 or greater, they will be reinstated in good standing within the COEHP Honors Program; if the cumulative GPA is less than 3.50 the student will be removed from the COEHP Honors Program and the student must remove any Honors courses from their schedule. If the student's cumulative GPA falls below 3.00 at any point, the student will be immediately removed from the COEHP Honors Program and the student must remove any Honors courses from their schedule.

All COEHP honors students are held to the highest standard with regard to academic achievement and academic integrity. Students violating the Academic Integrity Policy that receive a sanction of 1.0 or greater at the University of Arkansas will be permanently removed from the COEHP Honors Program without the ability to reapply. The student may appeal the decision to the University's Academic Integrity Board; if the sanction is overturned and removed, the student will be reinstated into the COEHP Honors Program.

## Honors Degrees

The College of Education and Health Professions is dedicated to providing programs designed to meet the Honors student's needs. To achieve this aim, the college faculty has developed the COEHP Honors Program - an honors program for students of superior academic talent.
Students successfully completing the COEHP Honors Program will receive the following academic accolades:

- GPA of 3.9 or greater - summa cum laude
- GPA of 3.7 or greater - magna cum laude
- GPA of 3.5 or greater - cum laude

Requirements for COEHP Honors Program: Requirements for the COEHP Honors Program include meeting all university, COEHP, and department degree requirements. Additionally, students must maintain a cumulative GPA of 3.5 , complete a minimum of 18 credit hours of honors courses, and complete and defend an honors thesis/project. Of
the 18 honors credit hours, a minimum of 10 must be completed within the student's program of study (except in situations as described in the following paragraphs), including the Honors Tutorial (3901H) and 3 hours of Honors Thesis $(498 \mathrm{VH})$, which may be split across multiple semesters. With prior approval from the student's academic adviser and the COEHP Honors Program, graduate level courses may be counted toward the 10 honors hours within the student's program of study.

Nursing students shall complete NURS 3842H in place of the Honors Tutorial (3901H). Non-nursing students who choose to complete their Honors thesis/project with a nursing faculty mentor shall also complete NURS 3842H in place of the Honors Tutorial (3901H). A nursing student who is completing their Honors thesis/project with a faculty mentor outside of their major or outside of COEHP shall complete NURS 3842H, but will still be required to complete 4 hours of thesis courses in their mentor's home department/program.

For Exercise Science students, Honors Research Methods in Exercise Science (EXSC 3723H) may be substituted for the Honors Tutorial (3901H).

For Public Health students, Honors Research Methods in Public Health (PBHL 3723H) may be substituted for the Honors Tutorial (3901H).

Students who wish to complete the Honors thesis/project with a COEHP faculty mentor outside of their major should enroll in the Honors Tutorial and Honors Thesis courses that correspond with the faculty member's department/program; these hours shall be counted toward the 10 hour requirement. Students who wish to complete the Honors thesis/project with a non-COEHP faculty mentor should accumulate a minimum of 4 hours of Honors research/independent study courses that correspond with the faculty mentor's department/program; these hours shall be counted toward the 10 hour requirement.

Honors courses must be completed in residence at the University of Arkansas, Fayetteville campus in order to satisfy the required 18 honors credits to receive the COEHP Honors distinction. Any honors credits awarded based on AP/IB results shall not be used to fulfill this requirement. Transfer students from other four-year institutions may initiate an appeal with the COEHP Honors Council if they wish to have transfer Honors credit satisfy part of the 18 hour requirement.

For more information about the COEHP Honors Program or to complete an application form, please visit coehphonors.uark.edu (https:// coehphonors.uark.edu/).

## Courses

EDHP 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
EDHP 2600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
EDHP 3600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
EDHP 3923. Education Seminar. 3 Hours.
Special topics or issues in education. (Typically offered: Irregular) May be repeated for degree credit.

## EDHP 3923H. Honors Education Seminar. 3 Hours.

Special topics or issues in education for the Honors student. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit.

## EDHP 4001. Dean's Seminar. 1 Hour

The Dean's Seminar is a seminar course that leverages the expertise of our faculty to provide students from multiple disciplines an opportunity to study topics at the intersection of education and health. Each offering will focus on a different complex societal challenge and help students develop high-leverage interventions to address the issue through the lens of education and health. Topics vary by semester.
(Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.
EDHP 4001H. Honors Dean's Seminar. 1 Hour.
The Dean's Seminar is a seminar course that leverages the expertise of our faculty to provide students from multiple disciplines an opportunity to study topics at the intersection of education and health. Each offering will focus on a different complex societal challenge and help students develop high-leverage interventions to address the issue through the lens of education and health. Topics vary by semester.
Prerequisite: Honors Standing. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.
This course is equivalent to EDHP 4001.
EDHP 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

## Career and Technical Education (CATE)

Betsy Orr
Program Coordinator
315 Peabody Hall
479-575-6430
b (cswear@uark.edu)orr@uark.edu (borr@uark.edu)
The program in Career and Technical Education offers a degree program leading to a Bachelor of Science in Education for the preparation of teachers, supervisors, and administrators in career and technical education. Students must choose one of three concentrations, each of which leads to teacher licensure:

- The concentration in Business Education offers on-campus students the chance to become effective educators and communicators as they learn to teach the latest computer technologies and subject matter focused on the core areas of business. The concentration provides rigorous and intellectually stimulating programs that offer students a broad variety of professional careers in business education and technology.
- The concentration in Family and Consumer Sciences Education offers on-campus students the ability to learn critical and creative thinking skills through a variety of courses including parenting and human development; family studies; nutrition and foods; textiles and apparel production; and housing and design. The diverse curriculum offers studies that mirror real life, enabling students in this concentration to develop both personal and professional skills.
- The concentration in Technology Education prepares students to teach technology, pre-engineering, or other technical subject matter at the high school, middle-level, or community college. Additionally, the program prepares students to enter mid-level technical/management careers in business and industry.

Admission to the B.S.E. in Career and Technical Education is competitive and admission will be determined by the Career and Education faculty based on the items listed with the concentration requirements. Students seeking admission to the Career and Technical Education program at the University of Arkansas must be aware of the deadlines and admissions
policies. These deadlines and limitations are designed to ensure that all students have a high quality experience.

The University of Arkansas program in career and technical education has been approved by the State Board for Career and Technical Education for the preparation of teachers, supervisors, and administrators in career and technical education.

## Requirements for B.S.E. in Career and Technical Education with Business Education Concentration

## Stage I: Pre-CATE requirements (PCATE)

Complete 41 hours of program pre-requisites for the Career and Technical Education B.S.E.:

1. Obtain a GPA of 2.7 or better on UA coursework.
2. Obtain a grade of " C " or better in completed technical courses (see "III. Technical Requirements" in desired CATE BS concentration).
3. Obtain a grade of "C" or better in CIED 1013: Introduction to Education and CATE 3103: Introduction to Professionalism. CATE 3103 should be taken during the fall semester of the sophomore year.

The Department of Curriculum and Instruction offers programs that prepare candidates for initial teacher licensure in career and technical education.

The admission to the career and technical education program consists of a three-stage process; simply meeting the minimum admission requirements will not guarantee admission. Admission will be determined by the CATE faculty based on the items listed in Stage II.

## Stage II: Admission to the Career and Technical Education Program B.S.E.

The application process, which occurs during CATE 3103: Introduction to Professionalism includes:

1. Submission of the application to teacher education through the university-wide Teacher Education Office (see the Teacher Education Application Fee). See website (https://teacher-education.uark.edu/) for details.
2. Submission of the CATE application located here (https://teachereducation.uark.edu/).
3. Submission of transcripts for all coursework.
4. Oral interview with CATE faculty.
5. Current background check.

## Stage III: Requirements for Program Continuation and Student Teaching/Internship (CATE 406X)

1. Maintain a cumulative GPA of 2.7 or better.
2. Complete or present proof of registration for the Praxis II Content exam required by the Arkansas Department of Education Licensure area.
3. Maintain a current background check.
4. All "II. Professional Education" courses must have a grade of "C" or better. No teaching methods courses may be taken as self-paced (correspondence).

Requirements for teacher licensure vary from state to state and may differ in teacher preparation programs. Please note that Arkansas requires all applicants to successfully complete a criminal background check. Go to the Arkansas Teacher Licensure requirements (http://arkansased.org/ teachers/licensureinitial.html).

All CATE program courses must have a grade of "C" or better. No teaching methods courses may be taken as self-paced (correspondence) courses.

## I. Pre-CATE requirements

Required State Minimum Core for Career \& Technical Education

$$
\text { PSYC } 2003 \text { General Psychology (ACTS Equivalency = PSYC }
$$ 1103)

Recommended for Business Education concentration
ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103)
ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)
MATH 2053 Finite Mathematics
CIED 1013 Introduction to Education
CATE 3103 Introduction to Professionalism
II. Professional Education ${ }^{2,3}$

CIED 3023 Survey of Exceptionalities
or CIED 4023 eaching in Inclusive Secondary Settings
CIED 3033 Classroom Learning Theory
CATE 4013 Teaching Strategies
CATE 4023 Classroom Management
CATE 4033 Assessment / Program Evaluation
CATE 4052 Seminar Teaching Internship
CATE 406X Teaching Internship ${ }^{4}$
III. Technical Requirements 21

ACCT 2013 Accounting Principles
BLAW 2013 The Legal Environment of Business (ACTS Equivalency = BLAW 2003)
ACCT 2023 Accounting Principles II
MKTG 3433 Introduction to Marketing
BUSI 1033 Data Analysis and Interpretation
CATE 4803 Word Processing and Multimedia (Word Processing)
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)

## IV. Electives

29
Recommended courses for Business Education - 3 hours must be Upper Level on-campus enrollment

ISYS 1120
or ISYS 112:Business Application Knowledge - Computer Competency
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (if required, see adviser)

CIED 1003 Introduction to Technology in Education
CATE 4073 Introduction to Teaching Programming in the Secondary Schools

## CATE 5463

Total Hours
1 See the State Minimum Core (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/universitycore/) page.
2 All "II. Professional Education" courses must have grade " C " or better to award degree credit.
${ }^{3}$ Admission to the Career and Technical Education B.S. major required to take Professional Education courses.
4 See "Stage III: Requirements for Program Continuation and Student Teaching/Internship" in parent major (CATE BS).

## Career and Technical Education B.S.E. with Business Education Concentration Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan in Career and Technical Education (teaching option) with a concentration in Business Education should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) <br> MATH 2053 Finite Mathematics (Satisfies General | 3 |  |
| Education Outcome 2.1) | 3 |  |

ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2$)^{1}$
U.S. History or Government State Minimum Core
(Satisfies General Education Outcome 4.2) ${ }^{1}$
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3) ${ }^{1}$
ECON 2013 Principles of Macroeconomics (ACTS
Equivalency = ECON 2103) (Satisfies General Education Outcome 3.3)
Year Total:
15

Second Year | Units |
| ---: |
| Fall |

ECON 2023 Principles of Microeconomics (ACTS 3
Equivalency = ECON 2203) (Satisfies General Education Outcome 3.3)
BLAW 2013 The Legal Environment of Business
(ACTS Equivalency = BLAW 2003)
Science with Lab State Minimum Core (Satisfies 4

General Education Outcome 3.4) ${ }^{1}$

| Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$ | 3 |  | Requirements for B.S.E. in Career and Technical Education with Family and |
| :---: | :---: | :---: | :---: |
| CATE 3103 Introduction to Professionalism (Satisfies General Education Outcome 4.1) | 3 |  | Consumer Sciences Education Concentration |
| ACCT 2013 Accounting Principles | 3 |  | Stage I: Pre-CATE requirements (PCATE) |
| BUSI 1033 Data Analysis and Interpretation |  | 3 | Complete 41 hours of program pre-requisites for the Career and |
| Electives | 9-10 |  | Technical Education B.S.E.: |
| Year Total: | 16 | 16 | 1. Obtain a GPA of 2.7 or better on UA coursework. |
| Third Year | Fall | Units Spring | 2. Obtain a grade of " C " or better in completed technical courses (see "III. Technical Requirements" in desired CATE BS concentration). |
| ACCT 2023 Accounting Principles II | 3 |  | 3. Obtain a grade of "C" or better in CIED 1013: Introduction to Education and CATE 3103: Introduction to Professionalism. CATE 3103 should be taken during the fall semester of the sophomore year. |
| CIED 3023 Survey of Exceptionalities or CIED 4023 Teaching in Inclusive Secondary Settings <br> CIED 3033 Classroom Learning Theory | 3 |  |  |
| Upper Level Elective | 3 |  | The Department of Curriculum and Instruction offers programs that prepare candidates for initial teacher licensure in career and technical education. |
| Science with Lab State Minimum Core (Satisfies General Education Outcome 3.4) ${ }^{1}$ | 4 |  |  |
| MKTG 3433 Introduction to Marketing |  | 3 | The admission to the career and technical education program consists of a three-stage process; simply meeting the minimum admission requirements will not guarantee admission. Admission will be determined by the CATE faculty based on the items listed in Stage II. |
| CATE 4803 Word Processing and Multimedia |  | 3 |  |
| Electives |  | 9 |  |
| Year Total: | 16 | 15 |  |
| Fourth Year | Fall | Units <br> Spring | Stage II: Admission to the Career and Technical Education Program B.S.E. |
| CATE 4013 Teaching Strategies (Satisfies General Education Outcome 1.2) | 3 |  | The application process, which occurs during CATE 3103: Introduction to Professionalism includes: |
| CATE 4023 Classroom Management | 3 |  | 1. Submission of the application to teacher education through the |
| CATE 4033 Assessment / Program Evaluation | 3 |  | university-wide Teacher Education Office (see the Teacher Education |
| Electives | 4 |  | Application Fee). See website (https://teacher-education.uark.edu/) for |
| CATE 4052 Seminar Teaching Internship |  | 2 | detail |
| CATE 406X Teaching Internship (Satisfies General Education Outcomes 1.2 and 6.1) |  | 12 | 2. Submission of the CATE application located here (https://teachereducation.uark.edu/). |
| Year Total: | 13 | 14 | 3. Submission of transcripts for all coursework. |
|  |  |  | 4. Oral interview with CATE faculty. |
| Total Units in Sequence: |  | 120 | 5. Current background check. |
| Students must complete the State Minimum Core (https://nam03.safelinks.protection.outlook.com/?u \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalo \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriff \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79 \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserv in the Catalog of Studies. The courses that meet the core also fulfill many of the university's General Ed (https://nam03.safelinks.protection.outlook.com/?u \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalo \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cag \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79 \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D although there are additional considerations to sati education learning outcomes. Students are encour their academic adviser when making course selection | ementsos\%3A\%2F |  | Stage III: Requirements for Program Continuation and Student Teaching/Internship (CATE 406X) |
|  | Fgen <br> Ouark |  | 1. Maintain a cumulative GPA of 2.7 or better. |
|  | $\begin{aligned} & \text { Ouark } \\ & \text { c4e61 } \end{aligned}$ | fa5be89 |  exam required by the Arkansas iemartment of Education Licensure |
|  |  |  | area. |
|  |  |  | 3. Maintain a current background check. |
|  |  | 2F k.edu | 4. All "II. Professional Education" courses must have a grade of " C " or better. No teaching methods courses may be taken as self-paced (correspondence). |
|  | \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a80d1\%7C0\%7C0\%7C637248086069621479\&sdata=QptR3u0pu0ZZ \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), Requirements for teacher licensure vary from state to state and may difter although there are additional considerations to satisfy the general in teacher preparation programs. Please note that Arkansas requires all education learning outcomes. Students are encouraged to consult with applicants to successfully complete a criminal background check. Go to their academic adviser when making course selections. the Arkansas Teacher Licensure requirements (http://arkansased.org/ teachers/licensureinitial.html). |  |  |

In addition to the General Studies, the following courses are required for a concentration in Family and Consumer Sciences Education.

## I. Pre-CATE requirements for Concentration in Family and

## Consumer Sciences Education

| State Minimum Core |  |
| :--- | :--- |
| PSYC 2003 | General Psychology (ACTS Equivalency <br>  <br>  <br> 1103) PSYC |

Recommended for Family and Consumer Sciences Education concentration

| MATH 1203 | $\begin{aligned} & \text { College Algebra (ACTS Equivalency }=\text { MATH } \\ & \text { 1103) } \end{aligned}$ |
| :---: | :---: |
| \& CHEM 1101LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab) |  |
| or CHEM 10 Fundamentals of Chemistry (ACTS Equivalency = \& CHEM 10CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) |  |
| HDFS 1403 | Life Span Development |
| HDFS 2413 | Family Relations |
| CIED 1013 | Introduction to Education |
| CATE 3103 | Introduction to Professionalism |
| I. Professional | Education Core ${ }^{2,3}$ |
| $\begin{aligned} & \text { CIED } 3023 \\ & \text { or CIED } 40 \end{aligned}$ | Survey of Exceptionalities <br> 2:Teaching in Inclusive Secondary Settings |
| CIED 3033 | Classroom Learning Theory |
| CATE 4013 | Teaching Strategies |
| CATE 4023 | Classroom Management |
| CATE 4033 | Assessment / Program Evaluation |
| CATE 4052 | Seminar Teaching Internship |
| CATE 406X | Teaching Internship (12 hours minimum enrollment) ${ }^{4}$ |
| III. Technical Requirements |  |
| NUTR 1213 | Fundamentals of Nutrition |
| NUTR 2113 <br> \& NUTR 211 | Principles of Foods and Principles of Foods Laboratory |
| AMPD 2053 | Introduction to Textile Science |
| HDFS 2433 | Child Development |
| HDFS 3453 | Parenting and Family Dynamics |
| CATE 3003 | Teaching Housing and Interior Design to Secondary Students |
| CATE 4803 | Word Processing and Multimedia (Teaching Apparel Production to Secondary Students) |

## IV. Electives

Recommended courses for Family and Consumer Sciences
Education - 3 hours must be Upper-Level on-campus enrollment
CIED 1003 Introduction to Technology in Education
NUTR 2203 Sports Nutrition
NUTR 4243 Community Nutrition
NUTR 4223 Life Cycle Nutrition
HDFS 2403 Infant and Toddler Development
HDFS 3423 Adolescent Development
CIED 3053 The Emerging Adolescent

| HDFS 3443 | Families in Crisis |
| :--- | :--- |
| SCWK 3233 | Contemporary Issues in Juvenile Justice |
| SCWK 4143 | Addiction and the Family |
| HDFS 2483 | Family Financial Management |

## Total Hours

1 See the State Minimum Core (p. 81) page.
2 All "II. Professional Education" courses must have grade "C" or better to award degree credit.
${ }^{3}$ Admission to the Career and Technical Education B.S. major required to take Professional Education courses.
${ }^{4}$ See "Stage III: Requirements for Program Continuation and Student Teaching/Internship" in parent major (CATE BS).

## Career and Technical Education B.S.E. with Family and Consumer Sciences Education Concentration

## Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan in Career and Technical Education with a concentration in Family and Consumer Sciences Education should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) | 3 |  |
| Select one of the following (Satisfies General Education Outcome 3.4): | 4 |  |
| CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) \& CHEM 1071L Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) |  |  |
| CHEM 1103 University Chemistry I (ACTS <br> Equivalency = CHEM 1414 Lecture) <br> \& CHEM 1101L University Chemistry I <br> Laboratory (ACTS Equivalency = CHEM 1414 <br> Lab) |  |  |
| U.S. History or Government State Minimum Core ${ }^{1}$ | 3 |  |
| HDFS 1403 Life Span Development (Satisfies General Education Outcomes 3.3, 4.1, 4.2, and 5.1) | 3 |  |
| NUTR 1213 Fundamentals of Nutrition |  | 3 |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| CATE 4803 Word Processing and Multimedia (Apparel Production) |  | 3 |
| Science State Minimum Core with Lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  | 4 |
| Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$ |  | 3 |


| Year Total: | 16 | 16 |
| :---: | :---: | :---: |
| Second Year |  | Units |
|  | Fall | Spring |
| CIED 1013 Introduction to Education | 3 |  |
| Elective | 3 |  |
| NUTR 2113 Principles of Foods | 3 |  |
| NUTR 2111L Principles of Foods Laboratory | 1 |  |
| PSYC 2003 General Psychology (ACTS | 3 |  |
| Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3) |  |  |
| Humanities or Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$ | 3 |  |
| CATE 3103 Introduction to Professionalism | 3 |  |
| HDFS 2413 Family Relations (Satisfies General Education Outcomes 3.3 4.1, and 4.2) |  | 3 |
| AMPD 2053 Introduction to Textile Science |  | 3 |
| Electives |  | 8 |
| Year Total: | 19 | 14 |
| Third Year |  | Units |
|  | Fall | Spring |
| HDFS 3453 Parenting and Family Dynamics | 3 |  |
| Elective | 9 |  |
| CIED 3033 Classroom Learning Theory | 3 |  |
| HDFS 2433 Child Development |  | 3 |
| CATE 3003 Teaching Housing and Interior Design to Secondary Students |  | 3 |
| Elective |  | 8 |
| Year Total: | 15 | 14 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| CATE 4023 Classroom Management | 3 |  |
| CATE 4013 Teaching Strategies (Satisfies General Education Outcome 1.2) | 3 |  |
| CIED 3023 Survey of Exceptionalities or CIED 4023 Teaching in Inclusive Secondary Settings | 3 |  |
| CATE 4033 Assessment / Program Evaluation | 3 |  |
| CATE 4052 Seminar Teaching Internship |  | 2 |
| CATE 406X Teaching Internship (Satisfies General |  | 12 |
|  |  |  |
| Year Total: | 12 | 14 |

## Total Units in Sequence:

${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5b \%2F1XG8924jwOx8pTlw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements
(https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.

## Requirements for B.S.E. in Career and Technical Education with Technology Education Concentration <br> Stage I: Pre-CATE requirements (PCATE)

Complete 41 hours of program pre-requisites for the Career and Technical Education B.S.E.:

1. Obtain a GPA of 2.7 or better on UA coursework.
2. Obtain a grade of "C" or better in completed technical courses (see "III. Technical Requirements" in desired CATE BS concentration).
3. Obtain a grade of "C" or better in CIED 1013: Introduction to Education and CATE 3103: Introduction to Professionalism. CATE 3103 should be taken during the fall semester of the sophomore year.

The Department of Curriculum and Instruction offers programs that prepare candidates for initial teacher licensure in career and technical education.

The admission to the career and technical education program consists of a three-stage process; simply meeting the minimum admission requirements will not guarantee admission. Admission will be determined by the CATE faculty based on the items listed in Stage II.

## Stage II: Admission to the Career and Technical Education Program B.S.E.

The application process, which occurs during CATE 3103: Introduction to Professionalism includes:

1. Submission of the application to teacher education through the university-wide Teacher Education Office (see the Teacher Education Application Fee). See website (https://teacher-education.uark.edu/) for details.
2. Submission of the CATE application located here (https://teachereducation.uark.edu/).
3. Submission of transcripts for all coursework.
4. Oral interview with CATE faculty.
5. Current background check.

## Stage III: Requirements for Program Continuation and Student Teaching/Internship (CATE 406X)

1. Maintain a cumulative GPA of 2.7 or better.
2. Complete or present proof of registration for the Praxis II Content
 area.
3. Maintain a current background check.
4. All "II. Professional Education" courses must have a grade of " C " or better. No teaching methods courses may be taken as self-paced (correspondence).

Requirements for teacher licensure vary from state to state and may differ in teacher preparation programs. Please note that Arkansas requires all applicants to successfully complete a criminal background check. Go to the Arkansas Teacher Licensure requirements (http://arkansased.org/ teachers/licensureinitial.html).
I. Pre-CATE requirements for Concentration in Technical

## Education ${ }^{1}$

Required State Minimum Core

| PSYC 2003 | General <br>  <br> 1103 ) |
| :--- | :--- |

Recommended for Technology Education concentration
MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 2203)

PHYS 2013 College Physics I (ACTS Equivalency = PHYS \& PHYS 2011L 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)
or PHYS 205University Physics I (ACTS Equivalency = PHYS 2034)
CIED 1013 Introduction to Education
CATE 3103 Introduction to Professionalism
II. Professional Education ${ }^{2,3}$29

CIED 3023 Survey of Exceptionalities
or CIED 402:Teaching in Inclusive Secondary Settings
CIED 3033 Classroom Learning Theory
CATE 4013 Teaching Strategies
CATE 4023 Classroom Management
CATE 4033 Assessment / Program Evaluation
CATE 4052 Seminar Teaching Internship
CATE 406X Teaching Internship (12 hours) ${ }^{4}$
III. Technical Requirements

ASTM 3042
ASTM 3173 Electricity in Agriculture
STEM 4033 Introduction to STEM Education
TEED 1203 CAD Technology I
TEED 2103 Technology and Society
ASTM 3102 Small Power Units/Turf Equipment
\& ASTM 3101L and Small Power Units/Turf Equipment Laboratory
TEED 4103 Engineering Design for Technology Education Capstone
Technical Requirement Elective (1-2 Hours)

## IV. Electives

Recommended courses for Technology Education - 3 hours must be Upper Level on-campus enrollment
COMM 1313

| Public Speaking (ACTS Equivalency $=$ SPCH |
| :--- | :--- |
| 1003) |

GNEG $1111 \quad$ Introduction to Engineering I
or GNEG
1108troduction to Engineering

CATE 4073 Introduction to Teaching Programming in the Secondary Schools

## Total Hours

## 120

1 See the State Mininum Core (p. 81) page.
${ }^{2}$ All "II. Professional Education" courses must have grade "C" or better to award degree credit.
${ }^{3}$ Admission to Career and Technical Education B.S. major is required to take Professional Education courses.
${ }^{4}$ See "Stage III: Requirements for Program Continuation and Student Teaching/Internship" in parent major (CATE BS).

## Career and Technical Education B.S.E. with Technology Education Concentration EightSemester Degree Program

Students wishing to follow the eight-semester degree plan in Technology Education should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satiesfies General Education |  |  |
| Outcome 1.1) |  |  |
| U.S. History or Government State Minimum Core <br> Fine Arts or Humanities State Minimum Core | 3 |  |
| (Satisfies General Education Outcome 3.1 or 3.2) |  |  |
| TEED 1203 CAD Technology I | 3 |  |
| CIED 1013 Introduction to Education <br> ENGL 1023 Composition II (ACTS Equivalency | 3 |  |
| = ENGL 1023) (Satisfies General Education | 3 |  |
| Outcome 1.1) |  | 3 |
| ASTM 3173 Electricity in Agriculture |  |  |
| TEED 2103 Technology and Society <br> MATH 2043 Survey of Calculus (ACTS <br> Equivalency = MATH 2203) (Satisfies General |  | 3 |
| Education Outcome 2.1) |  | 3 |
| Elective |  | 3 |
| Year Total: | 15 | 16 |

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

CATE 3103 Introduction to Professionalism 3
(Satisfies General Education Outcomes 4.1, 4.2, and 5.1)
Choose one of the following (Satisfies General
Education Outcome 3.4):
PHYS 2013 College Physics I (ACTS
Equivalency = PHYS 2014 Lecture)
\& PHYS 2011L College Physics I Laboratory
(ACTS Equivalency = PHYS 2014 Lab)
or PHYS 2054 University Physics I (ACTS
Equivalency $=$ PHYS 2034)
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies General
Education Outcome 3.3)


CATE 406X. Teaching Internship. 12 Hours.
A minimum of 15 weeks will be spent in an off-campus school, at which time the student will have an opportunity under supervision to observe, to teach and to participate in other activities involving the school and the community. Successful completion of a criminal background check required before student can begin internship. Prerequisite: Senior status, CATE 3103, CATE 4013, CATE 4023, CATE 4033, (CIED 3023 or CIED 4023), CIED 3033 and admission to CATEBS major. (Typically offered: Spring)
CATE 4073. Introduction to Teaching Programming in the Secondary Schools. 3 Hours.
This course provides an introduction to the foundations of teaching methods for computer programming in the secondary schools. Methods of computer programming instruction will include teaching strategies in coding, developing computational thinking, problem-solving skills, and applying key programming concepts. This is an introductory level course. No prerequisites are required. (Typically offered: Irregular)

CATE 4443. Teaching Career Development in Public Schools. 3 Hours.
This course provides a study of curricula, methods, and techniques involved in teaching career development as related to the 16 occupational clusters. Successful completion of this course is required for licensed teachers to earn their 418 Career Development endorsement. (Typically offered: Summer)

CATE 4803. Word Processing and Multimedia. 3 Hours.
This course is designed to provide an overview of computer technology for prospective teachers in career and technical education. The main emphasis will be placed on the hands-on learning of word processing and multimedia applications that are widely used in career and technical education programs and emerging trends and issues in computer technology. (Typically offered: Fall, Spring and Summer)

## Childhood Education (CHED)

The Department of Curriculum and Instruction offers programs that prepare candidates for initial teacher licensure in Elementary Education (K-6). The B.S.E. degree in Childhood Education is not an initial teacher licensure program but instead leads to the Master of Arts in Teaching (M.A.T.), which is the initial teacher licensure preparation program. Information about the M.A.T. degree program can be found in the University of Arkansas Graduate Catalog. on the Elementary Education (http://catalog.uark.edu/graduatecatalog/programsofstudy/ elementaryeducationmat/) page or the Teacher Education (http:// catalog.uark.edu/graduatecatalog/programsofstudy/teachereducation/) page.

Students majoring in Childhood Education must choose from among four concentrations:

- English as a Second Language Concentration
- Gifted and Talented Concentration
- Reading Concentration
- Science, Technology, Engineering and Math Concentration


## Requirements for B.S.E. in Childhood Education with EASL Concentration

Admission to the B.S.E. in Childhood Education is competitive and consists of a three-stage process; simply meeting the minimum requirements will not guarantee admission to the program. Admission will be determined by the Childhood Education faculty based on the seven items listed below in Stage II.

Stage I: Pre-Elementary Education (PELED)

Complete 63 hours of program pre-requisites for the Childhood Education B.S. or the Elementary Education B.S.:

1. Obtain a GPA of 3.0 or better on UA coursework.
2. †Complete all program courses with a "C" or better.
3. Obtain a passing score on the Math, Reading, and Writing sections of the Praxis Core or ACT.
4. Complete a background check.

## Stage II: Admission to the Childhood Education Program (CHED)

Admission to the Childhood Education Program is competitive; not all applicants meeting the minimum requirements will be admitted to the program. Applications to the Childhood Education (CHED) program must be submitted by 11:59 p.m. Central Jan. 30.

The application process includes:

1. Submission of the application to teacher education (see the Teacher Education Application Fee (p. 53)) through the university-wide Teacher Education Office.
2. Submission of Childhood Education application.
3. Submission of transcripts for all coursework.
4. Oral Interview with Childhood Education faculty.
5. Submission of passing score on Math, Reading, and Writing sections of the Praxis Core Exam.
6. Current background check.

## Stage III: Requirements for Program Continuation

1. Declaration of endorsement area of ESL, GT, Reading, or STEM.
2. Maintain a cumulative GPA of 3.0 or better.
3. Passing score on Praxis II, Elementary Education: Multiple Subjects.
4. All non-methods math, science, social studies and English Language Arts courses must be completed prior to senior year.
$\dagger$ All program courses must have a grade of "C" or better. No teaching methods courses may be taken as self-paced (correspondence) courses.

For licensure, students must continue in the Master of Arts in Teaching program, which has limited enrollment. Find out more about the M.A.T. Program (http://catalog.uark.edu/graduatecatalog/programsofstudy/ elementaryeducationmat/) in the Graduate Catalog.

## Childhood Education Requirements

Students in the Childhood Education program must choose one of four concentrations: English as a Second Language Concentration, a Gifted and Talented Concentration, a Reading Concentration, or a STEM Concentration.

## Dismissal based on Unethical or Unprofessional Behaviors from Childhood Education B.S.E. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome
\%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiL \%7C1000\&sdata=sFoXbbVeQF\%2FONOoiCaY4xAogtj \%2FyuQhynSiD\%2BQ2JKGo\%3D\&reserved=0), Arkansas

Division of Elementary and Secondary Education Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions \%2Feducator\%2520effectiveness\%2Fplsb-professional-ethics-discipline\%2Fcode-of-ethics-for-arkansaseducators\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb5 ${ }^{\text { }}$ \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1he \%7C1000\&sdata=HAyKtJYGbZoSMPMzHTIYRBguhdsLD9\%2BEC3RHOnBKn $\% 3 D \& r e s e r v e d=0$ ), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https://teacher-education.uark.edu/).

Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (p. 87).

## EASL Concentration (EASL)

## Pre-Elementary Education (PELED) requirements ${ }^{\dagger}$

State Minimum Core
The following are specifically required for CHED program
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103)
or MATH 13 Quantitative Reasoning (ACTS Equivalency $=$ MATH 1113)

BIOL 1543 Principles of Biology (ACTS Equivalency $=\mathrm{BIOL}$
\& BIOL 1541L 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency $=$ BIOL 1014 Lab)
or BIOL 1524Biological Principles (ACTS Equivalency $=$ BIOL 1004 Lecture)
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201‘'History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
GEOS 1113 Physical Geology (ACTS Equivalency = GEOL
\& GEOS 1111L1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)
GEOS 1123 Human Geography (ACTS Equivalency = GEOG 1113)
or ANTH 10ء́Introduction to Cultural Anthropology (ACTS Equivalency $=$ ANTH 2013)
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency $=$ HIST 1113)
or HIST 1123nstitutions and Ideas of World Civilizations II (ACTS Equivalency $=$ HIST 1123)
ARHS 1003 Basic Course in the Arts: Art Lecture (ACTS Equivalency = ARTA 1003)
or MLIT 100‘Experiencing Music (ACTS Equivalency = MUSC 1003)
or THTR 10CTheatre Appreciation (ACTS Equivalency = DRAM 1003)

PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)
WLIT 1113 World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113)
or WLIT 112:World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123)
Additional PELED requirements
CIED 1013 Introduction to Education
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)
or COMM 23Rßerpersonal Communication
COMM 1233 Media, Community and Citizenship
or PHIL 200〔Introduction to Philosophy (ACTS Equivalency $=$ PHIL 1103)
or PHIL 210:Introduction to Ethics (ACTS Equivalency = PHIL 1003)
or PHIL 220:Logic (ACTS Equivalency = PHIL 1003)
or PHIL 310ःEthics and the Professions
or PSYC 200 General Psychology (ACTS Equivalency = PSYC 1103)

HIST 3383 Arkansas and the Southwest (or any 3 hr Arkansas history course)
MATH 2213 Survey of Mathematical Structures I
MATH 2223 Survey of Mathematical Structures II
PHYS 1034 Physics for Elementary Education Majors
or ASTR Survey of the Universe (ACTS Equivalency = PHSC 2003/2001L 1204 Lecture)
or STEM 41(Astronomy for Educators

| $\begin{aligned} & \text { or GEOS } \\ & 1133 / 1131 \mathrm{~L} \end{aligned}$ | Earth Science (ACTS Equivalency = GEOL 1124 Lecture) |
| :---: | :---: |
| CIED 1003 | Introduction to Technology in Education |
| CIED 3013 | Development and Learning Theories in the K-6 Classroom ${ }^{\dagger}$ |
| Childhood Education major requirements 48 |  |
| To be completed following admission to CHED program: |  |
| 6 hrs. General Elective |  |
| ENGL 2003 | Advanced Composition |
| $\begin{aligned} & \text { ECON } 3053 \\ & \text { or ECON } 214 \end{aligned}$ | Economics for Elementary Teachers 43asic Economics: Theory and Practice |
| STAT 2303 | $\begin{aligned} & \text { Principles of Statistics (ACTS Equivalency }=\text { MATH } \\ & \text { 2103) } \end{aligned}$ |
| CIED 2943 | Foundations of Language and Literacy |
| CIED 3023 | Survey of Exceptionalities ${ }^{\dagger}$ |
| CIED 3053 | The Emerging Adolescent ${ }^{\dagger}$ |
| CIED 3113 | Emergent Literacy ${ }^{\dagger}$ |
| CIED 3123 | Mathematics Methods in the K-6 Classroom ${ }^{\dagger}$ |
| CIED 3133 | Integrated Social Studies for the K-6 Classroom ${ }^{\dagger}$ |
| STEM 3143 | Teaching Science in the Elementary Grades ${ }^{\dagger}$ |
| CIED 3453 | Developmental Literacy ${ }^{\dagger}$ |
| CIED 4153 | Classroom Management in the Elementary Grades $\dagger$ |
| CIED 4183 | Instruction and Assessment of Writing ${ }^{\dagger}$ |
| CIED 4533 | Reading Comprehension Through Children's and Adolescent Literature ${ }^{\dagger}$ |


| EASL Concent | on requirements |
| :---: | :---: |
| General Elective |  |
| STEM 4033 | Introduction to STEM Education ${ }^{\dagger}$ |
| CIED 4403 | Understanding Cultures in the Classroom |
| CIED 4413 | Acquiring a Second Language |

Total Hours
$\dagger$ Must have a grade of 'C' or better to award degree credit

## Childhood Education B.S.E. (EASL concentration)

## Eight-Semester Plan

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify to finish a degree in four years can follow the suggested order of classes below.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |
| MATH 1203 College Algebra (ACTS Equivalency | 3 |  |
| $=$ MATH 1103) (or higher) (Satisfies General |  |  |
| Education Outcome 2.1) <br> or MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency = MATH 1113) <br> Satisfies General Education Outcome 3.4: |  |  |

BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1524 Biological Principles (ACTS
Equivalency = BIOL 1004 Lecture)
CIED 1013 Introduction to Education
Choose one of the following: ${ }^{1}$
COMM 1233 Media, Community and Citizenship (Satisfies General Education Outcome 3.2)
PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103) (Satisfies General
Education Outcome 3.2)
PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003) (Satisfies General Education Outcome 3.2)
PHIL 2203 Logic (ACTS Equivalency = PHIL 1003)

PHIL 3103 Ethics and the Professions
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$
HIST 2003 History of the American People to
1877 (ACTS Equivalency = HIST 2113) (Satisfies
General Education Outcomes 3.3 and 4.2) ${ }^{1}$ or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) Satisfies General Education Outcome 4.1: ${ }^{1}$ HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency $=$ HIST 1113) or HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
Satisfies General Education Outcome 3.4: ${ }^{1}$
GEOS 1113 Physical Geology (ACTS Equivalency
= GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
MATH 2213 Survey of Mathematical Structures I
Year Total:

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

ARHS 1003 Basic Course in the Arts: Art Lecture
(ACTS Equivalency = ARTA 1003)
or MLIT 1003 Experiencing Music (ACTS
Equivalency = MUSC 1003)
or THTR 1003 Theatre Appreciation (ACTS
Equivalency = DRAM 1003)
MATH 2223 Survey of Mathematical Structures II
PLSC 2003 American National Government (ACTS

Equivalency $=$ PLSC 2003)

GEOS 1123 Human Geography (ACTS
Equivalency = GEOG 1113)
or ANTH 1023 Introduction to Cultural
Anthropology (ACTS Equivalency = ANTH 2013)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1) ${ }^{1}$
Select one of the following:
HIST 3383 Arkansas and the Southwest
Any 3-hour Arkansas History course
PHYS 1034 Physics for Elementary Education
Majors
or GEOS 1133/1131L Earth Science (ACTS
Equivalency = GEOL 1124 Lecture)
or ASTR 2003/2001L Survey of the Universe
(ACTS Equivalency = PHSC 1204 Lecture)
or STEM 4104 Astronomy for Educators
CIED 1003 Introduction to Technology in Education
WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113)
or WLIT 1123 World Literature: 1650CE to Present (ACTS Equivalency $=$ ENGL 2123)
CIED 3013 Development and Learning Theories in the K-6 Classroom
Year Total:

Third Year
CIED 2943 Foundations of Language and Literacy

STAT 2303 Principles of Statistics (ACTS 3
Equivalency = MATH 2103)
ENGL 2003 Advanced Composition
Elective
CIED 3453 Developmental Literacy
CIED 3123 Mathematics Methods in the K-6
Classroom
CIED 3023 Survey of Exceptionalities
Elective
ECON 3053 Economics for Elementary Teachers or ECON 2143 Basic Economics: Theory and Practice
Year Total:

| Fourth Year | Fall | Units <br> Spring |
| :--- | :---: | :---: |
| STEM 3143 Teaching Science in the Elementary | 3 |  |
| Grades | 3 |  |
| CIED 4183 Instruction and Assessment of Writing | 3 |  |
| CIED 3053 The Emerging Adolescent | 3 |  |
| CIED 3133 Integrated Social Studies for the K-6 | 3 |  |
| Classroom |  |  |
| CIED 4403 Understanding Cultures in the |  | 3 |
| Classroom |  |  |
| CIED 4153 Classroom Management in the |  |  |


| CIED 4533 Reading Comprehension Through |  |  |
| :--- | ---: | ---: |
| Children's and Adolescent Literature (Satisfies |  |  |
| General Education Outcome 6.1) |  |  |
| CIED 4413 Acquiring a Second Language |  |  |
| STEM 4033 Introduction to STEM Education | 3 |  |
| Elective | 3 |  |
| Year Total: | 15 | 3 |

Total Units in Sequence:

1 Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2F1XG8924jwOx8pTlw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.

## Requirements for B.S.E. in Childhood Education with Gifted and Talented Concentration

Admission to the B.S.E. in Childhood Education is competitive and consists of a three-stage process; simply meeting the minimum requirements will not guarantee admission to the program. Admission will be determined by the Childhood Education faculty based on the seven items listed below in Stage II.

## Stage I: Pre-Elementary Education (PELED)

Complete 63 hours of program pre-requisites for the Childhood Education B.S. or the Elementary Education B.S.:

1. Obtain a GPA of 3.0 or better on UA coursework.
2. †Complete all program courses with a "C" or better.
3. Obtain a passing score on the Math, Reading, and Writing sections of the Praxis Core or ACT.
4. Complete a background check.

## Stage II: Admission to the Childhood Education Program (CHED)

Admission to the Childhood Education Program is competitive; not all applicants meeting the minimum requirements will be admitted to the program. Applications to the Childhood Education (CHED) program must be submitted by 11:59 p.m. Central Jan. 30.

The application process includes:

1. Submission of the application to teacher education (see the Teacher Education Application Fee (p. 53)) through the university-wide Teacher Education Office.
2. Submission of Childhood Education application.
3. Submission of transcripts for all coursework.
4. Oral Interview with Childhood Education faculty.
5. Submission of passing score on Math, Reading, and Writing sections of the Praxis Core Exam.
6. Current background check.

## Stage III: Requirements for Program Continuation

1. Declaration of endorsement area of ESL, GT, Reading, or STEM.
2. Maintain a cumulative GPA of 3.0 or better.
3. Passing score on Praxis II, Elementary Education: Multiple Subjects.
4. All non-methods math, science, social studies and English Language Arts courses must be completed prior to senior year.
$\dagger$ All program courses must have a grade of " $C$ " or better. No teaching methods courses may be taken as self-paced (correspondence) courses.

For licensure, students must continue in the Master of Arts in Teaching program, which has limited enrollment. Find out more about the M.A.T. Program (http://catalog.uark.edu/graduatecatalog/programsofstudy/ elementaryeducationmat/) in the Graduate Catalog.

## Childhood Education Requirements

Students in the Childhood Education program must choose one of four concentrations: English as a Second Language Concentration, a Gifted and Talented Concentration, a Reading Concentration, or a STEM Concentration.

## Dismissal based on Unethical or Unprofessional Behaviors from Childhood Education B.S.E. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome \%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb! \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1hú \%7C1000\&sdata=sFoXbbVeQF\%2FONOoiCaY4xAogtj \%2FyuQhynSiD\%2BQ2JKGo\%3D\&reserved=0), Arkansas Division of Elementary and Secondary Education Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions \%2Feducator\%2520effectiveness\%2Fplsb-professional-ethics-discipline\%2Fcode-of-ethics-for-arkansaseducators\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb! \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1he \%7C1000\&sdata=HAyKtJYGbZoSMPMzHTIYRBguhdsLD9\%2BEC3RH0nBKmZQIIST 2003 \%3D\&reserved=0), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range
from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https://teacher-education.uark.edu/).

Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (p. 87).

## Gifted and Talented Concentration

## Pre-Elementary Education (PELED) requirements ${ }^{\dagger}$

State Minimum Core
Specifically required for CHED program
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)
or MATH 13 Quantitative Reasoning (ACTS Equivalency $=$ MATH 1113)

\& BIOL 1541L 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1524Biological Principles (ACTS Equivalency $=$ BIOL 1004 Lecture)
GEOS 1113 Physical Geology (ACTS Equivalency = GEOL
\& GEOS 1111L1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)
History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
GEOS 1123 Human Geography (ACTS Equivalency = GEOG 1113)
or ANTH 10ء́Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013)
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency $=$ HIST 1113)
or HIST 1123nstitutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)

| ARHS 1003 | Basic Course in the Arts: Art Lecture (ACTS Equivalency = ARTA 1003) |
| :---: | :---: |
| or MLIT 100: Experiencing Music (ACTS Equivalency = MUSC 1003) |  |
| or THTR 10CTheatre Appreciation (ACTS Equivalency = DRAM 1003) |  |
| PLSC 2003 | American National Government (ACTS Equivalency = PLSC 2003) |
| WLIT 1113 | World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113) |
| or WLIT 112:World Literature: 1650CE to Present (ACTS Equivalency $=$ ENGL 2123) |  |
| Additional PELED requirements |  |
| CIED 1003 | Introduction to Technology in Education |
| CIED 1013 | Introduction to Education |
| COMM 1313 | $\begin{aligned} & \text { Public Speaking (ACTS Equivalency }=\text { SPCH } \\ & \text { 1003) } \end{aligned}$ |
| or COMM 23Interpersonal Communication |  |
| COMM 1233 Media, Community and Citizenship <br> or PHIL 20031ntroduction to Philosophy (ACTS Equivalency = PHIL 1103) |  |
| or PHIL 21031ntroduction to Ethics (ACTS Equivalency = PHIL 1003) |  |
| or PHIL 2203Logic (ACTS Equivalency = PHIL 1003) |  |
| or PHIL 3103Ethics and the Professions |  |
| or PSYC 2003eneral Psychology (ACTS Equivalency = PSYC 1103) |  |
| HIST 3383 | Arkansas and the Southwest (or any 3 hr Arkansas history course) |
| MATH 2213 | Survey of Mathematical Structures I |
| MATH 2223 | Survey of Mathematical Structures II |
| PHYS 1034 | Physics for Elementary Education Majors |
| $\begin{aligned} & \text { or GEOS } \\ & 1133 / 1131 \mathrm{~L} \end{aligned}$ | Earth Science (ACTS Equivalency = GEOL 1124 Lecture) |
| or ASTR 2003/2001L | Survey of the Universe (ACTS Equivalency = PHSC 1204 Lecture) |
| or STEM | O4stronomy for Educators |
| CIED 3013 | Development and Learning Theories in the K-6 Classroom ${ }^{\dagger}$ |
| Childhood Education major requirements |  |
| To be completed following admission to CHED program: |  |
| 6 hours Elective |  |
| ENGL 2003 | Advanced Composition |
| or ECON 2143asic Economics: Theory and Practice |  |
| STAT 2303 | ```Principles of Statistics (ACTS Equivalency = MATH 2103)``` |
| CIED 2943 | Foundations of Language and Literacy |
| CIED 3023 | Survey of Exceptionalities ${ }^{\dagger}$ |
| CIED 3053 | The Emerging Adolescent ${ }^{\dagger}$ |
| CIED 3113 | Emergent Literacy ${ }^{\dagger}$ |
| CIED 3123 | Mathematics Methods in the K-6 Classroom ${ }^{\dagger}$ |
| CIED 3133 | Integrated Social Studies for the K-6 Classroom ${ }^{\dagger}$ |
| STEM 3143 | Teaching Science in the Elementary Grades ${ }^{\dagger}$ |

CIED 3453 Developmental Literacy ${ }^{\dagger}$
CIED 4153 Classroom Management in the Elementary Grades $\dagger$
CIED 4183 Instruction and Assessment of Writing ${ }^{\dagger}$
CIED 4533 Reading Comprehension Through Children's and Adolescent Literature ${ }^{\dagger}$
GATE Concentration requirements
6 hours Adviser Approved GT Courses ${ }^{\dagger}$
CIED 4423 Teaching English as a Second Language ${ }^{\dagger}$
STEM 4033 Introduction to STEM Education ${ }^{\dagger}$
Total Hours
$\dagger$ Must have a grade of ' C ' or better to award degree credit
1 Or any 3-hour Arkansas History course

## Childhood Education B.S.E. with Gifted and Talented Education Concentration Eight-Semester Degree Program

All coursework must be passed with a "C" or better to award degree credit.

## Childhood Education B.S.E. with Gifted and Talented Concentration <br> Eight-Semester Plan

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify to finish a degree in four years can follow the suggested order of classes below.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |

COMM 1233 Media, Community and Citizenship
(Satisfies General Education Outcome 3.2)
PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103) (Satisfies General
Education Outcome 3.2)
PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003) (Satisfies General
Education Outcome 3.2)

PHIL 2203 Logic (ACTS Equivalency = PHIL 1003) (Satisfies General Education Outcome 5.1)

PHIL 3103 Ethics and the Professions (Satisfies General Education Outcome 5.1)
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1) ${ }^{1}$
HIST 2003 History of the American People to 1877 (ACTS Equivalency $=$ HIST 2113) (Satisfies General Education Outcomes 3.2, 3.3, and 4.2) ${ }^{1}$ or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)
Satisfies General Education Outcomes 3.2, 3.3, and $4.1:^{1}$

HIST 1113 Institutions and Ideas of World
Civilizations I (ACTS Equivalency $=$ HIST 1113)
or HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
Satisfies General Education Outcome 3.4: ${ }^{1}$
GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency $=$ GEOL 1114 Lab)
MATH 2213 Survey of Mathematical Structures I
Year Total:

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

Satisfies General Education Outcome 3.1: ${ }^{1}$
ARHS 1003 Basic Course in the Arts: Art Lecture
(ACTS Equivalency = ARTA 1003)
or MLIT 1003 Experiencing Music (ACTS
Equivalency = MUSC 1003)
or THTR 1003 Theatre Appreciation (ACTS
Equivalency = DRAM 1003)
MATH 2223 Survey of Mathematical Structures II
PLSC 2003 American National Government (ACTS
Equivalency = PLSC 2003) (Satisfies General Education Outcomes 3.3 and 4.2) ${ }^{1}$
GEOS 1123 Human Geography (ACTS
Equivalency = GEOG 1113)
or ANTH 1023 Introduction to Cultural
Anthropology (ACTS Equivalency = ANTH 2013)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1) ${ }^{1}$
or COMM 2323 Interpersonal Communication
Select one of the following:
HIST 3383 Arkansas and the Southwest
Any 3-hour Arkansas History course

PHYS 1034 Physics for Elementary Education
Majors
or GEOS 1133/1131L Earth Science (ACTS
Equivalency = GEOL 1124 Lecture)
or ASTR 2003/2001L Survey of the Universe
(ACTS Equivalency = PHSC 1204 Lecture)
or STEM 4104 Astronomy for Educators
CIED 1003 Introduction to Technology in Education
WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113)
or WLIT 1123 World Literature: 1650CE to Present
(ACTS Equivalency = ENGL 2123)
CIED 3013 Development and Learning Theories in
the K-6 Classroom
Year Total:

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

$\begin{array}{ll}\text { CIED } 3453 \text { Developmental Literacy } & 3 \\ \text { CIED } 3123 \text { Mathematics Methods in the K-6 } & 3\end{array}$
Classroom
CIED 3023 Survey of Exceptionalities 3
Elective 3
ECON 3053 Economics for Elementary Teachers 3
or ECON 2143 Basic Economics: Theory and Practice

Year Total: 15

| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| STEM 3143 Teaching Science in the Elementary | 3 |  |
| Grades | 3 |  |
| CIED 4183 Instruction and Assessment of Writing | 3 |  |
| CIED 3053 The Emerging Adolescent | 3 |  |
| CIED 3133 Integrated Social Studies for the K-6 |  |  |
| Classroom | 3 |  |

CIED 4153 Classroom Management in the 3
Elementary Grades
CIED 4533 Reading Comprehension Through
Children's and Adolescent Literature (Satisfies General Education Outcome 6.1) ${ }^{1}$
STEM 4033 Introduction to STEM Education

Language
Approved GT course 3
Year Total: 15
${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3 \%2F1XG8924jwOx8pTlw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3 \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.

## Requirements for B.S.E. in Childhood Education with Reading Concentration

Admission to the B.S.E. in Childhood Education is competitive and consists of a three-stage process; simply meeting the minimum requirements will not guarantee admission to the program. Admission will be determined by the Childhood Education faculty based on the seven items listed below in Stage II.

## Stage I: Pre-Elementary Education (PELED)

Complete 63 hours of program pre-requisites for the Childhood Education B.S. or the Elementary Education B.S.:

1. Obtain a GPA of 3.0 or better on UA coursework.
2. †Complete all program courses with a " $C$ " or better.
3. Obtain a passing score on the Math, Reading, and Writing sections of the Praxis Core or ACT.
4. Complete a background check.

## Stage II: Admission to the Childhood Education Program (CHED)

Admission to the Childhood Education Program is competitive; not all applicants meeting the minimum requirements will be admitted to the program. Applications to the Childhood Education (CHED) program must be submitted by 11:59 p.m. Central Jan. 30.

The application process includes:

1. Submission of the application to teacher education (see the Teacher Education Application Fee (p. 53)) through the university-wide Teacher Education Office.
2. Submission of Childhood Education application.
3. Submission of transcripts for all coursework.
4. Oral Interview with Childhood Education faculty.
5. Submission of passing score on Math, Reading, and Writing sections of the Praxis Core Exam.
6. Current background check.

## Stage III: Requirements for Program Continuation

1. Declaration of endorsement area of ESL, GT, Reading, or STEM.
2. Maintain a cumulative GPA of 3.0 or better.
3. Passing score on Praxis II, Elementary Education: Multiple Subjects.
4. All non-methods math, science, social studies and English Language Arts courses must be completed prior to senior year.
$\dagger$ All program courses must have a grade of "C" or better. No teaching methods courses may be taken as self-paced (correspondence) courses.
cb566a80d1\%7C0\%7C0\%7C637248086069611524\&sdata=4bJ2Oob83N8KfTkGD
For licensure, students must continue in the Master of Arts in Teaching program, which has limited enrollment. Find out more about the M.A.T. Program (http://catalog.uark.edu/graduatecatalog/programsofstudy/ elementaryeducationmat/) in the Graduate Catalog.

## Childhood Education Requirements

Studersinthe concentrations: English as a Second Language Concentration, a Gifted and Talented Concentration, a Reading Concentration, or a STEM Concentration.

## Dismissal based on Unethical or Unprofessional Behaviors from Childhood Education B.S.E. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome \%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiL \%7C1000\&sdata=sFoXbbVeQF\%2FONOoiCaY4xAogtj
\%2FyuQhynSiD\%2BQ2JKGo\%3D\&reserved=0), Arkansas Division of Elementary and Secondary Education Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions \%2Feducator\%2520effectiveness\%2Fplsb-professional-ethics-discipline\%2Fcode-of-ethics-for-arkansaseducators\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiL \%7C1000\&sdata=HAyKtJYGbZoSMPMzHTIYRBguhdsLD9\%2BEC3RH0nBKmZQ \%3D\&reserved=0), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https://teacher-education.uark.edu/).

Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (p. 87).

## Reading Concentration

| Pre-Elementary Education (PELED) requirements ${ }^{\dagger}$ |  |
| :---: | :---: |
| State Minimum C | ore 35 |
| Specifically required for CHED program |  |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH |  |
| or MATH 13 Quantitative Reasoning (ACTS Equivalency $=$ MATH 1113) |  |
| BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL <br> \& BIOL 1541L 1014 Lecture) <br> and Principles of Biology Laboratory (ACTS <br> Equivalency $=$ BIOL 1014 Lab) <br> or BIOL 152Biological Principles (ACTS Equivalency = BIOL 1004 Lecture) |  |
|  |  |
| GEOS 1113 Physical Geology (ACTS Equivalency = GEOL \& GEOS 1111L1114 Lecture) <br> and Physical Geology Laboratory (ACTS <br> Equivalency = GEOL 1114 Lab) |  |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |
| or HIST 201History of the American People, 1877 to Present <br> (ACTS Equivalency = HIST 2123) |  |
| GEOS 1123 | ```Human Geography (ACTS Equivalency = GEOG 1113)``` |
| or ANTH 10ء́Introduction to Cultural Anthropology (ACTSEquivalency = ANTH 2013) |  |

HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113)
or HIST 1123nstitutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
ARHS 1003 Basic Course in the Arts: Art Lecture (ACTS Equivalency = ARTA 1003)
or MLIT 100‘Experiencing Music (ACTS Equivalency = MUSC 1003)
or THTR 10CTheatre Appreciation (ACTS Equivalency = DRAM 1003)

PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)
WLIT 1113 World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113)
or WLIT 112:World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123)
Additional PELED requirements
CIED 1003 Introduction to Technology in Education
CIED 1013 Introduction to Education
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)
or COMM 23Interpersonal Communication
COMM 1233 Media, Community and Citizenship
or PHIL 20031ntroduction to Philosophy (ACTS Equivalency $=$ PHIL 1103)
or PHIL 21031ntroduction to Ethics (ACTS Equivalency = PHIL 1003)
or PHIL 2203Logic (ACTS Equivalency $=$ PHIL 1003)
or PHIL 3103Ethics and the Professions
or PSYC 2003eneral Psychology (ACTS Equivalency = PSYC 1103)

HIST 3383 Arkansas and the Southwest (or any 3hr Arkansas history course)
MATH 2213 Survey of Mathematical Structures I
MATH 2223 Survey of Mathematical Structures II
PHYS 1034 Physics for Elementary Education Majors
or GEOS Earth Science (ACTS Equivalency = GEOL 1124 1133/1131L Lecture)
or ASTR Survey of the Universe (ACTS Equivalency $=$ PHSC 2003/2001L 1204 Lecture)
or STEM 4104stronomy for Educators
CIED 3013 Development and Learning Theories in the K-6 Classroom
Childhood Education major requirements
To be completed following admission to CHED program:
6 hours Elective
ENGL 2003 Advanced Composition
ECON 3053 Economics for Elementary Teachers
or ECON 2143asic Economics: Theory and Practice
STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

CIED 2943 Foundations of Language and Literacy ${ }^{\dagger}$
CIED 3023 Survey of Exceptionalities ${ }^{\dagger}$
CIED 3053 The Emerging Adolescent ${ }^{\dagger}$
CIED 3113 Emergent Literacy ${ }^{\dagger}$
CIED 3123 Mathematics Methods in the K-6 Classroom ${ }^{\dagger}$
CIED 3133 Integrated Social Studies for the K-6 Classroom ${ }^{\dagger}$
STEM 3143 Teaching Science in the Elementary Grades ${ }^{\dagger}$
CIED 3453 Developmental Literacy
CIED 4153 Classroom Management in the Elementary Grades
CIED 4183 Instruction and Assessment of Writing
CIED 4533 Reading Comprehension Through Children's and Adolescent Literature
READ Concentration requirements
SPED 4173 Introduction to Dyslexia: Literacy Development and Structure of Language

| CIED 4423 | Teaching English as a Second Language $^{\dagger}$ |
| :--- | :--- |
| SPED 4483 | Teaching Literacy Skills to Students with <br>  <br> Disabilities |

Total Hours
$\dagger$ Must have a grade of ' C ' or better to award degree credit

## Childhood Education B.S.E. with Reading Concentration

## Eight-Semester Plan

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify to finish a degree in four years can follow the suggested order of classes below.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$ <br> or MATH 1313 Quantitative Reasoning (ACTS <br> Equivalency = MATH 1113) | 3 |  |
| Satisfies General Education Outcome 3.4: ${ }^{1}$ |  |  |
| BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) | 4 |  |
| \& BIOL 1541L Principles of Biology Laboratory <br> (ACTS Equivalency = BIOL 1014 Lab) <br> or BIOL 1524 Biological Principles (ACTS <br> Equivalency = BIOL 1004 Lecture) |  |  |
| CIED 1013 Introduction to Education | 3 |  |
| Choose one of the following: ${ }^{1}$ | 3 |  |

COMM 1233 Media, Community and Citizenship (Satisfies General Education Outcome 3.2)
PHIL 2003 Introduction to Philosophy (ACTS Equivalency = PHIL 1103) (Satisfies General Education Outcome 3.2)
PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003) (Satisfies General Education Outcome 3.2)
PHIL 2203 Logic (ACTS Equivalency = PHIL 1003) (Satisfies General Education Outcome 5.1)

PHIL 3103 Ethics and the Professions (Satisfies General Education Outcome 5.1) PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1) ${ }^{1}$
HIST 2003 History of the American People to 1877 (ACTS Equivalency $=$ HIST 2113) (Satisfies
General Education Outcomes 3.2, 3.3, and 4.2) ${ }^{1}$ or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)

Satisfies General Education Outcome 4.1: ${ }^{1}$

HIST 1113 Institutions and Ideas of World
Civilizations I (ACTS Equivalency = HIST 1113) or HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
Satisfies General Education Outcome 3.4: ${ }^{1}$
GEOS 1113 Physical Geology (ACTS Equivalency
= GEOL 1114 Lecture)
\& GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
MATH 2213 Survey of Mathematical Structures I
Year Total:

Second Year $\quad$ Fall | Units |
| ---: |
| Spring |

Satisfies General Education Outcome 3.1: ${ }^{1}$
ARHS 1003 Basic Course in the Arts: Art Lecture
(ACTS Equivalency = ARTA 1003)
or MLIT 1003 Experiencing Music (ACTS
Equivalency = MUSC 1003)
or THTR 1003 Theatre Appreciation (ACTS
Equivalency = DRAM 1003)
MATH 2213 Survey of Mathematical Structures I 3
PLSC 2003 American National Government (ACTS 3
Equivalency = PLSC 2003)
GEOS 1123 Human Geography (ACTS
Equivalency = GEOG 1113)
or ANTH 1023 Introduction to Cultural
Anthropology (ACTS Equivalency = ANTH 2013)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1) ${ }^{1}$
or COMM 2323 Interpersonal Communication
Select one of the following:
HIST 3383 Arkansas and the Southwest
Any 3-hour Arkansas History course
PHYS 1034 Physics for Elementary Education
Majors
or GEOS 1133/1131L Earth Science (ACTS
Equivalency = GEOL 1124 Lecture)
or ASTR 2003/2001L Survey of the Universe
(ACTS Equivalency $=$ PHSC 1204 Lecture)
or STEM 4104 Astronomy for Educators
CIED 1003 Introduction to Technology in Education 3
WLIT 1113 World Literature: Beginnings to 1650
CE (ACTS Equivalency = ENGL 2113)
or WLIT 1123 World Literature: 1650CE to Present
(ACTS Equivalency = ENGL 2123)
CIED 3013 Development and Learning Theories in
the K-6 Classroom
Year Total:

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

CIED 2943 Foundations of Language and Literacy 3
CIED 3113 Emergent Literacy 3

Units

STAT 2303 Principles of Statistics (ACTS 3
Equivalency $=$ MATH 2103)
ENGL 2003 Advanced Composition 3
Electives 3
CIED 3453 Developmental Literacy
CIED 3123 Mathematics Methods in the K-6
Classroom
CIED 3023 Survey of Exceptionalities
Electives
ECON 3053 Economics for Elementary Teachers or ECON 2143 Basic Economics: Theory and Practice
Year Total:

Fourth Year
STEM 3143 Teaching Science in the Elementary
Grades
CIED 4183 Instruction and Assessment of Writing
3
CIED 3053 The Emerging Adolescent 3
CIED 3133 Integrated Social Studies for the K-6 3
Classroom
CIED 4423 Teaching English as a Second 3
Language
CIED 4153 Classroom Management in the Elementary Grades
CIED 4533 Reading Comprehension Through Children's and Adolescent Literature (Satisfies General Education Outcome 6.1) ${ }^{1}$
STEM 4033 Introduction to STEM Education
SPED 4173 Introduction to Dyslexia: Literacy
Development and Structure of Language
SPED 4483 Teaching Literacy Skills to Students with Disabilities
Year Total:
15

## Total Units in Sequence:

${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu
 \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.

## Requirements for B.S.E. in Childhood Education with STEM Concentration

Admission to the B.S.E. in Childhood Education is competitive and consists of a three-stage process; simply meeting the minimum 3 requirements will not guarantee admission to the program. Admission will 3 be determined by the Childhood Education faculty based on the seven items listed below in Stage II.

## Stage I: Pre-Elementary Education (PELED)

Complete 63 hours of program pre-requisites for the Childhood Education B.S. or the Elementary Education B.S.:

1. Obtain a GPA of 3.0 or better on UA coursework.
2. †Complete all program courses with a " $C$ " or better.
3. Obtain a passing score on the Math, Reading, and Writing sections of the Praxis Core or ACT.
4. Complete a background check.

## Stage II: Admission to the Childhood Education Program (CHED)

Admission to the Childhood Education Program is competitive; not all applicants meeting the minimum requirements will be admitted to the program. Applications to the Childhood Education (CHED) program must be submitted by $11: 59$ p.m. Central Jan. 30 .

The application process includes:

1. Submission of the application to teacher education (see the Teacher Education Application Fee (p. 53)) through the university-wide Teacher Education Office.
2. Submission of Childhood Education application.
3. Submission of transcripts for all coursework.
4. Oral Interview with Childhood Education faculty.
5. Submission of passing score on Math, Reading, and Writing sections of the Praxis Core Exam.
6. Current background check.

## Stage III: Requirements for Program Continuation

1. Declaration of endorsement area of ESL, GT, Reading, or STEM.
2. Maintain a cumulative GPA of 3.0 or better.
3. Passing score on Praxis II, Elementary Education: Multiple Subjects.
4. All non-methods math, science, social studies and English Language Arts courses must be completed prior to senior year.
$\dagger$ All program courses must have a grade of " C " or better. No teaching

For licensure, students must continue in the Master of Arts in Teaching program, which has limited enrollment. Find out more about the M.A.T. Program (http://catalog.uark.edu/graduatecatalog/programsofstudy/ elementaryeducationmat/) in the Graduate Catalog.

Students in the Childhood Education program must choose one of four concentrations: English as a Second Language Concentration, a Gifted and Talented Concentration, a Reading Concentration, or a STEM Concentration.

Dismissal based on Unethical or Unprofessional Behaviors from Childhood Education B.S.E. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome
\%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu
\%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb! \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1he \%7C1000\&sdata=sFoXbbVeQF\%2FONOoiCaY4xAogtj \%2FyuQhynSiD\%2BQ2JKGo\%3D\&reserved=0), Arkansas
Division of Elementary and Secondary Education Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions \%2Feducator\%2520effectiveness\%2Fplsb-professional-ethics-discipline\%2Fcode-of-ethics-for-arkansas-
educators\&data=04\%7C01\%7Ckmamisei\%40uark.edu
\%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb! \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1ha \%7C1000\&sdata=HAyKtJYGbZoSMPMzHTIYRBguhdsLD9\%2BEC3RHOnBKn, \%3D\&reserved=0), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https://teacher-education.uark.edu/).

Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (p. 87).

## STEM Concentration

Pre- Elementary Education (PELED) requirements ${ }^{\dagger}$
State Minimum Core

Specifically required for CHED program
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)
or MATH 13 Quantitative Reasoning (ACTS Equivalency $=$ MATH 1113)

BIOL 1543 Principles of Biology (ACTS Equivalency $=$ BIOL
\& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1524Biological Principles (ACTS Equivalency $=$ BIOL 1004 Lecture)
GEOS 1113 Physical Geology (ACTS Equivalency = GEOL
\& GEOS 1111L1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
GEOS 1123 Human Geography (ACTS Equivalency = GEOG 1113)
or ANTH 10ء́Introduction to Cultural Anthropology (ACTS Equivalency $=$ ANTH 2013)
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency $=$ HIST 1113)
or HIST 1123nstitutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
ARHS 1003 Basic Course in the Arts: Art Lecture (ACTS Equivalency = ARTA 1003)
or MLIT 100‘Experiencing Music (ACTS Equivalency = MUSC 1003)
or THTR 10CTheatre Appreciation (ACTS Equivalency = DRAM 1003)

PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)
WLIT 1113 World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113)
or WLIT 112:World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123)
Additional PELED requirements
CIED 1003 Introduction to Technology in Education
CIED 1013 Introduction to Education
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)
or COMM 23Interpersonal Communication
COMM 1233 Media, Community and Citizenship
or PHIL 2003introduction to Philosophy (ACTS Equivalency = PHIL 1103)
or PHIL 2103Introduction to Ethics (ACTS Equivalency = PHIL 1003)
or PHIL 2203Logic (ACTS Equivalency = PHIL 1003)
or PHIL 3103Ethics and the Professions
or PSYC 2003eneral Psychology (ACTS Equivalency = PSYC 1103)

| HIST 3383 | Arkansas and the Southwest (or any 3 hour Arkansas history course) |
| :---: | :---: |
| MATH 2213 | Survey of Mathematical Structures I |
| MATH 2223 | Survey of Mathematical Structures II |
| $\begin{gathered} \text { PHYS } 1034 \\ \text { or GEOS } \\ 1133 / 113 \\ \text { or ASTR } \\ 2003 / 200 \\ \text { or STEM } \end{gathered}$ | Physics for Elementary Education Majors <br> Earth Science (ACTS Equivalency = GEOL 1124 <br> Lecture) <br> Survey of the Universe (ACTS Equivalency = PHSC 1204 Lecture) <br> 04stronomy for Educators |
| CIED 3013 | Development and Learning Theories in the K-6 Classroom |
| Childhood Education major requirements 48 |  |
| To be completed following admission to CHED program |  |
| 6 hours Elective |  |
| ENGL 2003 | Advanced Composition |
| STAT 2303 | $\begin{aligned} & \text { Principles of Statistics (ACTS Equivalency }=\text { MATH } \\ & \text { 2103) } \end{aligned}$ |
| $\begin{array}{r} \text { ECON } 3053 \\ \text { or ECON } \end{array}$ | Economics for Elementary Teachers ،Basic Economics: Theory and Practice |
| CIED 2943 | Foundations of Language and Literacy |
| CIED 3023 | Survey of Exceptionalities ${ }^{\dagger}$ |
| CIED 3053 | The Emerging Adolescent ${ }^{\dagger}$ |
| CIED 3113 | Emergent Literacy ${ }^{\dagger}$ |
| CIED 3123 | Mathematics Methods in the K-6 Classroom ${ }^{\dagger}$ |
| CIED 3133 | Integrated Social Studies for the K-6 Classroom ${ }^{\dagger}$ |
| STEM 3143 | Teaching Science in the Elementary Grades ${ }^{\dagger}$ |
| CIED 3453 | Developmental Literacy ${ }^{\dagger}$ |
| CIED 4153 | Classroom Management in the Elementary Grades $\dagger$ |
| CIED 4183 | Instruction and Assessment of Writing ${ }^{\dagger}$ |
| CIED 4533 | Reading Comprehension Through Children's and Adolescent Literature ${ }^{\dagger}$ |

STEM Concentration requirements
3 hrs of General Elective
CIED 4423 Teaching English as a Second Language ${ }^{\dagger}$
STEM 4033 Introduction to STEM Education ${ }^{\dagger}$
STEM 4043 Creativity and Innovation in STEM Education
Total Hours

Must have a grade of 'C' or better to award degree credit
Or any 3-hour Arkansas History course

## Childhood Education B.S.E. with STEM Concentration

## Eight-Semester Plan

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify to finish a degree in four years can follow the suggested order of classes below.

| First Year |  | Units Spring |
| :---: | :---: | :---: |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) ${ }^{1}$ | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103) (Satisfies General Education Outcome 2.1) ${ }^{1}$ <br> or MATH 1313 Quantitative Reasoning (ACTS Equivalency = MATH 1113) <br> Satisfies General Education Outcome 3.4: ${ }^{1}$ | 3 |  |
| BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory <br> (ACTS Equivalency = BIOL 1014 Lab) <br> or BIOL 1524 Biological Principles (ACTS <br> Equivalency = BIOL 1004 Lecture) | 4 |  |
| CIED 1013 Introduction to Education | 3 |  |
| Choose one of the following: ${ }^{1}$ <br> COMM 1233 Media, Community and Citizenship (Satisfies General Education Outcome 3.2) <br> PHIL 2003 Introduction to Philosophy (ACTS <br> Equivalency = PHIL 1103) (Satisfies General Education Outcome 3.2) <br> PHIL 2103 Introduction to Ethics (ACTS <br> Equivalency = PHIL 1003) (Satisfies General Education Outcome 3.2) <br> PHIL 2203 Logic (ACTS Equivalency = PHIL 1003) (Satisfies General Education Outcome <br> 5.1) <br> PHIL 3103 Ethics and the Professions (Satisfies General Education Outcome 5.1) <br> PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) ${ }^{1}$ |  | 3 |
| HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) (Satisfies General Education Outcomes 3.2, 3.3 and 4.2) ${ }^{1}$ or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  | 3 |
| Satisfies General Education Outcome 4.1:1 |  |  |
| HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) or HIST 1123 Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123) Satisfies General Education Outcome 3.4: ${ }^{1}$ |  | 3 |
| GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) <br> \& GEOS 1111L Physical Geology Laboratory <br> (ACTS Equivalency $=$ GEOL 1114 Lab) |  | 4 |
| MATH 2213 Survey of Mathematical Structures I |  | 3 |
| Year Total: | 16 | 16 |

Second Year

Fall | Units |
| ---: |
| Spring |



## Faculty

Beasley, Jennifer G., Ed.D. (University of Virginia), M.A. (Wichita State University), B.A. (Kansas State University), Clinical Associate Professor, Department of Curriculum and Instruction, 2009, 2018.
Elsass, Angela Carlton, Ed.D., Ed.S. (University of Arkansas), M.Ed. (Harding University), B.S.E. (University of Central Arkansas), Clinical Associate Professor, Department of Curriculum and Instruction, 2010, 2016.

Imbeau, Marcia B., Ph.D. (University of Connecticut), M.Ed. (University of Arkansas at Little Rock), B.A. (Hendrix College), Professor, Department of Curriculum and Instruction, 1991, 2013.
Mounts, Denise Ann, Ed.D. (Saint Louis University), B.S.E. (Northwest Missouri State University), Clinical Associate Professor, Department of Curriculum and Instruction, 2005, 2016.

Wissehr, Cathy, Ed.D. (University of Missouri-Columbia), M.N.S.Ed., B.S. (Southeast Missouri State University), Clinical Associate Professor, Department of Curriculum and Instruction, 2009, 2016.

## Courses

CIED 1003. Introduction to Technology in Education. 3 Hours.
A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning. (Typically offered: Fall, Spring and Summer)

## CIED 1013. Introduction to Education. 3 Hours.

Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. An 18-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings is incorporated in this introductory course to education. (Typically offered: Fall and Spring)

## CIED 2083. Innovation and Creativity in Daily Practice. 3 Hours.

Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

CIED 2943. Foundations of Language and Literacy. 3 Hours.
A foundational study of language and literacy with an emphasis on content knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)
CIED 3013. Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
CIED 3013H. Honors Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions.
Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3013.
CIED 3023. Survey of Exceptionalities. 3 Hours.
A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3023H. Honors Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.

## CIED 3033. Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3033H. Honors Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3033.

## CIED 3053. The Emerging Adolescent. 3 Hours.

This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)

## CIED 3103. Children and Adolescent Literature. 3 Hours.

A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

## CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.

A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

## CIED 3113. Emergent Literacy. 3 Hours.

An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years.
Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.
CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.
An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

CIED 3453. Developmental Literacy. 3 Hours.
A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

## CIED 3453H. Honors Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.
CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.

Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

## CIED 4003. Elementary Seminar. 3 Hours.

This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)

## CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.

This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)

CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours. Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.

CIED 4123. Literacy Assessment and Interventions in the Elementary Classroom. 3 Hours
An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours. This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.

A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4163. Senior Project. 3 Hours.

This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

CIED 4173. Student Teaching. 3 Hours.
Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

CIED 4183. Instruction and Assessment of Writing. 3 Hours.
Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours. Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.

CIED 4285. Teaching Experience. 5 Hours.
The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)
CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4403. Understanding Cultures in the Classroom. 3 Hours.

This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities. Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

CIED 4413. Acquiring a Second Language. 3 Hours.
The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)
CIED 4423. Teaching English as a Second Language. 3 Hours.
This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

## CIED 4433. The Moral Mind in Action. 3 Hours.

The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

## CIED 4443. Moral Courage. 3 Hours.

Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Spring)

## CIED 4463. Culture and Learning. 3 Hours.

Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)

CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.
Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)
CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours. This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)
CIED 4533. Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

## CIED 4953. Assessment for English Learners. 3 Hours.

This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)
CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901H, and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.
CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.
CIED 499VH. Honors Special Topics in Curriculum and Instruction Education. 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## Communication Disorders and Occupational Therapy (CDOT)

Fran Hagstrom
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272 Epley Center for Health Professions
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fhagstr@uark.edu
Speech and Hearing Clinic

Epley Center for Health Professions
606 N. Razorback Road
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The Department of Communication Disorders and Occupational Therapy offers an undergraduate major in communication sciences and disorders that leads to the B.S. degree and prepares students for graduate studies (master's level) in speech-language pathology and/or the professional doctorate in audiology. The minimum requirements for all students in the college are listed under general studies (p. 698).

The department also offers graduate programs in communication sciences and disorders (http://catalog.uark.edu/graduatecatalog/ programsofstudy/communicationdisorderscdis/) and occupational therapy (http://catalog.uark.edu/graduatecatalog/programsofstudy/clinical-occupational-therapy/).

## Requirements for B.S. in Communication Sciences and Disorders

Admission to the B.S. degree program in Communication Sciences and Disorders is competitive and consists of a three-stage process. Students must apply for formal admission and be accepted to the undergraduate B.S. degree program in Communication Sciences and Disorders prior to taking junior- and senior-level classes in the major.

## Stage I: Pre-Communication Sciences and Disorders (PCDIS)

All students declaring a major in communication sciences and disorders are accepted as tentative candidates to the undergraduate program and assigned the pre-communication code - PCDIS.

The PCDIS program includes:

1. Complete all program pre-requisites courses.
2. Obtain a minimum cumulative grade-point average of 3.0 on all college level coursework.
3. Complete the following courses with a "C" or better: ENGL 1013 and ENGL 1023, MATH 1203 or equivalent, and COMM 1313.
4. Obtain passing scores on the Core Academic Skills for Educator: Math, Reading, and Writing sections of the Praxis Core Exam.

Students who do not meet admission criteria for the B.S. degree program in communication sciences and disorders in any given year may reapply in subsequent years.

## Stage II: Admission to the Communication Sciences and Disorders Program (CDIS)

Admission to the Communication Sciences and Disorders Program is competitive and occurs after completion of all Pre-Communication Sciences and Disorders requirements and prior to the beginning of the fall semester of the junior year.

Applications to the Communication Sciences and Disorders (CDIS) program must be submitted by January 30th.

The application process includes:

1. Submission of Communication Sciences and Disorders Application Form, Letter of Intent, and Curriculum Guide Form.
2. Submission of transcripts for all coursework
3. Submission of passing score on Math, Reading, and Writing sections of Praxis Core Exam
4. Satisfactory completion of an admission interview with designated faculty

As a result of the competitive process, not all applicants meeting the minimum requirements will be admitted to the program.

## Stage III: Requirements for Program Continuation and Completion

1. Maintain a minimum cumulative GPA of 3.0.
2. In order to enroll in CDIS 4003 Clinical Practicum: Undergraduate, students must have an overall GPA of 3.0 in the following courses: CDIS 2253, CDIS 3123, CDIS 3213, CDIS 3223, CDIS 3203, CDIS 4223 and a "B" in CDIS 3233. Clinical Practice is an elective for undergraduates and is taken for course credit hours, not a grade.
3. Meet all university requirements for graduation.

## Requirements for Communication Sciences and Disorders (CDIS)

State Minimum Core
Of which Communication Sciences and Disorders requires the following specific courses:

| BIOL 1543 | Principles of Biology (ACTS Equivalency = BIOL |
| :--- | :--- |
| \& BIOL 1541L | 1014 Lecture) |
|  | and Principles of Biology Laboratory (ACTS |
|  | Equivalency = BIOL 1014 Lab) (or higher level) |

PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)

ANTH 1023 Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013)
Select one of the following:
PHYS 1023 Physics and Human Affairs
\& PHYS 1021L and Physics and Human Affairs Laboratory (or higher level)
PHYS 2013 College Physics I (ACTS Equivalency = PHYS \& PHYS 2011L 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab) (or higher level)
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = \& CHEM 1071LCHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) (or higher level)
Program specific course requirements for Communication
Sciences and Disorders - 9 hours total
Select one of the following: 3

| ENGL 2003 | Advanced Composition |  |
| :---: | :--- | :--- | :--- |
| ENGL 2013 | Essay Writing |  |
| ENGL 3053 | Technical and Professional Writing (ACTS <br>  <br> Equivalency = ENGL 2023) |  |
| CDIS 498VH | Honors Communication Disorders Thesis/Project ${ }^{1}$ |  |
| COMM 1313 | Public Speaking (ACTS Equivalency $=$ SPCH <br> 1003) | 3 |
| STAT 2303 | Principles of Statistics (ACTS Equivalency = MATH <br> 2103) | 3 |

Communication Sciences and Disorders Major Requirements (42 hours)
CDIS 2253 Introduction to Communicative Disorders 3
CDIS 3103 Introduction to Audiology 3

| CDIS 3213 | Anatomy and Physiology of the Speech <br> Mechanism | 3 |
| :--- | :--- | ---: |
| CDIS 3123 | Normal Phonology and Articulatory Process <br> (Normal Phonology and Articulatory Processes) | 3 |
| CDIS 3203 | Articulation Disorders | 3 |
| CDIS 3223 | Language Development in Children | 3 |
| CDIS 3233 | Introduction to Clinical Practice | 3 |
| CDIS 3253 | Cultural Diversity in Communication Disorders | 3 |
| CDIS 4133 | Introduction to Aural Rehabilitation | 3 |
| CDIS 4253 | Neurological Bases of Communication | 3 |
| CDIS 4273 | Communication Behavior and Aging | 3 |
| CDIS 4213 | Introduction to Speech and Hearing Science | 3 |
| CDIS 4183 | Clinical Assessment of Speech and Language | 3 |
|  | Disorders | 3 |
| CDIS 4223 | Language Disorders in Children | $\mathbf{3 4}$ |
| Electives |  | $\mathbf{1 2 0}$ |

1 Option only for students successfully completing Honors Program

## Communication Sciences and Disorders B.S. Eight-Semester Plan

All CDIS students are accepted as tentative candidates and thus not eligible for the eight-semester degree plan. Students must apply for formal admission to the undergraduate B.S. degree program in CDIS prior to taking junior- and senior-level classes in the major. However, students who qualify to finish a degree in four years can follow the suggested order of classes below.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) | 3 |  |
| Satisfies General Education Outcome 3.4: <br> BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory <br> $(\text { ACTS Equivalency }=\text { BIOL } 1014 \mathrm{Lab})^{4}$ | 4 |  |
| U.S. History or Government State Minimum Core | 3 |  |
| Elective | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$ |  | 3 |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcome 1.2 and 5.1) |  | 3 |
| Electives |  | 6 |
| Year Total: | 16 | 15 |


| Second Year |  |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ANTH 1023 Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013) (Satisfies General Education Outcome 3.3) ${ }^{2}$ | 3 |  |
| CDIS 2253 Introduction to Communicative Disorders | 3 |  |
| PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3) ${ }^{2}$ | 3 |  |
| Choose one science/lab from the following (Satisfies General Education Outcome 3.4): | 4 |  |
| PHYS 1023 Physics and Human Affairs \& PHYS 1021L Physics and Human Affairs Laboratory ${ }^{4}$ |  |  |
| CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) \& CHEM 1071L Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) ${ }^{4}$ |  |  |
| PHYS 2013 College Physics I (ACTS Equivalency = PHYS 2014 Lecture) \& PHYS 2011L College Physics I Laboratory $(\text { ACTS Equivalency }=\text { PHYS } 2014 \text { Lab })^{4}$ |  |  |
| Elective | 3 |  |
| STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103) (Satisfies General Education Outcome 2.1) |  | 3 |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ |  | 3 |
| Fine Arts/Humanities State Minimum Core <br> (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$ |  | 3 |
| Electives |  | 6 |
| Year Total: | 16 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| Process |  |  |
| CDIS 3213 Anatomy and Physiology of the Speech Mechanism | 3 |  |
| CDIS 3223 Language Development in Children | 3 |  |
| CDIS 4273 Communication Behavior and Aging | 3 |  |
| Elective | 3 |  |
| CDIS 3203 Articulation Disorders |  | 3 |
| CDIS 3233 Introduction to Clinical Practice |  | 3 |
| CDIS 4223 Language Disorders in Children |  | 3 |
| ENGL 2003 Advanced Composition or ENGL 2013 Essay Writing |  | 3 |
| or ENGL 3053 Technical and Professional Writing (ACTS Equivalency = ENGL 2023) |  |  |
| or CDIS 498VH Honors Communication Disorders |  |  |
| Thesis/Project |  |  |
| Elective |  | 3 |
| Year Total: | 15 | 15 |


| Fourth Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| CDIS 3103 Introduction to Audiology | 3 |  |
| CDIS 4253 Neurological Bases of Communicatio | 3 |  |
| CDIS 4213 Introduction to Speech and Hearing Science | 3 |  |
| Electives (Recommend: CDIS 4003 Clinical Practicum: Undergraduate) | 4 |  |
| CDIS 3253 Cultural Diversity in Communication Disorders (Satisfies General Education Outcome 4.1, 4.2, and 6.1) |  | 3 |
| CDIS 4133 Introduction to Aural Rehabilitation |  | 3 |
| CDIS 4183 Clinical Assessment of Speech and Language Disorders |  | 3 |
| Electives |  | 6 |
| Year Total: | 13 | 15 |
| Total Units in Sequence: |  | 120 |
| ${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89 \%2F1XG8924jwOx8pTlw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89 \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections. <br> ${ }^{2}$ Required Social Science Core for CDIS majors. <br> ${ }^{3}$ CDIS 498VH: Option only for students successfully completing Honors Program. <br> ${ }^{4}$ or higher level |  |  |

## Faculty

Acurio, Danielle D., Ph.D. (Rocky Mountain University), B.S. (Louisiana State University), B.S. (Louisiana Tech University), Clinical Assistant Professor, 2023.
Bowers, Andrew L., Ph.D. (University of Tennessee Health Science Center), M.A., B.A. (University of Tennessee), Associate Professor, 2012, 2019.

Bowers, Lisa Marie, Ph.D. (University of Tennessee Health Science Center), M.A., B.A. (Louisiana State University), Associate Professor, 2012, 2019.
Danley, Jessica, M.S. (Tennessee State University), B.S. (University of North Texas), Clinical Instructor, 2021.
Frazier, Kimberly Frances, Ph.D. (University of South Carolina-
Columbia), M.S., B.S.E. (University of Arkansas), Associate Professor, 2007, 2013.
Glade, Rachel E., Ph.D. (University of Arkansas), M.S. (University of Arkansas for Medical Sciences), M.A. (University of Arkansas), B.S.
(University of Arkansas at Little Rock), Clinical Associate Professor, 2015, 2017.

Haghighi, Mohammad, Ph.D. (Ohio University), Assistant Professor, 2019.

Hagstrom, Fran W., Ph.D. (Clark University), M.S. (University of Texas Health Science Center-Houston), M.A. (St. Louis University), B.A.
(Southwest Baptist University), Associate Professor, 2002, 2008.
Holyfield, Christine E., Ph.D. (Pennsylvania State University), M.A.
(University of Kansas), B.S. (Central Michigan University), Associate 3 Professor, 2017, 2022.

Hux, Glenda, O.T.D. (Boston University), B.S. (University of Mississippi Medical Center), Assistant Professor, 2023.

University), Associate Professor, 2017.
Muriithi, Bernard, Ph.D. (Otto von Guericke University), M.A. (University of Southern California), M.A. (Kenyatta University), B.A. (Kenyatta University), Assistant Professor, 2023.
Muriithi, Jennifer, O.T.D. (University of Utah), M.S. (Grand Canyon University), M.A. (University of Southern California), B.A. (Baylor University), Clinical Assistant Professor, 2023.
Salter, Kandy S.L., O.T.D. (University of Kansas), M.S. (University of Central Arkansas), Clinical Assistant Professor, 2018.
Troillett, Amanda, O.T.D. (Washington University St. Louis), B.A.
(University of Cincinnati), Clinical Assistant Professor, 2021.

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 CDIS 2253. Introduction to Communicative Disorders. 3 Hours.An introductory course which surveys the professional interests of speech-language pathology and audiology with specific attention to the general recognition and classification of disorders of speech, language, and hearing, and general trends in rehabilitation. Consideration given to the classroom teacher's involvement in communication disorders. (Typically offered: Fall and Spring)

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## Disorders. 3 Hours.

This course introduces students to the research process in the field of communication sciences and disorders. Prerequisite: Acceptance into the COEHP Honors Program and instructor consent. (Typically offered: Spring)

## CDIS 3103. Introduction to Audiology. 3 Hours.

Introduction to the basic concepts for administering and interpreting hearing tests, including the anatomy and physiology of the auditory system, disorders of the ear, and techniques for administering and interpreting basic pure tone threshold tests. Corequisite: PHYS 1023 and PHYS 1021L, PHYS 2013 and PHYS 2011L or CHEM 1073 and CHEM 1071L. Pre- or Corequisite: CDIS 3213. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall and Spring)

## CDIS 3103H. Honors Introduction to Audiology. 3 Hours.

Introduction to the basic concepts for administering and interpreting hearing tests, including the anatomy and physiology of the auditory system, disorders of the ear, and techniques for administering and interpreting basic pure tone threshold tests. Corequisite: PHYS 1023 and PHYS 1021L, PHYS 2013 and PHYS 2011L or CHEM 1073 and CHEM 1071L. Pre- or Corequisite: CDIS 3213. Prerequisite: CDISBS major and honors standing, or departmental consent. (Typically offered: Fall and Spring)
This course is equivalent to CDIS 3103.
CDIS 3123. Normal Phonology and Articulatory Process. 3 Hours.
Analysis of the English speech sounds as a basis for speech improvement; physiological positions and movements; acoustic qualities and transcription in the international phonetic alphabet. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)

CDIS 3203. Articulation Disorders. 3 Hours.
A study of the definition, etiology, pathology, and treatment procedures of problems of articulation. Prerequisite: CDIS 3123, CDIS 3213 and CDISBS major or departmental consent. (Typically offered: Spring)
CDIS 3213. Anatomy and Physiology of the Speech Mechanism. 3 Hours. Structure and function of the organic mechanisms responsible for speech and language. Pre or Corequisite: BIOL 1543 and BIOL 1541L or higher. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall and Spring)

## CDIS 3223. Language Development in Children. 3 Hours.

Study of typical development of speech and language functions for communicative purposes in children from infancy to early school-age years, including the major components of language as well as the social, cognitive, biological and cultural factors related to language acquisition. Pre- or Corequisite: PSYC 2003. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)

CDIS 3223H. Honors Language Development in Children. 3 Hours.
Study of typical development of speech and language functions for communicative purposes in children from infancy to early school-age years, including the major components of language as well as the social, cognitive, biological, and cultural factors related to language acquisition. Pre- or Corequisite: PSYC 2003. Prerequisite: Honors candidacy and CDISBS major or departmental consent. (Typically offered: Fall)
This course is equivalent to CDIS 3223.

## CDIS 3233. Introduction to Clinical Practice. 3 Hours.

An introduction to the various aspects of clinical operations including technical and interpersonal relationship skills necessary for case management and a survey of professional standards. Pre- or Corequisite: COMM 1313, CDIS 3223, and CDIS 3213. Prerequisite: CDISBS major or departmental consent. (Typically offered:

## Fall and Spring)

## CDIS 3233H. Honors Introduction to Clinical Practice. 3 Hours.

An introduction to the various aspects of clinical operations including technical and interpersonal relationship skills necessary for case management and a survey of professional standards. Pre- or Corequisite: COMM 1313, CDIS 3223, and CDIS 3213. Prerequisite: Honors standing and CDISBS major or departmental consent. (Typically offered: Fall and Spring)
This course is equivalent to CDIS 3233.
CDIS 3253. Cultural Diversity in Communication Disorders. 3 Hours.
An introduction to various cultures, customs, and professional standards in healthrelated fields that helps to develop intercultural communication skills necessary to manage the increasingly diverse caseloads of health-related professionals. Pre- or Corequisite: COMM 1313. Prerequisite: CDISBS major or departmental consent. (Typically offered: Spring)
CDIS 3901H. Honors Communication Disorders Thesis Tutorial. 1 Hour. Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CDISBS major. (Typically offered: Fall, Spring and Summer)

## CDIS 3923H. Honors Colloquium. 3 Hours.

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in speech or dramatic art). (Typically offered: Irregular) May be repeated for degree credit.
CDIS 399VH. Honors Course. 1-6 Hour.
Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

CDIS 4003. Clinical Practicum Undergrad. 3 Hours.
Entry-level training in speech-language clinical practicum activities. This course is taken for satisfactory or unsatisfactory credit. Students are paired with a patient(s) at the UA Speech and Hearing Clinic to provide speech-language therapy while being supervised by a licensed and certified speech-language pathologist. The schedule for this course varies based on patient availability. Students are required to be on campus to provide clinical services (including session preparation) and to complete follow-up meetings with the instructor to discuss clinical practice and paperwork. Prerequisite: Admitted to the Communication Sciences and Disorders (CDISBS) major, CDIS 3213, CDIS 3223 and CDIS 3233, plus satisfactory completion of specific program requirements for admission to clinical practice. (Typically offered: Fall, Spring and Summer)

## CDIS 4003H. Honors Clinical Practicum Undergrad. 3 Hours.

Entry-level training in speech-language clinical practicum activities. This course is taken for satisfactory or unsatisfactory credit. Prerequisite: Honors standing, admitted to the Communication Sciences and Disorders (CDISBS) major, CDIS 3213, CDIS 3223 and CDIS 3233, plus satisfactory completion of specific program requirements for admission to clinical practice. (Typically offered: Fall and Spring)
This course is equivalent to CDIS 4003.

## CDIS 4133. Introduction to Aural Rehabilitation. 3 Hours.

Study of the technique used in the rehabilitation of speech and language problems of the hearing impaired including the role of amplification, auditory training, and speech reading in rehabilitation. Prerequisite: CDIS 3103. (Typically offered: Spring)

CDIS 4183. Clinical Assessment of Speech and Language Disorders. 3 Hours. Study of the basic diagnostic procedures used in speech-language pathology. Emphasis is placed on the clinical processes of assessment, including criteria for test selection, techniques in test administration, and interpretation of test. Pre- or Corequisite: Prior coursework in CDIS and ANTH 1023. Prerequisite: CDISBS major or departmental consent. (Typically offered: Spring)
CDIS 4213. Introduction to Speech and Hearing Science. 3 Hours.
Study of the acoustic structure of oral speech and the auditory skills underlying speech perception. Prerequisite: CDIS 3203, CDIS 3213, CDIS 3123 and its lab component and CDISBS major or departmental consent. Pre- or Corequisite: MATH 1203 or higher. (Typically offered: Fall and Spring)
CDIS 4223. Language Disorders in Children. 3 Hours.
Study of disorders of language acquisition and usage in children and adolescents, with emphasis upon the nature, assessment, and treatment of such disorders. Prerequisite: CDIS 3223 and CDISBS major or departmental consent. (Typically offered: Spring)

## CDIS 4223H. Honors Language Disorders in Children. 3 Hours.

Study of disorders of language acquisition and usage in children and adolescents, with emphasis upon the nature, assessment, and treatment of such disorders. Prerequisite: CDIS 3223 and CDISBS major and honors standing or departmental consent. (Typically offered: Spring)
This course is equivalent to CDIS 4223.

## CDIS 4253. Neurological Bases of Communication. 3 Hours.

A study of the structures and functions of the central and peripheral nervous systems as they relate to human speech, language, and cognition. Prerequisite: CDIS 3213 and CDISBS major or departmental consent. (Typically offered: Fall)

## CDIS 4253H. Honors Neurological Bases of Communication. 3 Hours.

A study of the structures and functions of the central and peripheral nervous systems as they relate to human speech, language, and cognition. Prerequisite: CDIS 3213, honors standing, and CDISBS major or departmental consent. (Typically offered:
Fall)
This course is equivalent to CDIS 4253.

CDIS 4273. Communication Behavior and Aging. 3 Hours.
Study of the effects upon communication of normal aspects of the aging process, from early adulthood throughout the lifespan. Changes in speech, language, and hearing functioning are identified; common alterations in communicative disorders commonly associated with advanced age are discussed. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)

CDIS 4273H. Honors Communication Behavior and Aging. 3 Hours.
Study of the effects upon communication of normal aspects of the aging process, from early adulthood throughout the lifespan. Changes in speech, language, and hearing functioning are identified; common alterations in communicative disorders commonly associated with advanced age are discussed. Prerequisite: CDISBS major and honors standing, or departmental consent. (Typically offered: Fall) This course is equivalent to CDIS 4273.

CDIS 490V. Special Problems. 1-3 Hour.
Special problems. Prerequisite: Advanced standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CDIS 498VH. Honors Communication Disorders Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CDISBS major, and CDIS 3901H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## Communication Sciences and Disorders (CDIS)

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An undergraduate major in communication sciences and disorders leads to the B.S. degree and prepares students for graduate studies (master's level) in speech-language pathology and/or the professional doctorate in audiology. The minimum requirements for all students in the college are listed under general studies (p. 698).

Admission to the B.S. Major Degree Program in Communication Sciences and Disorders is competitive and consists of a three-stage process. Students must apply for formal admission and be accepted to the undergraduate B.S. degree program in Communication Sciences and Disorders prior to taking junior- and senior-level classes in the major.

## Stage I: Pre-Communication Sciences and Disorders (PCDIS)

All students declaring a major in communication sciences and disorders are accepted as tentative candidates to the undergraduate program and assigned the pre-communication code - PCDIS.

The PCDIS program includes:

1. Complete all program pre-requisites courses.
2. Obtain a minimum cumulative grade-point average of 3.0 on all college level coursework.
3. Complete the following courses with a "C" or better: ENGL 1013 and ENGL 1023, MATH 1203 or equivalent, and COMM 1313.
4. Obtain passing scores on the Core Academic Skills for Educator: Math, Reading, and Writing sections of the Praxis Core Exam.

Students who do not meet admission criteria for the B.S. degree program in communication sciences and disorders in any given year may reapply in subsequent years.

## Stage II: Admission to the Communication Sciences and Disorders Program (CDIS)

Admission to the Communication Sciences and Disorders Program is competitive and occurs after completion of all Pre-Communication Sciences and Disorders requirements and prior to the beginning of the fall semester of the junior year.

Applications to the Communication Sciences and Disorders (CDIS) program must be submitted by January 30th.

The application process includes:

1. Submission of Communication Sciences and Disorders Application Form, Letter of Intent, and Curriculum Guide Form.
2. Submission of transcripts for all coursework
3. Submission of passing score on Math, Reading, and Writing sections of Praxis Core Exam
4. Satisfactory completion of an admission interview with designated faculty

As a result of the competitive process, not all applicants meeting the minimum requirements will be admitted to the program.

## Stage III: Requirements for Program Continuation and Completion

1. Maintain a minimum cumulative GPA of 3.0.
2. In order to enroll in CDIS 4003 Clinical Practicum: Undergraduate, students must have an overall GPA of 3.0 in the following courses: CDIS 2253, CDIS 3123, CDIS 3213, CDIS 3223, CDIS 3203, CDIS 4223 and a " $B$ " in CDIS 3233. Clinical Practice is an elective for undergraduates and is taken for course credit hours, not a grade.
3. Meet all university requirements for graduation.

## Requirements for Communication Sciences and Disorders (CDIS)

State Minimum Core
Of which Communication Sciences and Disorders requires the following specific courses:

BIOL 1543 Principles of Biology (ACTS Equivalency $=$ BIOL \& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) (or higher level)
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)

ANTH 1023 Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013)
Select one of the following:
PHYS 1023 Physics and Human Affairs
\& PHYS 1021L and Physics and Human Affairs Laboratory (or higher level)


Fine Arts/Humanities State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$
Electives
Year Total: 16

| Third Year | Fall |
| :--- | ---: |
| CDIS 3123 Normal Phonology and Articulatory | 3 |
| Process |  |
| CDIS 3213 Anatomy and Physiology of the Speech | 3 |
| Mechanism |  |
| CDIS 3223 Language Development in Children | 3 |
| CDIS 4273 Communication Behavior and Aging | 3 |
| Elective | 3 |
| CDIS 3203 Articulation Disorders |  |
| CDIS 3233 Introduction to Clinical Practice |  |
| CDIS 4223 Language Disorders in Children |  |
| ENGL 2003 Advanced Composition |  |
| or ENGL 2013 Essay Writing |  |
| or ENGL 3053 Technical and Professional Writing |  |
| (ACTS Equivalency = ENGL 2023) |  |
| or CDIS 498VH Honors Communication Disorders |  |
| Thesis/Project |  |
| Elective |  |
| Year Total: | 15 |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| CDIS 3103 Introduction to Audiology | 3 |  |
| CDIS 4253 Neurological Bases of Communication | 3 |  |
| CDIS 4213 Introduction to Speech and Hearing | 3 |  |
| Science | 4 |  |
| Electives (Recommend: CDIS 4003 Clinical |  |  |
| Practicum: Undergraduate) |  | 3 |
| CDIS 3253 Cultural Diversity in Communication |  |  |
| Disorders (Satisfies General Education Outcome |  | 3 |
| 4.1, 4.2, and 6.1) |  | 3 |
| CDIS 4133 Introduction to Aural Rehabilitation |  | 6 |
| CDIS 4183 Clinical Assessment of Speech and |  | 6 |
| Language Disorders |  |  |
| Electives | 13 | 15 |
| Year Total: |  |  |

## Total Units in Sequence:

${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu
\%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{2}$ Required Social Science Core for CDIS majors.
${ }^{3}$ CDIS 498VH: Option only for students successfully completing Honors Program.
${ }^{4}$ or higher level

Bowers, Andrew L., Ph.D. (University of Tennessee Health Science Center), M.A., B.A. (University of Tennessee), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2012, 2019.
Bowers, Lisa Marie, Ph.D. (University of Tennessee Health Science
Center), M.A., B.A. (Louisiana State University), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2012, 2019.
Frazier, Kimberly Frances, Ph.D. (University of South CarolinaColumbia), M.S., B.S.E. (University of Arkansas), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2007, 2013.
Glade, Rachel E., Ph.D. (University of Arkansas), M.S. (University of Arkansas for Medical Sciences), M.A. (University of Arkansas), B.S. (University of Arkansas at Little Rock), Clinical Associate Professor, Department of Communication Disorders and Occupational Therapy, 2015, 2017.
Haghighi, Mohammad, Ph.D. (Ohio University), Assistant Professor, Department of Communication Disorders and Occupational Therapy, 2019.

Hagstrom, Fran W., Ph.D. (Clark University), M.S. (University of Texas Health Science Center-Houston), M.A. (St. Louis University), B.A. (Southwest Baptist University), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2002, 2008.
Holyfield, Christine E., Ph.D. (Pennsylvania State University), M.A. (University of Kansas), B.S. (Central Michigan University), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2017, 2022.

## Courses

## CDIS 2253. Introduction to Communicative Disorders. 3 Hours.

An introductory course which surveys the professional interests of speech-language pathology and audiology with specific attention to the general recognition and classification of disorders of speech, language, and hearing, and general trends in rehabilitation. Consideration given to the classroom teacher's involvement in communication disorders. (Typically offered: Fall and Spring)

CDIS 2903H. Honors Introduction to Research in Communication Sciences and Disorders. 3 Hours.
This course introduces students to the research process in the field of communication sciences and disorders. Prerequisite: Acceptance into the COEHP Honors Program and instructor consent. (Typically offered: Spring)
CDIS 3103. Introduction to Audiology. 3 Hours.
Introduction to the basic concepts for administering and interpreting hearing tests,
includingtheanatomy and physiologn of the auditary system, disorders of the ear, and techniques for administering and interpreting basic pure tone threshold tests. Corequisite: PHYS 1023 and PHYS 1021L, PHYS 2013 and PHYS 2011L or CHEM 1073 and CHEM 1071L. Pre- or Corequisite: CDIS 3213. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall and Spring)

CDIS 3103H. Honors Introduction to Audiology. 3 Hours.
Introduction to the basic concepts for administering and interpreting hearing tests, including the anatomy and physiology of the auditory system, disorders of the ear, and techniques for administering and interpreting basic pure tone threshold tests. Corequisite: PHYS 1023 and PHYS 1021L, PHYS 2013 and PHYS 2011L or CHEM 1073 and CHEM 1071L. Pre- or Corequisite: CDIS 3213. Prerequisite: CDISBS major and honors standing, or departmental consent. (Typically offered: Fall and Spring)
This course is equivalent to CDIS 3103.
CDIS 3123. Normal Phonology and Articulatory Process. 3 Hours.
Analysis of the English speech sounds as a basis for speech improvement; physiological positions and movements; acoustic qualities and transcription in the international phonetic alphabet. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)
CDIS 3203. Articulation Disorders. 3 Hours.
A study of the definition, etiology, pathology, and treatment procedures of problems of articulation. Prerequisite: CDIS 3123, CDIS 3213 and CDISBS major or departmental consent. (Typically offered: Spring)
CDIS 3213. Anatomy and Physiology of the Speech Mechanism. 3 Hours. Structure and function of the organic mechanisms responsible for speech and language. Pre or Corequisite: BIOL 1543 and BIOL 1541L or higher. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall and Spring)

## CDIS 3223. Language Development in Children. 3 Hours.

Study of typical development of speech and language functions for communicative purposes in children from infancy to early school-age years, including the major components of language as well as the social, cognitive, biological and cultural factors related to language acquisition. Pre- or Corequisite: PSYC 2003.
Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)
CDIS 3223H. Honors Language Development in Children. 3 Hours.
Study of typical development of speech and language functions for communicative purposes in children from infancy to early school-age years, including the major components of language as well as the social, cognitive, biological, and cultural factors related to language acquisition. Pre- or Corequisite: PSYC 2003. Prerequisite: Honors candidacy and CDISBS major or departmental consent. (Typically offered: Fall)
This course is equivalent to CDIS 3223.

## CDIS 3233. Introduction to Clinical Practice. 3 Hours.

An introduction to the various aspects of clinical operations including technical and interpersonal relationship skills necessary for case management and a survey of professional standards. Pre- or Corequisite: COMM 1313, CDIS 3223, and CDIS 3213. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall and Spring)
CDIS 3233H. Honors Introduction to Clinical Practice. 3 Hours.
An introduction to the various aspects of clinical operations including technical and interpersonal relationship skills necessary for case management and a survey of professional standards. Pre- or Corequisite: COMM 1313, CDIS 3223, and CDIS 3213. Prerequisite: Honors standing and CDISBS major or departmental consent. (Typically offered: Fall and Spring)
This course is equivalent to CDIS 3233.
CDIS 3253. Cultural Diversity in Communication Disorders. 3 Hours.
An introduction to various cultures, customs, and professional standards in healthrelated fields that helps to develop intercultural communication skills necessary to manage the increasingly diverse caseloads of health-related professionals. Pre- or Corequisite: COMM 1313. Prerequisite: CDISBS major or departmental consent. (Typically offered: Spring)

CDIS 3901H. Honors Communication Disorders Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CDISBS major. (Typically offered: Fall, Spring and Summer)

## CDIS 3923H. Honors Colloquium. 3 Hours.

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in speech or dramatic art). (Typically offered: Irregular) May be repeated for degree credit.

## CDIS 399VH. Honors Course. 1-6 Hour.

Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

## CDIS 4003. Clinical Practicum Undergrad. 3 Hours.

Entry-level training in speech-language clinical practicum activities. This course is taken for satisfactory or unsatisfactory credit. Students are paired with a patient(s) at the UA Speech and Hearing Clinic to provide speech-language therapy while being supervised by a licensed and certified speech-language pathologist. The schedule for this course varies based on patient availability. Students are required to be on campus to provide clinical services (including session preparation) and to complete follow-up meetings with the instructor to discuss clinical practice and paperwork. Prerequisite: Admitted to the Communication Sciences and Disorders (CDISBS) major, CDIS 3213, CDIS 3223 and CDIS 3233, plus satisfactory completion of specific program requirements for admission to clinical practice. (Typically offered: Fall, Spring and Summer)

## CDIS 4003H. Honors Clinical Practicum Undergrad. 3 Hours.

Entry-level training in speech-language clinical practicum activities. This course is taken for satisfactory or unsatisfactory credit. Prerequisite: Honors standing, admitted to the Communication Sciences and Disorders (CDISBS) major, CDIS 3213, CDIS 3223 and CDIS 3233, plus satisfactory completion of specific program requirements for admission to clinical practice. (Typically offered: Fall and Spring)
This course is equivalent to CDIS 4003.

## CDIS 4133. Introduction to Aural Rehabilitation. 3 Hours.

Study of the technique used in the rehabilitation of speech and language problems of the hearing impaired including the role of amplification, auditory training, and speech reading in rehabilitation. Prerequisite: CDIS 3103. (Typically offered: Spring)
CDIS 4183. Clinical Assessment of Speech and Language Disorders. 3 Hours. Study of the basic diagnostic procedures used in speech-language pathology. Emphasis is placed on the clinical processes of assessment, including criteria for test selection, techniques in test administration, and interpretation of test. Pre- or Corequisite: Prior coursework in CDIS and ANTH 1023. Prerequisite: CDISBS major or departmental consent. (Typically offered: Spring)
CDIS 4213. Introduction to Speech and Hearing Science. 3 Hours.
Study of the acoustic structure of oral speech and the auditory skills underlying speech perception. Prerequisite: CDIS 3203, CDIS 3213, CDIS 3123 and its lab component and CDISBS major or departmental consent. Pre- or Corequisite: MATH 1203 or higher. (Typically offered: Fall and Spring)
CDIS 4223. Language Disorders in Children. 3 Hours.
Study of disorders of language acquisition and usage in children and adolescents, with emphasis upon the nature, assessment, and treatment of such disorders. Prerequisite: CDIS 3223 and CDISBS major or departmental consent. (Typically offered: Spring)

## CDIS 4223H. Honors Language Disorders in Children. 3 Hours.

Study of disorders of language acquisition and usage in children and adolescents, with emphasis upon the nature, assessment, and treatment of such disorders.
Prerequisite: CDIS 3223 and CDISBS major and honors standing or departmental consent. (Typically offered: Spring)
This course is equivalent to CDIS 4223.

CDIS 4253. Neurological Bases of Communication. 3 Hours.
A study of the structures and functions of the central and peripheral nervous systems as they relate to human speech, language, and cognition. Prerequisite: CDIS 3213 and CDISBS major or departmental consent. (Typically offered: Fall)

CDIS 4253H. Honors Neurological Bases of Communication. 3 Hours.
A study of the structures and functions of the central and peripheral nervous systems as they relate to human speech, language, and cognition. Prerequisite: CDIS 3213, honors standing, and CDISBS major or departmental consent. (Typically offered: Fall)
This course is equivalent to CDIS 4253.
CDIS 4273. Communication Behavior and Aging. 3 Hours.
Study of the effects upon communication of normal aspects of the aging process, from early adulthood throughout the lifespan. Changes in speech, language, and hearing functioning are identified; common alterations in communicative disorders commonly associated with advanced age are discussed. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)

CDIS 4273H. Honors Communication Behavior and Aging. 3 Hours.
Study of the effects upon communication of normal aspects of the aging process, from early adulthood throughout the lifespan. Changes in speech, language, and hearing functioning are identified; common alterations in communicative disorders commonly associated with advanced age are discussed. Prerequisite: CDISBS major and honors standing, or departmental consent. (Typically offered: Fall) This course is equivalent to CDIS 4273.

CDIS 490V. Special Problems. 1-3 Hour.
Special problems. Prerequisite: Advanced standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CDIS 498VH. Honors Communication Disorders Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CDISBS major, and CDIS 3901H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## Counseling, Leadership and Research Methods (CLRM)

Michael Stephen Hevel<br>Department Head<br>100 Graduate Education Building<br>479-575-4924<br>hevel@uark.edu (\%20hevel@uark.edu)

The Department of Counseling, Leadership and Research Methods offers an undergraduate major leading to a B.S.E. in Human Resource Development (p. 792) as well as an undergraduate minor in Human Resource Development (p. 794).

At the graduate level, the department also offers an M.S. with an emphasis in speech-language pathology, M.S. and Ed.D. in higher education (http://catalog.uark.edu/graduatecatalog/ programsofstudy/highereducation/), M.S. and Ed.D. in human resource development (http://catalog.uark.edu/graduatecatalog/programsofstudy/ humanresourceandworkforcedevelopmenteducation/), and an M.S. and Ph.D. in counselor education (http://catalog.uark.edu/graduatecatalog/ programsofstudy/counseloreducation/).

Blisard, Paul, Ed.D. (University of Arkansas), M.C., B.S., B.S. (Southwest Missouri State University), Clinical Assistant Professor, 2014.
Charkasova, Aynur, Ph.D., M.S. (Southern Illinois University, Carbondale), B.A. (Azerbaijan University of Languages), Teaching Assistant Professor, 2021.

Christian, David, Ph.D., M.S. (University of North Texas), B.A. (University of Texas at Dallas), Associate Professor, 2015, 2021.
Grover, Kenda Shea, Ed.D. (University of Arkansas), M.S., B.A. (Northeastern State University), Associate Professor, 2003, 2018.
Hevel, Michael Stephen, Ph.D. (University of lowa), M.A. (Bowling Green State University), B.A. (University of Kansas), Associate Professor, 2012, 2017.

Higgins, Kristin Kay, Ph.D., M.S. (University of Arkansas), B.A. (Vanderbilt University), Associate Professor, 2006, 2014.
Hughes, Claretha, Ph.D. (Virginia Polytechnic Institute and State University), M.S. (North Carolina State University), M.B.A. (University of Arkansas), B.A. (Clemson University), Professor, 2004, 2017.
Kacirek, Kit, Ed.D., M.Ed. (University of Arkansas), B.S. (University of Texas), Associate Professor, 1997, 2007.
Liang, Xinya, Ph.D. (Florida State University), B.S. (Zhejiang Gongshang University, China), Associate Professor, 2014, 2021.
Lo, Wen-Juo, Ph.D., M.A. (Arizona State University), B.S. (SooChow University), Associate Professor, 2008, 2014.
Lofton, Barbara A., Ed.D. (Grambling State University), M.A. (University of Iowa), B.S. (Jackson State University), Assistant Professor, 1996.
Lundeen, Lindsay, Ph.D. (University of Georgia), M.A. (Wake Forest University), B.S. (Kennesaw State University), Assistant Professor, 2023.
Mamiseishvili, Ketevan, Ph.D., M.A. (University of Missouri-Columbia),
B.A. (Akaki Tsereteli State University), Professor, 2008, 2017.

McCray, Suzanne, Ph.D. (University of Tennessee), M.A., B.A.
(University of Arkansas), Associate Professor, 2010.
Miller, Michael T., Ed.D. (University of Nebraska), M.S., B.A. (Southern Illinois University), Professor, 2003, 2005.
Murry, John, Ed.D., J.D., M.B.A., B.S.B.A., B.S. (University of Arkansas), Associate Professor, 1993, 1999.
Perryman, Kristi Leann, Ph.D. (University of Arkansas), M.S., B.S. (Southwest Missouri State University), Associate Professor, 2014, 2022.
Popejoy, Erin O., Ph.D. (University of Texas-San Antonio), M.A. (Texas State University), B.A. (Case Western Reserve University), Assistant Professor, 2015.
Roessger, Kevin, Ph.D., M.S., B.A. (University of Wisconsin-Milwaukee), Associate Professor, 2016, 2019.
Samuels, Mandel G., M.B.A. (University of Arkansas), B.A. (Oklahoma State University), Clinical Assistant Professor, 2012, 2018.
Shelton, Leslie Jo, Ph.D. (Michigan State University), M.Ed., B.A. (Ohio University), Associate Professor, 2014, 2018.
Williams, Brent Thomas, Ph.D. (University of Illinois, UrbanaChampaign), M.S. (University of Texas Southwestern Medical School), B.A. (Austin College), Associate Professor, 2002, 2008.

Zhang, Jihong, Ph.D. (University of lowa), M.S. (University of Kansas), B.A. (Soochow University), Assistant Professor, 2023.

## Curriculum and Instruction (CIED)

Ed Bengtson
Department Head
216 Peabody Hall
479-575-4209
Email: egbengts@uark.edu
Curriculum and Instruction Website (https://cied.uark.edu/)
The Department of Curriculum and Instruction sponsors initial teacher licensure programs in the areas of career and technical education (p. 704), elementary education (p. 765), childhood education (p. 711) and special education (p. 818). The department also offers additional licensure plans in ESL, gifted and talented, special education and selected other areas (please see College Web Site licensure link).

The Special Education Program also offers a Graduate Certificate in Autism Spectrum Disorders (ASD) as well as a Graduate Certificate in STEM education for Childhood Education candidates.

Five teacher licensure majors also lead to Bachelor of Arts in Teaching degrees: English Education (p. 771), French Education (p. 780), German Education (p. 786), Social Sciences Education (p. 806) and Spanish Education (p. 812). Additional secondary school licensure programs are made available with the cooperation of the Department of Health Science, Kinesiology, Recreation, and Dance; the Department of Rehabilitation, Human Resources and Communication Disorders; the Fulbright College of Arts and Sciences; and the Dale Bumpers College of Agricultural, Food and Life Sciences.

The department offers a non-licensure program in educational studies (p. 745) for students wishing to focus on general theory and practice of learning and teaching. This major gives students the cognitive ability to apply teaching strategies to a variety of employers in private sector businesses, nonprofit organizations, and community agencies.

The department also offers both a minor and a certificate of proficiency in STEM Education (p. 822), both of which are open to students in STEM fields.

## A

Airola, Denise T., Ph.D., M.S. (University of Arkansas), B.S. (University of New York), Assistant Professor, 2013.

## B

Beasley, Jennifer G., Ed.D. (University of Virginia), M.A. (Wichita State University), B.A. (Kansas State University), Clinical Associate Professor, 2009, 2018.
Beck, Dennis E., Ph.D. (University of Florida), B.S. (Pennsylvania State University), Associate Professor, 2010, 2016.
Bell, Karmen V., M.Ed. (Indiana Wesleyan University), Clinical Instructor, 2015.

Bengtson, Ed, Ph.D. (University of Georgia), Ed.S. (George Washington University), M.A. (California State University-Sacramento), B.S. (Pennsylvania State University), Associate Professor, 2010, 2016. Blair, Alissa, Ph.D. (University of Wisconsin-Madison), M.E.D. (University of Notre Dame), B.A. (Saint Mary's College), Assistant Professor, 2020.
Bowles, Freddie A., Ph.D., M.A. (University of Arkansas), B.A. (Arkansas State University), Associate Professor, 2004, 2013.
Brady, Kevin P., Ph.D. (University of Illinois-Champaign-Urbana), M.A. (Columbia University), B.A. (Binghamton University), Professor, 2014, 2020.

Burgin, Stephen, Ph.D., Ed.S., M.Ed., B.S. (University of Florida), Associate Professor, 2014, 2020.
Burks, Lizette Anita, Ed.D. (University of Kansas), Instructor, 2019.
C
Carter, Vinson R., Ph.D., M.A.T., B.S. (University of Arkansas), Associate Professor, 2008, 2019.
Collet, Vicki S., Ph.D. (State University of New York at Buffalo), M.A. (University of Northern Colorado), B.A. (University of Utah), Professor, 2012, 2023.
Collins, Kathleen, Ph.D., M.A., B.A. (University of California-Santa Barbara), Professor, 2002, 2012.
Connors, Sean P., Ph.D. (The Ohio State University), M.S. (Elmira College), B.A. (SUNY Geneseo), Associate Professor, 2010, 2016.

## D

Daugherty, Michael, Ed.D., M.S., B.S. (Oklahoma State University), Distinguished Professor, 2005.

Diaz, Eva I., Ph.D., M.Ed. (Pennsylvania State University), B.A. (University of Puerto Rico), Research Associate, 2014.

## E

Elsass, Angela Carlton, Ed.D., Ed.S. (University of Arkansas), M.Ed. (Harding University), B.S.E. (University of Central Arkansas), Clinical Associate Professor, 2010, 2016.
Endacott, Jason L., Ph.D., M.S. (University of Kansas), B.S. (Kansas State University), Associate Professor, 2011, 2016.

## G

Goering, Christian Z., Ph.D., M.S. (Kansas State University), B.A. (Washburn University), Professor, 2007, 2018.
Greene, Aleza R.S., Ph.D., M.A. (Brandeis University), B.A. (Tufts University), Clinical Assistant Professor, 2006.

## H

Howard, John E., Ed.D. (John Hopkins University), M.A. (Bowie State University), Lecturer, 2020.
Hutchins, Rhett J., Ph.D. (University of Georgia), M.Ed., B.S. (Clemson University), Clinical Associate Professor, 2014, 2020.
I
Imbeau, Marcia B., Ph.D. (University of Connecticut), M.Ed. (University of Arkansas at Little Rock), B.A. (Hendrix College), Professor, 1991, 2013. J
Johnson-Carter, Charlene M., Ph.D. (Emory University), M.B.A. (Atlanta University), M.Ed., B.A. (University of Cincinnati), Associate Professor, 1992, 1998.
Jones, Clinton G., Ed.D. (Arkansas Tech University), Ed.S. (Harding University), Assistant Professor, 2019.

## K

Kent, Laura B., Ph.D. (University of Wisconsin-Madison), M.S. (Purdue University Calumet), B.S. (Purdue University), Associate Professor, 2006. King, Bonnie, M.A.T., B.S.E. (University of Arkansas), Clinical Instructor, 2015.

Kucharczyk, Suzanne, Ed.D. (Columbia University Teacher's College), M.Ed., B.S. (University of Illinois-Urbana-Champaign), Associate Professor, 2014, 2020.
L
Lasater, Kara A., Ed.D. (University of Arkansas), Ed.S., M.S. (Pittsburg State University), B.A. (Drury University), Associate Professor, 2014, 2023.

Lee, Yi-Jung, Ph.D. (University of Georgia), M.S. (National Taiwan Normal University), B.Ed. (National Taitung University), Assistant Professor, 2019.
Lopez, Trish A., M.A.T. (Arkansas Tech University), Research Associate, 2020.

Lorah, Elizabeth R., Ph.D., M.S.Ed., B.A. (Temple University), Associate Professor, 2013, 2018.

## M

Mayes, Eric, Ph.D. (Howard University), Associate Professor, 2019.
McComas, Kim Krusen, Ph.D. (University of Arkansas), M.A. (West Chester University of Pennsylvania), B.A. (University of Arizona), Teaching Associate Professor, 2012, 2020.
McComas, William, Ph.D. (University of lowa), M.S. (West Chester University of Pennsylvania), B.S. (Lock Haven University of Pennsylvania), Distinguished Professor, Parks Family Professor of Science Education, 2006, 2018.
Mears, Derrick, Ph.D. (University of Arkansas), M.S., B.S. (University of Central Missouri), Teaching Associate Professor, 2014.

Mounts, Denise Ann, Ed.D. (Saint Louis University), B.S.E. (Northwest Missouri State University), Clinical Associate Professor, 2005, 2016.
Murphy, Cheryl Ann, Ed.D., M.A., B.A. (West Virginia University), Professor, 1996, 2017.

## 0

Orr, Betsy, Ed.D., M.Ed. (University of Arkansas), B.A. (University of Arkansas at Monticello), Associate Professor, 1989, 2000.
Owen, Donna S., M.S., B.S., B.A. (University of Arkansas), Clinical Instructor, 2005.

## P

Penner-Williams, Janet, Ed.D., M.Ed., B.S.E. (University of Houston), Associate Professor, 2005, 2016.
Pijanowski, John C., Ph.D., M.S. (Cornell University), B.A. (Brown University), Professor, 2007, 2010.
R
Raley, Sheida K., PH.D. (University of Kansas), M.Ed. (Vanderbilt University), B.S. (Boston University), Assistant Professor, 2023.
Ralston, Christine R., Ph.D. (Purdue University), M.Ed., B.S. (Indiana Wesleyan University), Clinical Associate Professor, 2015, 2020.

## S

Scaif, Jacquelyn, M.E. (Harding University), B.A. (Arkansas State University), Instructor, 2023.
Smith, Christy L., Ed.D., Ed.S., M.S.E., B.S.E. (University of Arkansas), Clinical Assistant Professor, 2019.
Speight, Dana Renee, Ph.D. (University of Arkansas), Assistant Professor, 2023.

T
Turner, Ronna L., Ph.D. (University of Illinois-Urbana-Champaign),
M.S.E. (Missouri State University), B.S.E. (Southwest Missouri State University), Professor, 1997, 2018.
W
Ward, Peggy, Ph.D. (University of Arkansas), M.S. (Texas A\&M
University), B.S.Ed. (Southern Arkansas University), Clinical Assistant Professor, 2010, 2016.
Wissehr, Cathy, Ed.D. (University of Missouri-Columbia), M.N.S.Ed., B.S. (Southeast Missouri State University), Clinical Associate Professor, 2009, 2016.

Y
Young, Heather D., Ph.D. (University of Arkansas), M.S. (University of Tennessee), B.S. (Arkansas Tech University), Associate Professor, 2007, 2019.

## Courses

CIED 1003. Introduction to Technology in Education. 3 Hours.
A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning. (Typically offered: Fall, Spring and Summer)

## CIED 1013. Introduction to Education. 3 Hours.

Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. An 18-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings is incorporated in this introductory course to education. (Typically offered: Fall and Spring)

CIED 2083. Innovation and Creativity in Daily Practice. 3 Hours.
Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 2943. Foundations of Language and Literacy. 3 Hours.

A foundational study of language and literacy with an emphasis on content knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)

## CIED 3013. Development and Learning Theories in the K-6 Classroom. 3

Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
CIED 3013H. Honors Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions.
Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3013.

## CIED 3023. Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3023H. Honors Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.

## CIED 3033. Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3033H. Honors Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer) This course is equivalent to CIED 3033.

## CIED 3053. The Emerging Adolescent. 3 Hours.

This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)

CIED 3103. Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

## CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.

A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

CIED 3113. Emergent Literacy. 3 Hours.
An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years.
Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

## CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

CIED 3453. Developmental Literacy. 3 Hours.
A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

## CIED 3453H. Honors Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.
CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.

Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

CIED 4003. Elementary Seminar. 3 Hours.
This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)

## CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.

This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)

CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours. Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.

Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.

## CIED 4123. Literacy Assessment and Interventions in the Elementary

 Classroom. 3 Hours.An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

## CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours.

This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.
A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours.
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4163. Senior Project. 3 Hours.

This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

## CIED 4173. Student Teaching. 3 Hours.

Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members.
Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 4183. Instruction and Assessment of Writing. 3 Hours.

Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours.
Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.

## CIED 4285. Teaching Experience. 5 Hours.

The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4403. Understanding Cultures in the Classroom. 3 Hours.

This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities.
Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

CIED 4413. Acquiring a Second Language. 3 Hours.
The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)

CIED 4423. Teaching English as a Second Language. 3 Hours.
This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)
CIED 4433. The Moral Mind in Action. 3 Hours.
The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

CIED 4443. Moral Courage. 3 Hours.
Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of $\mathrm{K}-16$ character education programs are discussed. (Typically offered: Spring)

CIED 4463. Culture and Learning. 3 Hours.
Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)

## CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.

Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)

CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours. This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

## CIED 4533. Reading Comprehension Through Children's and Adolescent

 Literature. 3 Hours.An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

## CIED 4953. Assessment for English Learners. 3 Hours.

This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)

CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.
CIED 499VH. Honors Special Topics in Curriculum and Instruction Education. 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## Drama Education (DRED)

The Department of Curriculum and Instruction offers a Bachelor of Arts in Teaching degree that will prepare students in the humanities with the pedagogical skills, the content knowledge, and the dispositions for teaching and learning in 21st century classrooms in the area of Drama. University students are prepared to teach drama to students in grades $7-12$ by understanding how to plan effective instruction, design a classroom environment of respect and rapport, implement objectives, strategies, and assessments for learning, and become a professional in the field through participation in associations and continued learning opportunities.

## Requirements for B.A.T. in Drama Education Stage I: Pre-Drama Education (PDRED)

Complete all 46 hours of program pre-requisites for each content area (see below).

1. Obtain a GPA of 3.0 or better on UA coursework.
2. Complete all content and pedagogy courses with a 'C' or better.
3. Complete a background check.

## Stage II: Admission to the B.A.T. Program

Admission to the Bachelor of Arts in Teaching program (B.A.T.) occurs the semester after the candidate has completed all pre-B.A.T. requirements, including the first three courses in education - CIED 1013, CIED 1003, and CIED 2083 - prior to a student entering one of the individual programs of study the following fall term. The B.A.T. program is competitive, and meeting the minimum requirements does not guarantee admission to the program. Applications to the B.A.T. program must be submitted by deadlines stated on the Office of Teacher Education (https:// teacher-education.uark.edu/admissions/) website.

The application process includes:

1. Students must complete the application to teacher education (see the Teacher Education Application Fee (https://catalog.uark.edu/ undergraduatecatalog/feeandcosts/othergeneralfees/)) through the Teacher Education Office during the time period stated on the Office of Teacher Education website. This includes completion and passing the criminal background check.*
2. Submission of B.A.T. application.
3. Submission of writing sample to content area faculty.
4. Submission of transcripts for all coursework.

* Another background check will be required prior to graduation in order to be eligible for licensure.


## Stage III: Requirements for Program Continuation and Internship

1. Maintain a cumulative GPA of 3.0 or better.
2. All professional education courses and content courses must have a grade of 'C' or better (except SEED 3283 below). No teaching methods courses may be taken as self-paced (correspondence) courses.

## Stage IV: Requirements for Internship Semester (spring, senior year) and Program Completion

All students in the B.A.T. program must complete the following requirements prior to being admitted to the spring semester of their senior year.

1. Students must earn a 'B' or better in the fall semester, senior year SEED 3283 practicum course.
2. Earn a cumulative GPA of 3.0 or better by the end of the fall semester, senior year. Students are not permitted to intern in the spring if the GPA requirement has not been met.
3. Students must have taken the appropriate Praxis II-Content Knowledge exam to be admitted to the spring semester, senior year.
4. Candidate must complete a successful internship admission interview with B.A.T. faculty. Note these interviews are scheduled with all senior students during the fall semester.
5. Satisfactorily complete the internship/student teaching experience that has been approved by the Director of Field Placement.

All students seeking licensure in the state of Arkansas are subject to a criminal background check. Background checks can take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities at least six months in advance of graduation (or six months prior to applying for a teaching license). Arkansas will not grant a teaching license to anyone who has been convicted of a felony.

## Requirements for Drama Education Major

## Pre-Drama Education Requirements

State Minimum Core
Courses specifically required for the Drama Education B.A.T. program ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
Additional Pre-Drama Education requirements (9 hours) ${ }^{1}$

| CIED 1013 | Introduction to Education | 3 |
| :--- | :--- | :--- |
| CIED 1003 | Introduction to Technology in Education | 3 |
| CIED 2083 | Innovation and Creativity in Daily Practice | 3 |
| Education Requirements (32 hours) ${ }^{\mathbf{1}}$ |  |  |
| EDST 3223 | American Educational History | 3 |
| CIED 3033 | Classroom Learning Theory | 3 |
| CIED 4023 | Teaching in Inclusive Secondary Settings | 3 |
| CIED 4285 | Teaching Experience | 5 |


| CIED 4403 | Understanding Cultures in the Classroom | 3 |
| :---: | :---: | :---: |
| SEED 3283 | Teaching Experiences in Education | 3 |
| SEED 4022 | Classroom Management Concepts | 2 |
| SEED 4063 | Disciplinary and Interdisciplinary Literacies in Education | 3 |
| THTR 4703 | Theatre Education: Methods of Instruction | 3 |
| THTR 4713 | Theatre Education: Program Design and Leadership | 3 |
| THTR 4991 | Theatre Capstone | 1 |
| Drama Content (44 hours) ${ }^{1}$ |  |  |
| THTR 1223 | Introduction to Theatre | 3 |
| THTR 1313 | Stage Technology: Costumes and Makeup | 3 |
| THTR 1423 | Script Analysis | 3 |
| THTR 1323 | Stage Technology: Scenery and Lighting | 3 |
| THTR 2313 | Fundamentals of Theatrical Design | 3 |
| THTR 2683 | Acting II | 3 |
| THTR 3683 | Stage Management | 3 |
| THTR 3001 | Production Practicum ${ }^{2}$ | 2 |
| THTR 2473 | Voice and Speech for the Actor | 3 |
| THTR 4153 | Musical Theatre Performance | 3 |
| THTR 4233 | History of the Theatre I | 3 |
| THTR 3653 | Directing I | 3 |
| THTR 4333 | History of the Theatre II | 3 |
| 6 hrs THTR Upper Level Theatre Design chosen from the following: |  | 6 |
| THTR 3213 | Costume Design |  |
| THTR 3733 | Lighting Design |  |
| THTR 3903 | Makeup Design |  |
| THTR 4653 | Scene Design |  |
| THTR 4663 | Sound Design and Engineering |  |
| THTR 4833 | Scene Painting |  |

## Total Hours

${ }^{1}$ Complete all content and pedagogy courses with a 'C' or better, except for SEED 3283 which requires a 'B' or better.
${ }^{2}$ Major requires 2 enrollments of THTR 3001 to complete degree.

## Courses

## CIED 1003. Introduction to Technology in Education. 3 Hours.

A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning. (Typically offered: Fall, Spring and Summer)

## CIED 1013. Introduction to Education. 3 Hours.

Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. An 18-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings is incorporated in this introductory course to education. (Typically offered: Fall and Spring)

CIED 2083. Innovation and Creativity in Daily Practice. 3 Hours.
Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 2943. Foundations of Language and Literacy. 3 Hours.

A foundational study of language and literacy with an emphasis on content knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)

## CIED 3013. Development and Learning Theories in the K-6 Classroom. 3

Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 3013H. Honors Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3013.

## CIED 3023. Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3023H. Honors Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.

## CIED 3033. Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3033H. Honors Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer) This course is equivalent to CIED 3033.

## CIED 3053. The Emerging Adolescent. 3 Hours.

This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)

CIED 3103. Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

## CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.

A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

CIED 3113. Emergent Literacy. 3 Hours.
An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years.
Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

## CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

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Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

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A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

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A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.
CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.

Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

CIED 4003. Elementary Seminar. 3 Hours.
This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)

## CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.

This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)

CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours. Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.

Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.

## CIED 4123. Literacy Assessment and Interventions in the Elementary

 Classroom. 3 Hours.An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

## CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours.

This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.
A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours.
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4163. Senior Project. 3 Hours.

This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

## CIED 4173. Student Teaching. 3 Hours.

Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members.
Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 4183. Instruction and Assessment of Writing. 3 Hours.

Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours.
Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.
CIED 4285. Teaching Experience. 5 Hours.
The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4403. Understanding Cultures in the Classroom. 3 Hours.

This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities

Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

## CIED 4413. Acquiring a Second Language. 3 Hours.

The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English (Typically offered: Spring)

CIED 4423. Teaching English as a Second Language. 3 Hours.
This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4433. The Moral Mind in Action. 3 Hours.
The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

CIED 4443. Moral Courage. 3 Hours.
Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of $\mathrm{K}-16$ character education programs are discussed. (Typically offered: Spring)

## CIED 4463. Culture and Learning. 3 Hours.

Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)

## CIED 4483H. Honors Museum Matters: History, Practices, Culture and

 Controversy. 3 Hours.Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)

CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours. This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

CIED 4533. Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.

An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend $\mathrm{K}-6$ students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

## CIED 4953. Assessment for English Learners. 3 Hours.

This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)

CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.
CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

CIED 499VH. Honors Special Topics in Curriculum and Instruction Education.

## 1-3 Hour.

Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## Educational Studies (EDST)

The Department of Curriculum and Instruction offers both a bachelor's degree with two concentration options and a minor in Educational Studies.

The Bachelor of Science in Education in Educational Studies (B.S.E.) is a customizable degree for all students within the College of Education and Health Professions. It focuses on the general theory and practice of learning and teaching. This degree, in itself, does not include licensure. Students completing this program will have the cognitive ability to apply teaching strategies to a variety of employers such as private sector businesses, nonprofit organizations and community agencies. With additional training and licensure, students can also work in school settings.

## Requirements for B.S.E. in Educational Studies with Mixed Educational Environments Concentration

| State Minimum Core ${ }^{1}$ |  | 35 |
| :---: | :---: | :---: |
| PSYC 2003 | $\begin{aligned} & \text { General Psychology (ACTS Equivalency = PSYC } \\ & 1103)^{2} \end{aligned}$ |  |
| Educational Base Courses |  |  |
| CIED 1013 <br> or PHED 1003 <br> or EDST 2003 | Introduction to Education <br> The Physical Education Profession: An Overview Introduction to Educational Studies | 3 |
| CIED 3023 | Survey of Exceptionalities | 3 |
| CIED 3033 | Classroom Learning Theory | 3 |
| CNED 3053 or CNED 4003 | The Helping Relationship Classroom Human Relations Skills | 3 |
| or 3 hours elective if PARA |  |  |
| EDST 3113 | Legal Developments in Education | 3 |
| EDST 3203 | Multicultural Education Issues | 3 |
| EDST 3223 | American Educational History | 3 |
| EDST 3333 | Children's \& Young Adult Literature in Educational Settings | 3 |
| EDST 399V | Special Topics in Educational Studies | 3 |
| or EDST Program Coordinator-Approved Upper-Level Elective |  |  |
| EDST 4003 | Philosophy of Education | 3 |
| EDST 4113 | Teaching and Funding Outdoor \& Informal Education | 3 |


| EDST 4213 | Religion, Education, \& Religious Education | 3 |
| :---: | :---: | :---: |
| Elective Hours |  | 31 |
| Concentration h | rs (see below for specific courses) | 18 |
| Total Hours |  | 20 |
| ${ }^{1}$ For courses, go to the State Minimum Core (p. 81) requirements. 2 Pre-requisite for CIED 3033, CNED 3053, and CNED 4003. |  |  |
| Requirements for Mixed Educational Environments Concentration |  |  |
| Choose one of | following | 3 |
| CDIS 2253 | Introduction to Communicative Disorders |  |
| PBHL 2663 | Terminology for the Health Professions |  |
| RESM 2853 | Leisure and Society |  |
| HDFS 2603 | Rural Families and Communities |  |
| SCWK 2133 | Introduction to Social Work |  |
| Choose one of the following |  | 3 |
| HRDE 3123 | Career Development |  |
| PBHL 3443 | Introduction to Public Health |  |
| PBHL 3633 | First Responder-First Aid |  |
| PBHL 3643 | Public Health Program Planning and Evaluation |  |
| PBHL 3663 |  |  |
| PBHL 4643 | Multicultural Health |  |
| SCWK 3013 | Child Advocacy I: Perspectives on Child Maltreatment and Child Advocacy |  |
| SCWK 3193 | Human Diversity and Social Work |  |
| SCWK 3233 | Contemporary Issues in Juvenile Justice |  |
| SCWK 3633 | Child Welfare: 21st Century Perspectives |  |
| EDST 3913 | Formal Classroom Internship in Education | 3 |
| Or program approved upper level elective ${ }^{1}$ |  |  |
| EDST 3003 | Formative Readings for Cultural Education | 3 |
| EDST 3923 | Informal Based or Outdoor Internship in Education | 3 |
| Or program approved upper level elective ${ }^{1}$ |  |  |
| EDST 4933 | Capstone Seminar and Final Internship in Education ${ }^{2}$ | 3 |
| Total Hours |  | 18 |
| ${ }^{1}$ Approved electives include: AAST 4153, AAST 3123, ANTH 3213, ANTH 3123, ANTH 3263, ARED 3013, ARED 3103, CATE 3003, CATE 4073, CIED 4413, CIED 4463, COMM 3383, COMM 3433, ENGL 3103, ENGL 3263, HIST 3003, HIST 3033, JWST 4013, PBHL 3633, PHED 3203, PHED 3903, PHIL 3203, PHIL 4203, PHIL 4303, PLSC 3203, PSYC 3093, PSYC 3103, RESM 3023, RESM 3073, RESM 3093, SCWK 3233, SCWK 3633, SCWK 4143, SOCI 3193, SOCI 3223, SOCI 3263, SPED 4173, SPED 4413, SPED 4423, SPED 4463, SPED 4483, and STEM 4033 <br> ${ }^{2}$ EDST 4933 includes 100 hours of internship and 20 hours of coursework |  |  |

## Educational Studies B.S.E. With Mixed Educational Environments Concentration Eight-Semester Plan

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (https://provost.uark.edu/ policies/150000.php) for university requirements of the program.

| First Year | Fall |
| :--- | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |
| = ENGL 1013) (Satisfies General Education |  |
| Outcomes 1.1) |  |
| Mathematics - State Minimum Core (Satisfies | 3 |
| General Education Outcome 2.1) |  |
| Science - State Minimum Core w/lab (Satisfies | 4 |
| General Education Outcome 3.4) |  |
| Social Science - State Minimum Core (Satisfies | 3 |
| General Education Outcome 3.3) |  |
| Fine Arts/Humanities - State Minimum Core |  |
| (Satisfies General Education Outcome 3.1 or 3.2) |  |
| CIED 1013 Introduction to Education |  |
| or PHED 1003 The Physical Education Profession: |  |
| An Overview |  |
| or EDST 2003 Introduction to Educational Studies |  |
| ENGL 1023 Composition II (ACTS Equivalency |  |
| = ENGL 1023) (Satisfies General Education |  |
| Outcomes 1.1) |  |
| Social Sciences - State Minimum Core (Satisfies |  |
| General Education Outcome 3.3) |  |
| Humanities/Fine Arts - State Minimum Core |  |
| (Satisfies General Education Outcome 3.2 or 3.1) |  |
| Elective |  |
| Year Total: |  |

Second Year Fall

PSYC 2003 General Psychology (ACTS 3
Equivalency = PSYC 1103)
Science - State Minimum Core w/lab (Satisfies
General Education Outcome 3.4)
U.S. History or Government - State Minimum Core

3
(Satisfies General Education Outcome 4.2)
Elective
5
EDST 3003 Formative Readings for Cultural Education
Choose one of the following
CDIS 2253 Introduction to Communicative Disorders
PBHL 2663 Terminology for the Health
Professions
RESM 2853 Leisure and Society
HDFS 2603 Rural Families and Communities
SCWK 2133 Introduction to Social Work

## Elective

Year Total:
15

| Third Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| EDST 3113 Legal Developments in Education | 3 |  |
| EDST 3203 Multicultural Education Issues | 3 |  |
| EDST 3333 Children's \& Young Adult Literature in Educational Settings | 3 |  |
| CNED 3053 The Helping Relationship or CNED 4003 Classroom Human Relations Skills | 3 |  |
| CIED 3033 Classroom Learning Theory | 3 |  |
| EDST 3223 American Educational History |  | 3 |
| EDST 3913 Formal Classroom Internship in Education |  | 3 |
| Or Program Approved Upper Level Elective ${ }^{1}$ |  |  |
| EDST 4113 Teaching and Funding Outdoor \& Informal Education |  | 3 |
| CIED 3023 Survey of Exceptionalities |  | 3 |
| Elective |  | 3 |
| Year Total: | 15 | 15 |


| Fourth Year | FallUnits <br> Spring |  |
| :--- | ---: | ---: |
| EDST 3923 Informal Based or Outdoor Internship | 3 |  |

General Education Outcome 5.1)
EDST 4933 Capstone Seminar and Final
Internship in Education (Satisfies General
Education Outcome 6.1) ${ }^{2}$
Elective

Units
Spring

Total Units in Sequence:
${ }^{1}$ Approved electives
include: AAST 4153, AAST 3123, ANTH 3213, ANTH 3123, ANTH 3263, ARED 3
${ }^{2}$ EDST 4933 includes 100 hours of internship and 20 hours of coursework

## Requirements for B.S.E. in Educational Studies with Para-Professional Transition Concentration

State Minimum Core ${ }^{1}$<br>PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) ${ }^{2}$

Educational Base Courses

| CIED 1013 | Introduction to Education | 3 |
| :--- | :--- | ---: |
| or PHED 1003 | The Physical Education Profession: An Overview |  |
| or EDST 2003 |  |  |
| Introduction to Educational Studies |  |  |$\quad 3$

## Total Hours

${ }^{1}$ For courses, go to the State Minimum Core (p. 81) requirements.
2 Pre-requisite for CIED 3033, CNED 3053, and CNED 4003.

Admission into the Concentration: This concentration is intended for para-professionals (or equivalent) in an Arkansas school district (or other related education provider). The nine hours of internship course credit, taken at the end of the degree, requires students to be at an educational site performing supervised para-pro related activities. Prior to admission to the concentration, applicants also must have completed a Para-Professional Associate Degree in Education or related field, OR have completed the following 60 hours of coursework (or equivalent):

- ENGL 1013 - Composition I
- ENGL 1023 - Composition II
- Mathematics - State Minimum Core
- Sciences - State Minimum Core w/Lab
- Social Sciences - State Minimum Core
- PSYC 2003 - General Psychology
- U.S. History or Government - State Minimum Core
- Fine Arts/Humanities - State Minimum Core
- CIED 1013 - Introduction to Education OR PHED 1003 - The Physical Education Profession OR EDST 2003 - Introduction to Educational Studies
- 22 hours of electives


## Para-Professional Transition Concentration

| EDST 3313 | Trauma Based Educational Practices | 3 |
| :--- | :--- | :--- |
| EDST 4033 | Understanding Professional Teaching Standards I | 3 |
| EDST 4043 | Understanding Professional Teaching Standards II | 3 |
| Internship |  | 9 |
| EDST 4993 | Para-Professional Internship (2 enrollments for a <br> total of 6 credit hours) |  |
| EDST 4933 | Capstone Seminar and Final Internship in <br>  <br>  <br> Education |  |

Total Hours

## Educational Studies B.S.E. with ParaProfessional Transition Concentration EightSemester Plan

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (https://provost.uark.edu/ policies/150000.php) for university requirements of the program.

| First Year | Fall | Units <br> Spring |
| :--- | :---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcomes 1.1)) |  |  |
| Mathematics - State Minimum Core (Satisfies <br> General Education Outcome 2.1) | 3 |  |
| Science - State Minimum Core w/lab (Satisfies <br> General Education Outcome 3.4) | 4 |  |
| Social Sciences - State Minimum Core (Satisfies <br> General Education Outcome 3.3) | 3 |  |
| Fine Arts/Humanities - State Minimum Core | 3 |  |

(Satisfies General Education Outcome 3.1 or 3.2)
CIED 1013 Introduction to Education
or PHED 1003 The Physical Education Profession:
An Overview
or EDST 2003 Introduction to Educational Studies
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) ((Satisfies General Education Outcome 1.1))
Social Sciences - State Minimum Core (Satisfies
General Education Outcome 3.3)
Humanities/Fine Arts - State Minimum Core
(Satisfies General Education Outcome 3.2 or 3.1)
Elective
Year Total: 16

Second Year Fall | Units |
| ---: |
| Spring |

PSYC 2003 General Psychology (ACTS 3
Equivalency = PSYC 1103) ((Satisfies General
Education Outcome 3.3))

| Science - State Minimum Core w/lab (Satisfies General Education Outcome 3.4) | 4 |  |
| :---: | :---: | :---: |
| U.S. History or Government - State Minimum Core (Satisfies General Education Outcome 4.2) | 3 |  |
| Elective | 5 | 3 |
| EDST 4033 Understanding Professional Teaching Standards I |  |  |
| EDST 4043 Understanding Professional Teaching Standards II |  | 3 |
| Elective |  | 915 |
| Year Total: | 15 |  |
| Third Year | Units |  |
|  | Fall | Spring |
| EDST 3113 Legal Developments in Education | 3 |  |
| EDST 3203 Multicultural Education Issues | 3 |  |
| EDST 3333 Children's \& Young Adult Literature in Educational Settings | 3 |  |
| EDST 3313 Trauma Based Educational Practices | 3 |  |
| CIED 3033 Classroom Learning Theory | 3 |  |
| EDST 3223 American Educational History |  | 3 |
| EDST 4113 Teaching and Funding Outdoor \& Informal Education |  | 3 |
| CIED 3023 Survey of Exceptionalities |  | 3 |
| EDST 4933 Capstone Seminar and Final Internship in Education |  | 3 |
| Elective |  | 6 |
| Year Total: | 15 | 18 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| EDST 4213 Religion, Education, \& Religious | 3 |  |
| Education |  |  |
| EDST 399V Special Topics in Educational Studies | 3 |  |
| EDST 4993 Para-Professional Internship ${ }^{1}$ | 3 |  |
| Elective | 9 |  |
| EDST 4003 Philosophy of Education |  | 3 |
| EDST 4993 Para-Professional Internship ${ }^{1}$ |  | 3 |
| Elective |  | 3 |
| Year Total: | 18 | 9 |

Total Units in Sequence: ..... 120
${ }^{1}$ Students must successfully complete two enrollments for degree completion.

## Minor in Educational Studies

The minor in Educational Studies is open to any majors interested in acquiring valuable knowledge in the complex field of education. Educational Studies approaches the entire field of education from a non-centered perspective examining a variety of educational systems where an interdisciplinary perspective is highly valued. Educational Studies is not a P-12 pedagogical or skills based training
program designed for the end goal of formalized P -12 classroom instruction.

The 15 -credit-hour minor in Educational Studies is not a teacher licensure program. These courses are designed to prepare a student and future graduate to understand how systems of education affect communities, states, and the nation in matters beyond teaching. A minor in Educational Studies can provide the necessary background exposure to future career or graduate work in the following areas: counseling, social work, ministry, teacher licensure via alternative certification, library/media services, educational technology, educational reform and policy, or higher education.

Students must achieve a minimum overall GPA of 2.0 for all coursework in the minor to be awarded the minor.

## Course Requirements

Choice of:
EDST 2003 Introduction to Educational Studies or 3000 level EDST or CIED course
EDST 3113 Legal Developments in Education 3
EDST 3223 American Educational History 3
Choice of: 3

EDST 399V Special Topics in Educational Studies
or any 3000 or 4000 level EDST course
EDST 4003 Philosophy of Education 3
Total Hours
15

## Courses

EDST 2003. Introduction to Educational Studies. 3 Hours.
The course explores the field of education through the lens of educational studies, a unique interdisciplinary association of looking at education as a function of society, psychology, politics, religion, and economic interests. This course introduces non-education field students to the difference between the various fields of study within education, including, but not limited to: instruction, curriculum, comparative education, multicultural education, informal education, content education, pedagogy, education policy, support services, and community education. No field observation hours are required for this course. (Typically offered: Fall and Summer)
EDST 3003. Formative Readings for Cultural Education. 3 Hours.
This course examines some of the historically important readings stemming from identification of the America Reads project produced by the Library of Congress (2014-2016). Special attention will be devoted to the understanding of the relevance of these historical documents and texts to the American identity. The course will focus on the role education plays in the creation of the current society through cultural transmission. The role of education through public schooling in the formations of citizens has been historically documented and deemed necessary under American political thought. This course is constructed to establish linkages of educational trends in the promotion of literacy and the popularization of popular cultural literature of the 18th, 19th, and 20th century that has shaped the social, economic, environmental, and political landscape that a citizen may navigate over their lifetime. (Typically offered: Spring)

EDST 3003H. Honors Formative Readings for Cultural Education. 3 Hours. This course examines some of the historically important readings stemming from identification of the America Reads project produced by the Library of Congress (2014-2016). Special attention will be devoted to the understanding of the relevance of these historical documents and texts to the American identity. The course will focus on the role education plays in the creation of the current society through cultural transmission. The role of education through public schooling in the formations of citizens has been historically documented and deemed necessary under American political thought. This course is constructed to establish linkages of educational trends in the promotion of literacy and the popularization of popular cultural literature of the 18th, 19th, and 20th century that has shaped the social, economic, environmental, and political landscape that a citizen may navigate over their lifetime. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to EDST 3003.

## EDST 3113. Legal Developments in Education. 3 Hours.

This lecture provides an overview of issues in the field of education coming out of legal developments in the United States over the last two centuries involving the legal basis for public schooling, Constitutional issues in public schools, and contract law governing private schooling. Special interest is paid to education legislation and case law on educational issues. (Typically offered: Fall)
EDST 3203. Multicultural Education Issues. 3 Hours.
The purpose of this course is to give pre-service educators an opportunity to explore various facets of multiculturalism and their implications for future practice. We will examine the impact of race, class, gender, sexual orientation, religion, and other aspects of social group identities on teaching and learning as they relate to contexts in multiple learning environments. While this course is broad in scope, the primary aim is to assist future educators in exploring what it means to be an educator in a society that is multicultural, within a vast educational system (public and private) which is stratified according to multiple factors. Students should not be in enrolled in EDST 3203 \& CIED 4403 during the same semester. (Typically offered: Fall)

## EDST 3223. American Educational History. 3 Hours.

This course is designed to offer a comprehensive study of the history of the American education system. Students completing this course will be able to document the diverse and often competing influences into what has become the public school structure, as well as, the second system of American schools, parochial schools, arising out of the schooling conflict of the 1880's. Starting with the development of literacy skills and the formation of township or colony schools, the linage of schooling will be investigated from the late 1600's to the present time. (Typically offered: Fall, Spring and Summer)

## EDST 3223H. Honors American Educational History. 3 Hours.

This course is designed to offer a comprehensive study of the history of the American education system. Students completing this course will be able to document the diverse and often competing influences into what has become the public school structure, as well as, the second system of American schools, parochial schools, arising out of the schooling conflict of the 1880's. Starting with the development of literacy skills and the formation of township or colony schools, the linage of schooling will be investigated from the late 1600's to the present time. Prerequisite: Honors standing. (Typically offered: Fall, Spring and Summer) This course is equivalent to EDST 3223.

## EDST 3313. Trauma Based Educational Practices. 3 Hours.

Socio-emotional learning and trauma-based classroom instruction are needed pre-professional knowledge bases for classroom teachers that shape classroom management practices and student-engagement relationships. This course focuses on identifying and understanding daily classroom interactions with students having previously experienced out-of-school trauma that manifests itself in classroom environment. This course is intended for teacher-educators to modify student relationship engagement and not intended for diagnosis or clinical practices. Prerequisite: EDSTBS-PARA major. (Typically offered: Fall)

EDST 3333. Children's \& Young Adult Literature in Educational Settings. 3 Hours.
This course provides a comprehensive overview of children's, adolescent, and young adult literature across educational settings, both formal and informal. Picture books, novels, informational texts, and the novelization of movies and vice versa for children and adolescent audiences will be explored. (Typically offered: Fall)

EDST 3913. Formal Classroom Internship in Education. 3 Hours.
The internship is a prearranged onsite work experience serving in an educationally related field. The formal classroom internship is taken after the completion of CIED 1013 and either along with or after the completion of CIED 3033. Locations have been selected by the EDST program and Office of Teacher Education. Internships my be served at a variety of public or private based educational services or agencies. The internship experience must include a minimum number of practical work hours (120), reflective journaling, mid-semester evaluation, and final report. All arrangements for internships are coordinated through the COEHP Office of Field Placement by the Director of Field Placement. State of Arkansas background checks may be required for individuals completing internships at locations serving populations of minors. Prerequisite: CIED 1013. Pre- or Corequisite: CIED 3033. (Typically offered: Fall and Spring)

## EDST 3923. Informal Based or Outdoor Internship in Education. 3 Hours.

The internship is a prearranged onsite work experience serving in an educationally related field. The informal/outdoor internship is taken during or after taking EDST 4113. Locations have been selected by the EDST program and Office of Teacher Education; during the summer, students may petition for a camp based informal experience that is outside of the typical semester offering. Internships my be served at a variety of public or private based educational services or agencies. The internship experience must include a minimum number of practical work hours (120), reflective journaling, mid-semester evaluation, and final report. All arrangements for internships are coordinated through the COEHP Office of Field Placement by the Director of Field Placement. State of Arkansas background checks may be required for individuals completing internships at locations serving populations of minors. Prerequisite: EDST 4113. Pre- or Corequisite: CIED 3033. (Typically offered: Spring and Summer)
EDST 399V. Special Topics in Educational Studies. 1-3 Hour.
Discussion and advanced studies on selected topics in educational studies. Special focus on recent and emerging topics in education. Junior (3000) level course offerings. Course may be repeated only for unique topic enrollments. (Typically offered: Irregular) May be repeated for up to 15 hours of degree credit.

EDST 399VH. Honors Special Topics in Educational Studies. 1-3 Hour. Discussion and advanced studies on selected topics in educational studies. Special focus on recent and emerging topics in education. Junior (3000) level course offerings. Each offering of EDST 399VH must be unique. Student may not repeat the same topic for degree credit multiple times. (Typically offered: Irregular) May be repeated for up to 15 hours of degree credit.
This course is equivalent to EDST 399V.

## EDST 4003. Philosophy of Education. 3 Hours.

This course provides a review of philosophical ideas in education and an introduction to research, methodologies, foundation theories in education. Students explore historical ideas in philosophy pertaining to education and how those ideas contribute to current educational practices. Students in the course learn about the nature of research, both theoretical and applied, and the process of developing future research based agendas. Prerequisite: Junior or senior standing. (Typically offered: Spring)

EDST 4003H. Honors Philosophy of Education. 3 Hours.
This course provides a review of philosophical ideas in education and an introduction to research, methodologies, foundation theories in education. Students explore historical ideas in philosophy pertaining to education and how those ideas contribute to current educational practices. Students in the course learn about the nature of research, both theoretical and applied, and the process of developing future research based agendas. Prerequisite: Honors standing and (junior or senior standing). (Typically offered: Spring)
This course is equivalent to EDST 4003.
EDST 4033. Understanding Professional Teaching Standards I. 3 Hours.
This course provides preparation and review for the required initial post-graduation licensure testing requirements mandated by the State of Arkansas. Currently these testing requirements are Pearson Education's Foundation of Reading, Educational Testing Services' Praxis Series Assessments: Core Academic Skills for Educators, Principles of Learning \& Teaching, and Specific Licensure Area Content Assessments. Prerequisite: EDSTBS-PARA major. (Typically offered: Fall)

EDST 4043. Understanding Professional Teaching Standards II. 3 Hours. This is the second course in the professional test preparation series. This course provides preparation and review for the required initial post-graduation licensure testing requirements mandated by the State of Arkansas. Currently these testing requirements are Pearson Education's Foundation of Reading, Educational Testing Services' Praxis Series Assessments: Core Academic Skills for Educators, Principles of Learning \& Teaching, and Specific Licensure Area Content Assessments. Prerequisite: EDSTBS-PARA major and EDST 4033. (Typically offered: Spring)

EDST 4113. Teaching and Funding Outdoor \& Informal Education. 3 Hours. In-depth exploration of natural/outdoors education and informal education and grant writing for education will be covered. Methods and techniques in the preparation and delivery of teaching in nontraditional instructional settings (informal education) will be developed. Course participants will be required to teach an outdoor and/or informal education class and participate in a collaborative grant application process. (Typically offered: Spring)

EDST 4213. Religion, Education, \& Religious Education. 3 Hours.
This course provides a comprehensive introduction on the influences of religion in education, particularly in relation to the dynamic of religion in public education in the United States. Students in the course learn about the nature of the study of religion, religious studies, and religious education, as well as the teaching of religion. Prerequisite: Junior or senior level standing. (Typically offered: Fall)

EDST 4933. Capstone Seminar and Final Internship in Education. 3 Hours. The capstone course provides students with a culminating experience for Educational Studies. The course provides an opportunity for students to develop a portfolio of their learning and to evaluate their overall program performance in preparation for completion of their degrees. This course contains 100 hours of internship experience and will serve as the final internship experience for EDSTBS majors. This course includes 20 hours of coursework along with the required internship experience. This course should only be enrolled in after the completion of EDST 3913 and EDST 3923 and during the students final year of coursework. All internship placements are arranged by the Office of Field Placement and the Director of Field Placement. Prerequisite: EDST 3913, EDST 3923, and senior standing. (Typically offered: Fall and Spring)

EDST 4993. Para-Professional Internship. 3 Hours.
120-hour field/formal classroom-based experience including lesson planning, classroom activity, classroom management, and reflective experience integration. Prerequisite: Admission into the EDSTBS-PARA major. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

## Eleanor Mann School of Nursing (NURS)

Jessie Casida

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Eleanor Mann School of Nursing Website (https://nurs.uark.edu/)
The Eleanor Mann School of Nursing contributes to the three purposes of the university: education, research and service. The mission of Eleanor Mann School of Nursing is to transform lives through nursing education and inspire leadership in nursing practice and academics to improve the health and well-being of society.

Professional nursing begins with a Bachelor of Science in Nursing (B.S.N.) degree. Nursing education offers a research base for nursing practice that promotes the ability of the nurse to effect change needed to improve health. In the study of professional nursing, the student builds on a planned general education for the academic disciplines and acquires theoretical and specific knowledge to meet health care needs of diverse clients in various settings. In addition, the curriculum provides opportunity for students with technical nursing education to expand their knowledge and scope of practice. The baccalaureate program establishes a foundation for graduate education in nursing and for continued personal and professional development.

Graduates of the pre-licensure B.S.N. program are eligible to apply to take the National Council Licensure Examination (NCLEX-RN) for licensure as a registered nurse (R.N.).

## Requirements for B.S.N. in Nursing Pre-Licensure B.S.N. Program (PNURS)

## Admission Policies

Conditional Admission to the Pre-Licensure B.S.N. Program
Students interested in nursing will be admitted to the University of Arkansas as pre-nursing majors. Admission to the Eleanor Mann School of Nursing requires an application in addition to the application to the University of Arkansas. In line with initiatives of the university and the College of Education and Health Professions, as well as the philosophy of the Eleanor Mann School of Nursing, a holistic admission process is utilized to enhance a diverse academic experience for all students and results in additional expertise in providing care to an increasingly diverse patient population. Admission is competitive, not all applicants who meet the minimum requirements will be admitted to the program.

- We value communication skills, leadership experience, initiative, community service, and clinical experience, as well as accomplishments in athletics, employment, and research. The school's goal is to recruit and educate a class which will serve the needs of a diverse population.
- We consider factors not reflected in the academic record, such as evidence of extracurricular achievement or work experience; evidence of having overcome social, economic, or physical barriers; evidence of exceptional motivation, maturity, or responsibility.

Conditional admission will be determined by the Eleanor Mann School of Nursing's faculty. To be eligible to apply, students must have a cumulative GPA of 3.0 or more.

The holistic admission process for the professional program of study is as follows:

1. Application to the Eleanor Mann School of Nursing completed. Please refer to current dates for the application window that can be located on our website. Please note that students need to apply almost a full year in advance of when they plan to start.
2. Students transferring from another nursing program must provide a letter from the nursing program indicating that they are eligible to return and are in good standing to be considered for admission.
3. Final transcripts will need to be submitted for any non-University of Arkansas coursework by the end of the application semester. (official dates on website)
4. Upon review of these transcripts, Nursing School faculty will review the following:

## Primary Academic Factors (50\% of total score)

1. $U$ of $A$ Cumulative GPA (for current $U$ of $A$ students) or Transfer Cumulative GPA (for transfer students) of 3.0 or more (GPA $\times 7$ ) $=u p$ to 28 points
2. Completion of 4 required science courses (see below) with at least a C grade in each. Points will be awarded as follows: 4 points for each course taken at the UA, and 4 points for $1^{\text {st }}$ attempt As and 2 points for first attempt Bs = up to 32 points
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency 4 \& CHEM 1071L = CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)
BIOL 2013 General Microbiology (ACTS Equivalency = \& BIOL 2011L BIOL 2004 Lecture) and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)
BIOL 2213 Human Physiology (ACTS Equivalency = BIOL 4
\& BIOL 2211L 2414 Lecture)
and Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab)
BIOL $2443 \quad$ Human Anatomy (ACTS Equivalency = BIOL 4 \& BIOL 2441L 2404 Lecture)
and Human Anatomy Laboratory (ACTS
Equivalency = BIOL 2404 Lab)
3. Admitted Honors Program students with 18 or more honors credit hours and a 3. 75 GPA $=5$ points
4. Successful completion of required* nursing prerequisite courses

- 20 points for $75 \%$ completion of the required* nursing prerequisite courses at UA excluding electives
- 10 points for $50 \%$ required* nursing prerequisite courses at UA excluding electives
- 25 points for previous Bachelor's degree
- 30 points for previous Master's degree (points awarded for highest degree)
- a. *Required nursing prerequisite courses include: English 6 credits, Mathematics/Statistics 6 credits, Sciences 16 credits, Fine Arts/Humanities 6 credits, U.S. History 3 credits, Social Sciences 9 credits, Pre-Nursing 6 credits.
- b. For students entering the University of Arkansas as freshmen, credits transferred in from high school dual enrollment or AP/IB credit will be counted in the required nursing prerequisite courses at the UA.
- Completion of the CASPER Tool (Computer-Based Assessment for Sampling Personal Characteristics):
- Collaboration
- Communication
- Empathy
- Ethics
- Motivation
- Problem solving
- Professionalism
- Resilience
- Self-awareness
- The student will be responsible for the testing and distribution fee. Full instructions on how to access this test can be found on the School of Nursing website.

Candidates are ranked in order of total score. The cohort will be selected by rank with the top tier (exact number to be admitted is to be determined by the department each term) invited for conditional admission to the program.

Students who are conditionally accepted into the nursing program must maintain a C or higher in all coursework.

## PNURS Requirements for Pre-Licensure Bachelor of Science in Nursing:

Science with Labs (8 hours) must include:
4 hours of CHEM including a lab (Must be CHEM 1073/
CHEM 1071L or higher) ${ }^{1}$
BIOL 2443 Human Anatomy (ACTS Equivalency = BIOL 2404
\& BIOL 2441L Lecture)
and Human Anatomy Laboratory (ACTS
Equivalency $=$ BIOL 2404 Lab) ${ }^{1,2}$
Fine Arts (3 hours) ${ }^{1}$
Humanities (3 hours) Select one of the following: ${ }^{1}$
PHIL 2003 Introduction to Philosophy (ACTS Equivalency = PHIL 1103)
or PHIL 210 : Introduction to Ethics (ACTS Equivalency = PHIL 1003)
or PHIL 220́Logic (ACTS Equivalency = PHIL 1003)
or PHIL 310:Ethics and the Professions
History/Government (3 hours) ${ }^{1}$
Social Sciences (9 hours) ${ }^{1}$
Additional General Studies
BIOL 2213 Human Physiology (ACTS Equivalency = BIOL 4
\& BIOL 2211L 2414 Lecture)
and Human Physiology Laboratory (ACTS
Equivalency = BIOL 2414 Lab) ${ }^{1}$

## Non-academic Factors (50\% of total score)

| BIOL 2013 <br> \& BIOL 2011L | General Microbiology (ACTS Equivalency = BIOL <br> 2004 Lecture) <br> and General Microbiology Laboratory (ACTS | 4 |
| :--- | :--- | ---: |
|  | Equivalency = BIOL 2004 Lab) |  |
| 1 |  |  |

1 Denotes required nursing pre-requisite courses.
${ }^{2}$ BIOL $1543 / \mathrm{BIOL} 1541 \mathrm{~L}$ is a prerequisite for BIOL 2013/BIOL 2011L and BIOL 2443/BIOL 2441L and may be used as part of the elective hours.

## Full Admission to the Pre-Licensure B.S.N. Program (NURSBSPLRN)

Full admission to the Eleanor Mann School of Nursing is contingent upon meeting all the conditional requirements and successfully meeting the following requirements:

1. All prerequisite coursework for a fall admission into the Professional Program of Study in Nursing must be completed by the end of the spring semester. All coursework for spring admission must be completed by the end of the fall semester prior to entering the Professional Program of Study in Nursing.
2. Maintain at least a $C$ or higher in all coursework.
3. Provide proof of all required clinical paperwork as requested by the school of nursing. Please note that a criminal background check and regular drug screens are required. (The most current clinical requirements can be located in the student handbook.)

## Requirements for the Bachelor of Science in Nursing Pre-Licensure Option (NURSBSPLRN)

Completion of all PNURS requirements
Professional Nursing Program (59 hours)
Role Development (Level I)

| NURS 3313 | Pharmacology in Nursing | 3 |
| :--- | :--- | :--- |
| NURS 3314 | Pathophysiology | 4 |
| NURS 3402 | Nursing Concepts: Older Adult | 2 |
| NURS 3422 | Nursing Concepts: Foundations of Professional | 2 |
|  | Practice |  |
| NURS 3424 | Professional Role Implementation I: Caregiver | 4 |
| NURS 3634 | Nursing Concepts: Adult Health and Illness I | 4 |
| NURS 3644 | Professional Role Implementation II: Caregiver | 4 |
| NURS 3742 | Nursing Concepts: Mental Health and Illness | 2 |


| NURS 3752 | Professional Role Implementation III: Caregiver | 2 |
| :--- | :--- | :--- |
| NURS 3842 | Foundations of Scientific Evidence in Nursing <br>  <br>  <br> Practice | 2 |
| Role Concentration (Level II) |  |  |
| NURS 4112 | Nursing Concepts: Teaching and Health Promotion | 2 |
| NURS 4154 | Nursing Concepts: Children and Family | 4 |
| NURS 4164 | Professional Role Implementation IV: Teacher | 4 |
| NURS 4242 | Leadership in Nursing | 2 |
| NURS 4252 | Professional Role Implementation V: Manager | 2 |
| NURS 4262 | Nursing Concepts: Adult Health and IIIness II | 2 |
| NURS 4442 | Nursing Concepts: Critical Care | 2 |
| NURS 4452 | Professional Role Implementation VI: Role <br>  <br> NURS 4603$\quad$Synthesis 2 <br> NURS 4613 Professional Role Implementation VII: Role <br>  Synthesis | 3 |
| NURS 4712 | Seminar in Nursing | 3 |
| NURS 4722 | Professional Role Implementation VIII: Role 2 <br>  Synthesis | 2 |

## Total Hours

The minimum number of hours required to receive a baccalaureate degree at the University of Arkansas is 120 semester hours. The nursing major is exempt from the eight-semester degree plan since the program is admission-based. There is no guarantee that a student meeting the minimal GPA requirement will be admitted. Please refer to the College of Education and Health Professions website for specific information related to the admission criteria.

## Progression, Withdrawal, and Dismissal

1. For progression in the nursing program, only grades of " C " or above will be accepted. Students who make less than a "C" may not progress into courses for which that course is a prerequisite until the course is repeated and the required minimum grade attained. Note that the Eleanor Mann School of Nursing uses the following grading scale and exam policy:
a. Grading Scale: $A=92-100 \% B=83-91 \% C=75-82 \% D=$ $62-74 \%$ F = below $62 \%$
b. Exam Policy: A $75 \%$ average on class exams is necessary to pass the course. Once this criterion is met, other course grades will be factored into the final grade.
2. If a student earns a "D", "F", or "W" in a course, the course may be repeated once. The course must be passed on the second attempt. If a student earns a second "D", "F", or "W" in any course, the student will be dismissed from the program and will not be eligible for readmission.
3. Students who do not pass the Dosage Calculation Exam per handbook policy, will be administratively withdrawn from the clinical course and associated co-requisite courses. This may lead to a delay in graduation and/or dismissal from the program. See handbook (https://nursing.uark.edu/) for details.
4. A positive background check may impede or halt the student's progression in the program and may impact clinical placement and eligibility for licensure. If a student is arrested during their program of study, the school of nursing should be notified immediately and the
student will become ineligible for clinical courses pending the outcome of an investigation and/or judicial process.

## Didactic/Professional Role Implementation Courses

1. A student who needs to repeat a course in which they were unsuccessful must submit a petition to the Student Affairs Committee in nursing and are encouraged to do so as soon as they are aware of the need to repeat a course. An academic success plan will be implemented upon approval as outlined by this committee.
2. Students will be readmitted on a space-available basis according to the following priority system:
Priority Groups for Placement in Required Clinical Courses
a. First Priority - Continuing full-time students in good academic standing.
b. Second Priority - Continuing part-time students in good academic standing.
c. Third Priority - Students repeating a course due to an academic or clinical failure or were administratively withdrawn with a "W" for failing the medication calculation test who were unable to repeat a course for one or more semesters.
d. Fourth Priority - Students repeating a course due to an academic or clinical failure or were administratively withdrawn with a "W" for failing the medication calculation test who were in the preceding semester.
3. Spaces in clinical courses are limited and tightly controlled by accreditation, the Arkansas State Board of Nursing, and clinical agency policies. Enrollment in Didactic courses is limited to space available. A student re-enrolling in a Professional Role Implementation Course (whether due to illness, course failure, or other reasons) will not be assured a clinical placement space in subsequent courses.
4. NOTE: Readmission will not be considered for any student dismissed from the School of Nursing who obtained a "D" or "F" in one nursing course and was unable to make a "C'" or better upon repeating this course. Also, a student dismissed from a Professional Role Implementation Course due to safety, ethical, or dishonesty issues will be administratively withdrawn from a course, and may be subject to administrative withdrawal from the School of Nursing following a full review. Readmission is not guaranteed to these students.
5. Students should note that any violation of the Eleanor Mann School of Nursing policies or Code of Ethics can result in course failure and/ or dismissal from the program without prior warnings (see Student Handbook).

## Readmission Policies

Any student whose enrollment in the professional program of study has been interrupted may seek readmission following the steps below:

1. Seek readmission into the University of Arkansas (if applicable).
2. Complete Readmission Application to the School of Nursing during the application periods. (Readmission is limited by space availability).
3. Readmission will not be considered for any student dismissed from the School of Nursing who obtained a "D" or "F" in one nursing course and was unable to make a "C" or better upon repeating this course or who was dismissed from a Professional Role Implementation Course due to safety, ethical, or dishonesty issues. Exceptions to this policy will be considered by the Student Affairs Committee in nursing on an individual basis.

## Exit Policies

1. Students must complete the requirements for the degree within five years of enrolling in the first upper-division nursing course. If the student does not complete the Professional Program of Study within the five-year limit, nursing credits must be reevaluated.
2. All University of Arkansas requirements must be met.

In addition to the program requirements, students must meet the university and college graduation requirements. This curriculum is subject to change to comply with national accreditation and the Arkansas State Board of Nursing Standards.

## Bachelor of Science in Nursing Pre-Licensure Option (NURSBS-PLRN)

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify to finish a degree in four years can follow the suggested order of classes below.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher) (Satisfies General Education Outcome 2.1) | 3 |  |
| Elective ${ }^{1}$ | 4 |  |
| Any Chemistry 1073/1071L or higher with lab (Satisfies General Education Outcome 3.4) | 4 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| Social Sciences State Minimum Core elective (Satisfies General Education Outcome 3.3) ${ }^{2}$ |  | 3 |
| U.S. History or Government State Minimum Core elective (Satisfies General Education Outcome 4.2) ${ }^{2}$ |  | 3 |
| Satisfies General Education Outcome 3.4: |  |  |
| BIOL 2443 Human Anatomy (ACTS Equivalency = BIOL 2404 Lecture) |  | 4 |
| \& BIOL 2441L Human Anatomy Laboratory (ACTS |  |  |
| Equivalency = BIOL 2404 Lab) |  |  |
| Elective |  | 3 |
| Year Total: | 14 | 16 |
| Second Year |  | Units |
|  | Fall | Spring |
| Social Sciences State Minimum Core elective (Satisfies General Education Outcome 3.3) ${ }^{2}$ | 3 |  |
| Fine Arts State Minimum Core elective (Satisfies General Education Outcome 3.1) ${ }^{2}$ | 3 |  |

PHIL 2003 Introduction to Philosophy (ACTS
Equivalency = PHIL 1103) (Satisfies General
Education Outcomes 3.2 and 5.1) ${ }^{2}$
or PHIL 2103 Introduction to Ethics (ACTS

> Equivalency = PHIL 1003)
or PHIL 2203 Logic (ACTS Equivalency $=$ PHIL 1003)
or PHIL 3103 Ethics and the Professions
BIOL 2213 Human Physiology (ACTS Equivalency
= BIOL 2414 Lecture)
\& BIOL 2211L Human Physiology Laboratory
(ACTS Equivalency = BIOL 2414 Lab)
ESRM 2403 Statistics in Nursing
or PSYC 2013 Introduction to Statistics for

## Psychologists

or STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
or STAT 2823 Biostatistics
BIOL 2013 General Microbiology (ACTS
Equivalency = BIOL 2004 Lecture)
\& BIOL 2011L General Microbiology Laboratory
(ACTS Equivalency $=$ BIOL 2004 Lab)
NURS 2012 Nursing Informatics
NURS 2032 Therapeutic and Interprofessional
Communication (Satisfies General Education Outcome 4.1)
Social Sciences State Minimum Core elective (Satisfies General Education Outcome 3.3) ${ }^{2}$
NURS 3321L Health Assessment Practicum
NURS 3342 Health Assessment
Elective
Year Total:
Third Year Fall

NURS 3402 Nursing Concepts: Older Adult 2
NURS 3313 Pharmacology in Nursing 3
NURS 3314 Pathophysiology
NURS 3422 Nursing Concepts: Foundations of

## Professional Practice

NURS 3424 Professional Role Implementation I:

## Caregiver

NURS 3634 Nursing Concepts: Adult Health and Illness I
NURS 3644 Professional Role Implementation II: Caregiver
NURS 3742 Nursing Concepts: Mental Health and Illness
NURS 3752 Professional Role Implementation III: Caregiver
NURS 3842 Foundations of Scientific Evidence in Nursing Practice
NURS 4112 Nursing Concepts: Teaching and Health Promotion (Satisfies General Education Outcome 1.2)
Year Total:

4 2

| Fourth Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| NURS 4154 Nursing Concepts: Children and Family | 4 |  |
| NURS 4164 Professional Role Implementation IV: Teacher | 4 |  |
| NURS 4242 Leadership in Nursing | 2 |  |
| NURS 4252 Professional Role Implementation V: Manager | 2 |  |
| NURS 4262 Nursing Concepts: Adult Health and IIIness II | 2 |  |
| NURS 4442 Nursing Concepts: Critical Care | 2 |  |
| NURS 4452 Professional Role Implementation VI: Role Synthesis | 2 |  |
| NURS 4603 Nursing Concepts: Community | 3 |  |
| NURS 4613 Professional Role Implementation VII: Role Synthesis | 3 |  |
| NURS 4712 Seminar in Nursing (Satisfies General Education Outcome 6.1) | 2 |  |
| NURS 4722 Professional Role Implementation VIII: Role Synthesis | 2 |  |
| Year Total: | 14 | 14 |
| Total Units in Sequence: | 120 |  |
| BIOL 1543/BIOL 1541L suggested due to prerequisite required forBIOL 2443/BIOL 2441L and BIOL 2013/BIOL 2011L. <br> ${ }^{2}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections. |  |  |
|  |  |  |

## R.N. to B.S.N. Option (NURSBS-RNBN) Program Admission Policies

## Step One

Complete the university admission application and associated requirements. Current practicing Registered Nurse (R.N.) applicants will select R.N. to B.S.N. program for their program of study.

## Step Two

Upon receipt of all required application material, the university determines applicant qualification for general university admission. If general admission is granted, the application then goes to the nursing department
to determine program admission eligibility. Admission criteria verified by the nursing department includes:

- Completion of an accredited/state board approved R.N. program.
- R.N. licensure status in Arkansas and /or any other state that has approved the program. Not all state boards of nursing will accept outside of state education. See program website for the current list of allowed states. The nursing license must be active and unencumbered. Students admitted to the program will be required to maintain this active, unencumbered status for the duration of their enrollment in the program.
- The applicant's R.N. employment status including the following:
- R.N.s with 12-months or greater since nursing program completion:
- Documentation from current and/or recent employer(s) where applicant is hired as an R.N. including institution or organization name, address, supervisor contact information, area or unit of service, position title, and employment status (e.g. full-time, part-time, per diem). Applicants should include documentation of one of the following:
- Employer verification of 1,000-R.N. practice-hours completed within 12-24 months of beginning the program.
- Completion of a state board of nursing approved R.N.refresher courses within 12-24 months of beginning the program.
- Nursing students enrolled in the final semester of an accredited nursing program may apply and be eligible for conditional program admission upon successful completion of their current nursing program. Students in this category will be required to submit the following:
- Verification of good standing provided from the director or dean of the respective nursing program from which the applicant is transferring (form provided in University application).
- Final transcripts (official) to the university and a copy (can be unofficial) to the nursing department upon completion of current nursing education program.
- Date of NCLEX exam once scheduled and testing outcome resulting in licensure. In addition, students may enroll in a maximum of 6 credit hours of course work within the R.N. to B.S.N. program of study and enrollment duration may not exceed one academic semester or 6 months following PreR.N. licensure program completion.


## Step Three

Once admitted an academic advisor will evaluate the general education requirements (state minimum core (p. 81) and nursing program prerequisites). Students must complete all program prerequisites before beginning the nursing program courses or in the first term of admission. The academic advisor will assist each student in developing an individualized course progression plan to meet the requirements of the program.

## Additional Program Information

- Professional nursing courses for R.N. to B.S.N. students are delivered online through University of Arkansas Global Campus.
- Students will be required to identify a qualified mentor (B.S.N. level or higher) for the NURS 4092 practicum course involving 75 clinical hours.
- Students admitted to the program may request up to 3 credit hours of previously completed B.S.N.-level course credit in substitution for a core R.N. to B.S.N. program of study course. The nursing faculty evaluate core R.N. to B.S.N course substitution petitions for eligibility. Only courses taken within the last five years will be eligible for review.


## Program Outline

Credit for courses listed below will be held in escrow. The student will receive credit for these courses upon successful completion of the program.

| NURS 2032 | Therapeutic and Interprofessional Communication | 2 |
| :---: | :---: | :---: |
| NURS 3313 | Pharmacology in Nursing | 3 |
| NURS 3422 <br> \& NURS 3424 | Nursing Concepts: Foundations of Professional Practice and Professional Role Implementation I: Caregiver | 6 |
| NURS 3634 <br> \& NURS 3644 | Nursing Concepts: Adult Health and Illness I and Professional Role Implementation II: Caregiver | 8 |
| NURS 3742 <br> \& NURS 3752 | Nursing Concepts: Mental Health and IIIness and Professional Role Implementation III: Caregiver | 4 |
| NURS 4154 \& NURS 4164 | Nursing Concepts: Children and Family and Professional Role Implementation IV: Teacher | 8 |
| NURS 4262 | Nursing Concepts: Adult Health and Illness II | 2 |
| NURS 4442 <br> \& NURS 4452 | Nursing Concepts: Critical Care and Professional Role Implementation VI: Role Synthesis | 4 |

Total Hours

## Requirements for Bachelor of Science in Nursing R.N. to B.S.N. Option

State Minimum Core ( 35 hours)
English ${ }^{1}$
Choose two courses:
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023)
Mathematics ${ }^{1}$
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or any higher MATH course with MATH 1203 as a prerequisite)

Sciences with Labs ${ }^{1}$

8

Two Core Science courses with labs
Fine Arts ${ }^{1}$
Any Core Fine Arts course
Humanities ${ }^{1}$
Any Core Humanities course
U.S. History or Government ${ }^{1}$

Choose one of the following:
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)
PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)

| Social Sciences |  | 9 |
| :---: | :---: | :---: |
| Choose three Core Social Sciences courses |  |  |
| Additional Program Requirements |  |  |
| Sciences, in addition to state core sciences with labs. ${ }^{1}$ |  | 8 |
| Statistics ${ }^{1}$ |  | 3 |
| Elective hours (as needed) ${ }^{1}$ |  | 7 |
| R.N. to B.S.N. Professional Nursing Program (30 hours) |  |  |
| NURS 4003 | Transition to Professional Nursing Practice | 3 |
| NURS 4013 | Informatics for the Professional Nurse | 3 |
| NURS 4203 | Leadership for Professional Nurses | 3 |
| NURS 4023 | Health Promotion Across the Lifespan | 3 |
| NURS 4323 | Health Assessment and Clinical Reasoning | 3 |
| NURS 4063 | Population and Community Health Nursing | 3 |
| NURS 4843 | Scientific Foundation for Professional Nursing Practice | 3 |
| NURS 4503 | Introduction to Health Care Policy | 3 |
| NURS 4313 | Pathophysiology in Nursing | 3 |
| NURS 4701 | Professional Nursing Synthesis (All core and program prerequisites must be met prior to enrollment) | 1 |
| NURS 4092 | Professional Role Practicum (NURS 4092 should be the last course taken and should come after 4701) | 2 |
| Credits for Selected Nursing Courses Granted from Escrow (37 hours) |  |  |
| NURS 2032 | Therapeutic and Interprofessional Communication | 2 |
| NURS 3313 | Pharmacology in Nursing | 3 |
| NURS 3422 | Nursing Concepts: Foundations of Professional Practice | 2 |
| NURS 3424 | Professional Role Implementation I: Caregiver | 4 |
| NURS 3634 | Nursing Concepts: Adult Health and IIIness I | 4 |
| NURS 3644 | Professional Role Implementation II: Caregiver | 4 |
| NURS 3742 | Nursing Concepts: Mental Health and Illness | 2 |
| NURS 3752 | Professional Role Implementation III: Caregiver | 2 |
| NURS 4154 | Nursing Concepts: Children and Family | 4 |
| NURS 4164 | Professional Role Implementation IV: Teacher | 4 |
| NURS 4262 | Nursing Concepts: Adult Health and Illness II | 2 |
| NURS 4442 | Nursing Concepts: Critical Care | 2 |
| NURS 4452 | Professional Role Implementation VI: Role Synthesis | 2 |

## Total Hours

${ }^{1}$ Denotes required nursing pre-requisite courses.

The minimum number of hours required to receive a baccalaureate degree at the University of Arkansas is 120 semester hours. The Nursing major is exempt from the eight-semester degree plan since the program is admissions-based.

## Progression, Withdrawal, and Dismissal for R.N. to B.S.N. program (NURSBS-RNBN)

1. For progression in the nursing program, only grades of " C " or above will be accepted. Note that the Eleanor Mann School of nursing uses the following grading scale and exam policy:
a. Grading Scale: $\mathbf{A}=92-100 \% \mathbf{B}=83-91 \% \mathbf{C}=75-82 \% \mathbf{D}=$ 62-74\% F= below 62\%
b. Exam Policy: A $75 \%$ average on class exams is necessary to pass the course. Once this criterion is met, other course grades will be factored into the final grade.
2. Course Failure
a. If a student earns a "D" or "F" in a course, the course may be repeated once. Students who make less than a "C" may not progress into courses that require a prerequisite until the course is repeated and the required minimum grade attained. The course must be passed on the second attempt. If a student earns a "D," "F," or withdraws from the second attempt, this results in dismissal from the nursing program.
b. If a student earns a "D" or "F" in a second course, the student will be dismissed from the program and will not be eligible for readmission.
3. Course Withdrawal
a. If a student withdraws from a course, the course may be repeated. No more than two withdrawals from the same course will be allowed. If not passed on the third attempt, the student will be dismissed from the program.
4. Students must maintain an active, unencumbered licenses to practice. If at any point in the duration of the program, the student's nursing license becomes encumbered or inactive the student must notify the school of nursing immediately and will be dismissed from the program.
5. Students admitted prior to taking their NCLEX RN exam must report successful licensure within 6 months of program start. If unsuccessful on NCLEX RN exam, the student will not be permitted to enroll in subsequent semesters until licensed.
6. Students should note that any violation of the Eleanor Mann School of Nursing policies or code of ethics can result in course failure and/ or dismissal from the program without prior warnings (see student handbook).
a. Three performance improvement plans are evidence of a pattern of behavior that contradicts our policies and code of ethics. A student with three performance improvement plans will meet with program administration and will be subject to dismissal.
7. A student dismissed from the school of nursing will be asked to self-withdraw from all courses or will be subject to administrative withdrawal.

## Repeating Didactic/Clinical Practicum Courses (NURSBS-RNBN)

1. A student who needs to repeat a course in which they were unsuccessful must make a petition to the Student Affairs Committee in nursing and are encouraged to do so as soon as they are aware of the need to repeat a course. An academic success plan will be implemented upon approval as outlined by this committee.
2. Students that withdraw or are unsuccessful will be reenrolled on a space-available basis according to the following priority system: Priority Groups for Placement in Required Courses
a. First Priority - Continuing students in good academic standing ranked by admission cohort.
b. Second Priority - Students repeating a course due to withdrawal or failure.
3. Spaces in clinical practicum courses are limited and tightly controlled by accreditation, the State Boards of Nursing, and clinical agency policies. Space in Didactic courses are limited to space available. A student re-enrolling in a Clinical Practicum Course (whether due to
illness, course failure, or other reasons) will not be assured a clinical placement space in subsequent courses.

## Readmission Policies

Any student whose enrollment in the professional program of study has been interrupted may seek readmission following the steps below:

1. Seek readmission into the University of Arkansas (if applicable).
2. Readmission will not be considered for any student dismissed from the School of Nursing who obtained a "D" or "F" in one nursing course and was unable to make a "C" or better upon repeating this course, who fails a second course, or who was dismissed from a course due to safety, ethical, or dishonesty issues.
3. Exceptions to this policy will be considered by the Student Affairs Committee in nursing on an individual basis and only in the presence of extenuating circumstance.

## Exit Policies

1. Students must complete the requirements for the degree within five years of enrolling in the first upper-level nursing course. Nursing credits must be reevaluated (and may need to be repeated) if the student does not complete the Professional Program of Study within the five-year limit.
2. In addition to the program requirements, students must meet the university and college graduation requirements. This curriculum is subject to change to comply with national accreditation and the Arkansas State Board of Nursing Standards.

## R.N. to B.S.N. Option Semester Degree Program

The nature of the R.N. to B.S.N. major excludes it from ACT 1014 eightsemester degree-completion program requirements. The degree is a 120hour degree in accordance with ACT 747.

Presented below is a typical plan for completing this degree in four semesters; individual student plans may vary.

Students are not required to enroll in courses during the summer, but courses may be offered. Students may be able to finish the program sooner if they enroll in summer courses.

First and Second Year
RNBN Prerequisite courses ${ }^{1}$

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| NURS 4003 Transition to Professional Nursing | 3 |  |
| Practice | 3 |  |
| NURS 4013 Informatics for the Professional Nurse | 3 |  |
| NURS 4313 Pathophysiology in Nursing | 3 |  |
| NURS 4323 Health Assessment and Clinical | 3 | 3 |
| Reasoning |  | 3 |
| NURS 4843 Scientific Foundation for Professional <br> Nursing Practice <br> NURS 4023 Health Promotion Across the Lifespan <br> (Satisfies General Education Outcome 4.1) <br> NURS 4063 Population and Community Health <br> Nursing (Satisfies General Education Outcome 4.2) |  |  |


| NURS 4203 Leadership for Professional Nurses (Satisfies General Education Outcome 5.1) |  | 3 |
| :---: | :---: | :---: |
| NURS 4503 Introduction to Health Care Policy |  | 3 |
| NURS 4701 Professional Nursing Synthesis (Satisfies General Education Outcomes 1.2 and 6.1) |  | 1 |
| NURS 4092 Professional Role Practicum (Satisfies General Education Outcomes 1.2 and 6.1) |  | 2 |
| Year Total: | 15 | 15 |
| Fourth Year | Fall | Units Spring |
| NURS 2032 Therapeutic and Interprofessional Communication | 2 |  |
| NURS 3313 Pharmacology in Nursing | 3 |  |
| NURS 3422 Nursing Concepts: Foundations of Professional Practice | 2 |  |
| NURS 3424 Professional Role Implementation I: Caregiver | 4 |  |
| NURS 3634 Nursing Concepts: Adult Health and Illness I | 4 |  |
| NURS 3644 Professional Role Implementation II: Caregiver | 4 |  |
| NURS 3742 Nursing Concepts: Mental Health and Illness | 2 |  |
| NURS 3752 Professional Role Implementation III: Caregiver | 2 |  |
| NURS 4154 Nursing Concepts: Children and Family | 4 |  |
| NURS 4164 Professional Role Implementation IV: Teacher | 4 |  |
| NURS 4262 Nursing Concepts: Adult Health and IIIness II | 2 |  |
| NURS 4442 Nursing Concepts: Critical Care | 2 |  |
| NURS 4452 Professional Role Implementation VI: Role Synthesis | 2 |  |
| Year Total: | 37 |  |
| Total Units in Sequence: |  | 67 |
| Combined Totals |  |  |
| Credits earned prior to Fall Semester Year 3 |  | 53 |
| Credits in NURSBS RNBN sequence |  | 67 |
| Total Hours |  | 120 |
| ${ }^{1}$ The General Education Curriculum is designed to measure specific knowledge, skills, and attitudes developed by students at the University of Arkansas. Since the pre-program requirements are most likely completed at other institutions, learning outcomes 1.1, 2.1, 3.1, 3.2, 3.3, and 3.4 will not be measured in this program. |  |  |

## Requirements for L.P.N./L.P.T.N. to B.S.N. Option <br> Pre L.P.N. to B.S.N Option (PLNBN)

In line with the university and the College of Education and Health Professions initiatives, the Eleanor Mann School of Nursing seeks to enhance a diverse academic experience for all students. This results in additional expertise in providing care to an increasingly diverse patient population. The pre-nursing option for Licensed Practical Nurses (L.P.N.) provides an online platform for completing the required state minimum core and nursing program prerequisite for admission to the school of nursing.

Once admitted to the university, an academic adviser will evaluate the general education requirements (state minimum core and nursing program prerequisites) that the student has already completed. Students interested in the online L.P.N. to B.S.N. program option will be admitted to the University of Arkansas as pre-nursing majors. The academic adviser will assist each student in developing an individualized course progression plan to meet admission requirements to the nursing program.

## Program Admission Policies

## Step One - General Education Requirements

Successfully complete all general education requirements (state minimum core (p. 81) and nursing program prerequisites) and maintain good academic standing.

| English |  |  |
| :---: | :---: | :---: |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) | 3 |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) | 3 |
| Mathematics |  |  |
| MATH 1203 | College Algebra (ACTS Equivalency $=$ MATH 1103) (or higher) | 3 |

Sciences with labs must include: 16

Chemistry (4 hours)
Anatomy (4 hours)
Physiology (4 hours)
Microbiology (4 hours)

| Fine Arts |  | 3 |
| :---: | :---: | :---: |
| Humanities |  | 3 |
| American History | American Government (choose one) | 3 |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |
| HIST 2013 | History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  |
| PLSC 2003 | American National Government (ACTS Equivalency = PLSC 2003) |  |
| Social Sciences |  | 9 |
| Statistics |  | 3 |
| Electives |  | 2 |
| Total Hours |  | 48 |

Upon completing the above courses, the academic adviser will initiate a review for program admission eligibility in conjunction with the department of nursing (see step two). All program and University core prerequisites must have a C grade or above to be eligible for nursing program admission. Pre-L.P.N. to B.S.N. online students taking general education courses must maintain a GPA that allows them to remain in good academic standing (minimum of 2.0) with the University of Arkansas to enter the nursing program of study.

## Program Requirements <br> Step Two - Program Admission Requirements

To be considered for nursing program admission, pre-L.P.N. to B.S.N. students will submit their application packet by the following dates:

Fall Start- see nursing.uark.edu
Spring Start- see nursing.uark.edu
Admission packet must include:

1. Eleanor Mann School of Nursing Application.
2. Completion of an accredited/state board approved L.P.N., L.V.N., or L.P.T.N. program. Official transcript required to be on file with the University of Arkansas.
3. Proof and maintenance of an active, unencumbered license to practice as an L.P.N., L.V.N., or L.P.T.N. in Arkansas and/or any other state that has approved of the program. Not all state boards of nursing will accept outside-of-state education. See the program website for current list of the allowed states. Students admitted to the program will be required to maintain this active, unencumbered status for the duration of their enrollment in the program. Nursing program personnel will verify licensure.
4. Employment/nursing experience status of applicant based on the following:

- Documentation from current and/or recent employer(s) where applicant is hired as an L.P.N. including institution or organization name, address, and supervisor contact information, area or unit of service, position title, and employment status (e.g., full-time, part-time, per diem). Employer verification of 2,000-L.P.N. practice-hours have been completed in the 24 months prior to the beginning of the program (form provided in University application).


## OR

- If the student has not worked 2000 hours in the last 24 months prior to the beginning of the program, but has worked the required hours previously as a licensed nurse, completion of a state board approved PN-refresher course within 12 months prior to beginning the program is required.

5. TEAS test score of $65 \%$ or above, taken within the last two years (information on the nursing website). The two-year period is defined as ending on the first day of the academic term in which the student plans to begin the nursing in-program courses.

## Completed applicant packets received by each deadline will be

 reviewed, and acceptance into the program will be dependent on quality of the application and space availability.
## Additional Program Information and Requirements

- Professional nursing courses for L.P.N. to B.S.N. students are delivered online through the University of Arkansas Global Campus. Clinical practicum hours can be completed within the student's geographic area with a qualified (B.S.N. level or higher) preceptor selected by the student.
- Students must provide proof of all required clinical paperwork requested by the school of nursing, including annual criminal background checks and regular drug screens (the most current clinical requirements can be located in the student handbook).
- Students admitted to the program may request up to 3 credit hours of previously completed B.S.N. level course credit in substitution for a core L.P.N. to B.S.N. program of study course. The nursing faculty evaluate core L.P.N. to B.S.N. course substitution petitions for eligibility. Only courses taken within the last five years will be eligible for review.
- Students who have started an L.P.N. to R.N. or L.P.N. to B.S.N. program at another institution are required to submit a letter from the nursing program director stating eligibility for readmission.

Credit for courses listed below will be held in escrow. The student will receive credit for these courses upon successful completion of the program.

| NURS 2032 | Therapeutic and Interprofessional Communication | 2 |
| :--- | :--- | ---: |
| NURS 3313 | Pharmacology in Nursing | 3 |
| NURS 3422 | Nursing Concepts: Foundations of Professional | 2 |
|  | Practice |  |
| NURS 3424 | Professional Role Implementation I: Caregiver | 4 |
| NURS 3644 | Professional Role Implementation II: Caregiver | 4 |
| Total Hours |  | $\mathbf{1 5}$ |

## Requirements for Bachelor of Science in Nursing L.P.N. to B.S.N. Option (NURSBSLNBN)

| Completion of all Pre-L.P.N. to B.S.N. requirements |  | 48 |
| :---: | :---: | :---: |
| L.P.N. to B.S.N. Profressional Nursing Program (57 hours) |  |  |
| NURS 3111 | Clinical Skills for Professional Nurses | 1 |
| NURS 3302 | Older Adult Nursing | 2 |
| NURS 3332 | Adult Health I for Nurses | 2 |
| NURS 3772 | Mental Health Nursing | 2 |
| NURS 3782 | Mental Health Practicum | 2 |
| NURS 4003 | Transition to Professional Nursing Practice | 3 |
| NURS 4013 | Informatics for the Professional Nurse | 3 |
| NURS 4023 | Health Promotion Across the Lifespan | 3 |
| NURS 4063 | Population and Community Health Nursing | 3 |
| NURS 4073 | Population and Community Health Practicum | 3 |
| NURS 4092 | Professional Role Practicum | 2 |
| NURS 4102 | Adult Health II for Nurses | 2 |
| NURS 4124 | Child and Family Nursing | 4 |
| NURS 4143 | Child and Family Practicum | 3 |
| NURS 4203 | Leadership for Professional Nurses | 3 |
| NURS 4212 | Leadership Practicum | 2 |
| NURS 4313 | Pathophysiology in Nursing | 3 |
| NURS 4323 | Health Assessment and Clinical Reasoning | 3 |
| NURS 4503 | Introduction to Health Care Policy | 3 |
| NURS 4542 | Critical Care Nursing | 2 |
| NURS 4552 | Critical Care Practicum | 2 |
| NURS 4701 | Professional Nursing Synthesis | 1 |
| NURS 4843 | Scientific Foundation for Professional Nursing Practice | 3 |
| Escrow credit (15 hours) |  |  |
| NURS 2032 | Therapeutic and Interprofessional Communication | 2 |
| NURS 3313 | Pharmacology in Nursing | 3 |


| NURS 3422 | Nursing Concepts: Foundations of Professional | 2 |
| :--- | :--- | ---: |
|  | Practice |  |
| NURS 3424 | Professional Role Implementation I: Caregiver | 4 |
| NURS 3644 | Professional Role Implementation II: Caregiver | 4 |
| Total Hours |  | $\mathbf{1 2 0}$ |

The minimum number of hours required to receive a baccalaureate degree at the University of Arkansas is 120 semester hours. The nursing major is exempt from the eight-semester degree plan since the program is admission-based.

## Progression, Withdrawal, and Dismissal for L.P.N. to B.S.N. program (NURSBS-LNBN)

1. For progression in the nursing program, only grades of " C " or above will be accepted. Note that the Eleanor Mann School of Nursing uses the following grading scale and exam policy:
a. Grading Scale: $\mathbf{A}=92-100 \% \mathbf{B}=83-91 \% \mathbf{C}=75-82 \% \mathbf{D}=$ $62-74 \%$ F = below 62\%
b. Exam Policy: A 75\% average on class exams is necessary to pass the course. Once this criterion is met, other course grades will be factored into the final grade.
2. Course Failure
a. If a student earns a "D" or "F" in any course, the course may be repeated once. Students who make less than a "C" may not progress into courses that require it as a prerequisite until the course is repeated and the required minimum grade attained. The course must be passed on the second attempt. If a student earns a D, F, or withdraws from the second attempt, this results in dismissal from the nursing program.
b. If a student earns a "D" or "F" in a second course, the student will be dismissed from the program and will not be eligible for readmission.
3. Course Withdrawal
a. If a student withdraws from a didactic course, the course may be repeated. No more than two withdrawals from the same didactic course will be allowed. If the didactic course is not passed on the third attempt, the student will be dismissed from the program.
b. If a student withdraws from a practicum course, the course may be repeated once. The course must be passed on the second attempt. If the student does not pass the course within the two allowed attempts, this results in program dismissal.
4. Students who do not pass the Dosage Calculation Exam \#per handbook policy will be administratively withdrawn from the course.\# This may lead to a delay in graduation and/or dismissal from the program.
5. Students must maintain an active, unencumbered license to practice nursing. If the student's license becomes encumbered or inactive at any point in the program's duration, the student must notify the school of nursing immediately and will be dismissed from the program.
6. For licensed nurses, the school of nursing is mandated to report positive drug screens to the board of nursing. Confirmation of a positive drug screen will result in administrative withdrawal from nursing courses and nursing program dismissal.
7. A positive background check may impede or halt the student's progression in the program and may impact clinical placement and eligibility for licensure. If a student is arrested during their program of study, the school of nursing should be notified immediately and the student will become ineligible for clinical courses pending the outcome of an investigation and/or judicial process.
8. The school of nursing will comply with the policies, rules, and regulations set by the Arkansas State Board of Nursing and that of the student's respective State Board of Nursing
9. Students who do not complete all required compliance documents as specified in the Student and Clinical Handbooks by the due date will not be enrolled into the clinical course and have to defer to the next available semester upon completion of pending compliance requirements.
10. If a student taking a didactic course with an associated practicum in the same semester decides to withdraw from the didactic course, they must also withdraw from the practicum.
11. Students should note that any violation of the Eleanor Mann School of Nursing policies or code of ethics can result in course failure and/ or dismissal from the program without prior warnings (see student handbook).
a. Three performance improvement plans are evidence of a pattern of behavior that contradicts our policies and code of ethics. A student with three performance improvement plans will meet with program administration and will be subject to dismissal.
12. A student dismissed from the school of nursing will be asked to self-withdraw from all courses or will be subject to administrative withdrawal.

## Repeating Didactic/Clinical Practicum Courses (NURSBS-LNBN)

1. A student who needs to repeat a course in which they were unsuccessful must make a petition to the Student Affairs Committee in nursing and are encouraged to do so as soon as they are aware of the need to repeat a course. An academic success plan will be implemented upon approval as outlined by this committee.
2. Students that withdraw or are unsuccessful will be reenrolled on a space-available basis according to the following priority system: Priority Groups for Placement in Required Courses
a. First Priority - Continuing students in good academic standing ranked by admission cohort.
b. Second Priority - Students repeating a course due to withdrawal or failure.
3. Spaces in clinical practicum courses are limited and tightly controlled by accreditation, the State Boards of Nursing, and clinical agency policies. Enrollment in didactic courses are limited to space availability. A student re-enrolling in a clinical practicum course (whether due to illness, course failure, or other reasons) will not be assured a clinical placement space in subsequent courses.

## Readmission Policies

Any student whose enrollment in the professional program of study has been interrupted may seek readmission following the steps below:

1. Seek readmission into the University of Arkansas (if applicable).
2. Readmission will not be considered for any student dismissed from the School of Nursing who obtained a "D" or "F" in one nursing course and was unable to make a " C " or better upon repeating this course, who fails a second course, or who was dismissed from a clinical practicum course due to safety, ethical, or dishonesty issues. Exceptions to this policy will be considered by the Student Affairs Committee in nursing on an individual basis and only in the presence of an extenuating circumstance.
3. Students must complete the requirements for the degree within five years of enrolling in the first upper-level nursing course. Nursing credits must be reevaluated (and may need to be repeated) if the student does not complete the Professional Program of Study within the five-year limit.
4. In addition to the program requirements, students must meet the university and college graduation requirements. This curriculum is subject to change to comply with national accreditation and the Arkansas State Board of Nursing Standards.

## L.P.N. to B.S.N. Option (NURSBS-LNBN) Semester Plan

The nature of the L.P.N. to B.S.N. major excludes it from ACT 1014 eightsemester degree-completion program requirements. The degree is a 120 credit hour degree in accordance with ACT 747.

The L.P.N. to B.S.N. major was built for working nurses and intended to be taken at a part time pace. Presented below is a typical plan for completing this degree in five years; individual student plans may vary.

Students are not required to enroll in courses during the summer, but courses may be offered. Students may be able to finish the program sooner if they enroll in summer courses.

| First Year |  |  | Units <br> Summer |
| :--- | ---: | ---: | ---: | ---: |
| Pre-program requirements ${ }^{1}$ | Fall | Spring |  |
| Year Total: | 48 |  |  |
| Second Year |  |  |  |
| Units |  |  |  |

## Exit Policies

| Fourth Year | Units |  |  |
| :---: | :---: | :---: | :---: |
|  | Fall | Spring | Summer |
| NURS 4013 Informatics for the Professional Nurse | 3 |  |  |
| NURS 4542 Critical Care Nursing | 2 |  |  |
| NURS 4552 Critical Care Practicum | 2 |  |  |
| NURS 4023 Health Promotion Across the Lifespan |  | 3 |  |
| NURS 4063 Population and Community Health Nursing |  | 3 |  |
| NURS 4073 Population and Community Health Practicum |  | 3 |  |
| NURS 4503 Introduction to Health Care Policy |  |  | 3 |
| Year Total: | 7 | 9 | 3 |
| Fifth Year |  |  | Units |
|  | Fall | Spring | Summer |
| NURS 4701 Professional Nursing Synthesis | 1 |  |  |
| NURS 4092 Professional Role Practicum | 2 |  |  |
| Escrow credit | 15 |  |  |
| NURS 2032 Therapeutic and Interprofessional Communication |  |  |  |
| NURS 3313 Pharmacology in Nursing |  |  |  |
| NURS 3422 Nursing Concepts: Foundations of Professional Practice |  |  |  |
| NURS 3424 Professional Role Implementation I: Caregiver |  |  |  |
| NURS 3644 Professional Role Implementation II: Caregiver |  |  |  |
| Year Total: | 18 |  |  |

## Total Units in Sequence:

${ }^{1}$ The General Education Curriculum is designed to measure specific knowledge, skills, and attitudes developed by students at the University of Arkansas. Since the pre-program requirements are most likely completed at other institutions, learning outcomes 1.1, 2.1, 3.1, 3.2, 3.3, and 3.4 will not be measured in this program.

## Faculty

Ballentine, Hope, D.N.P. (University of Arkansas), M.S.N. (Vanderbilt University), B.A. (Harding University), Teaching Assistant Professor, 2014, 2018.
Bowling, Hilary, D.N.P. (University of Pittsburgh), M.S.N., B.S.N. (University of Arkansas), Clinical Assistant Professor, 2014, 2022.
Bradley, Callie, D.N.P. (University of Utah), Visiting Clinical Assistant Professor, 2020.
Butler, Martha R., Ph.D. (Texas Woman's University), M.N., B.S.N. (Wichita State University), Assistant Professor, 2008, 2018. Casida, Jesse, Ph.D. (Seton Hall University), M.S.N. (Columbia University), B.S. (Bicol University, Phillipines), Professor, George M. and Boyce W. Billingsley Endowed Chair in Nursing, 2022.

Dunbar, Diana, M.S.N. (University of Central Arkansas), B.S.N. (University of Central Oklahoma), Clinical Instructor, 2015, 2019.
Emory, DeAnna Jan, Ph.D. (University of Arkansas), M.S., B.S.N. (University of Oklahoma Health Sciences Center), Associate Professor, 2012, 2018.
Franks, Lisa, D.N.P. (University of Missouri-Columbia), M.S.N., B.S.N. (University of Arkansas), Instructor, 2014.
Garrett, B. J., M.S.N. (Angelo State University), Instructor, 2018.
Gilmet, Kelsey, Ph.D. (University of Illinois-Chicago), M.S.N. (University of Minnesota), B.A. (Kalamazoo College), Instructor, 2016.
Hall, David, M.S.N., B.S.N. (University of Arkansas), Instructor, 2020.
Jarrett, Anna Lee, Ph.D., M.S.N. (University of Missouri-Columbia), B.S.N. (Missouri Southern State College), Associate Professor, 2012, 2018.

Johnson, Kelly Vowell, Ed.D. (University of Arkansas), M.N.Sc.
(University of Arkansas for Medical Sciences) B.S.N. (Arkansas Tech University), Associate Professor, 2013, 2021.
Kilmer, Michele, D.N.P. (University of Alabama), M.S.N (Texas Tech University), B.S.N. (Harding University), Assistant Professor, 2017, 2018. Kippenbrock, Thomas A., Ed.D. (Indiana University at Bloomington), M.S. (Indiana University-Purdue University-Indianapolis), B.S.N. (Indiana State University), Professor, 2003.
Lee, Peggy B., Ed.D. (University of Arkansas), M.S. (University of Southern Mississippi), B.S.N. (Mississippi College), Teaching Associate Professor, 2009, 2021.
Lofton, Annelle L., M.S.N. (University of Arkansas), B.S.N. (University of Arkansas), Clinical Instructor, 2013.
Miller, Bettie Gale, M.S.N. (University of Phoenix), M.S., B.S.E., B.S.N. (University of Arkansas), Instructor, 2003.
Murray, Lori M., D.N.P. (University of Kansas Medical Center), M.S., B.S.N. (University of Oklahoma Health Sciences Center), Teaching Assistant Professor, 2015, 2017.
Peterson, Katelyn, M.S.N., B.S.N. (University of Arkansas), Instructor, 2021.

Sabatini, Lindsey Rachel, D.N.P., M.S., B.S.N., B.S. (University of Arkansas), Instructor, 2012.
Scott, Allison L., D.N.P. (University of Missouri-Kansas City), M.S.N., B.S.N. (University of Arkansas for Medical Sciences), Associate Professor, 2006, 2021.
Shreve, Marilou D., D.N.P., M.S.N. (University of Missouri-Kansas City), B.S.N. (University of Arkansas), Associate Professor, 2013, 2021.

Throop, Kathy, M.S.N. (Northeastern Oklahoma State University), B.S.N. (Baylor University), Instructor, 2019.
Zayas, Fernanda, M.S.N. (Lenoir-Rhyne University), Clinical Instructor, 2018.

## Courses

NURS 2012. Nursing Informatics. 2 Hours.
This course focuses on how information technology is used in the health care system. The course describes how nursing informatics is currently being used by healthcare professionals and speculates about future applications. Prerequisite: Admission to the NURS-PLRN major. (Typically offered: Fall, Spring and Summer)

NURS 2022. Introduction to Professional Nursing Concepts. 2 Hours.
The course presents an overview of theories, principles and concepts essential to professional nursing practice. It includes ethical and legal implications relevant to health care systems. Focus is on the nursing process as the organizing framework for the delivery of care. It also explores the role of the professional nurse. This is a pre-nursing course. Prerequisite: For pre-nursing and nursing majors only. Must have sophomore standing or above and a GPA of 3.0 or above. (Typically offered: Fall, Spring and Summer)

NURS 2032. Therapeutic and Interprofessional Communication. 2 Hours.
Focuses on intrapersonal and interpersonal strategies necessary for effective nurseclient interactions. Introduces a variety of communication techniques skills including group process and dynamics. This is a pre-nursing course. Prerequisite: Admission to the NURS-PLRN major. (Typically offered: Fall, Spring and Summer)

NURS 3111. Clinical Skills for Professional Nurses. 1 Hour
Students apply nursing concepts and skills with emphasis on the caregiver role transition and use of the nursing process. Prerequisite: Admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head, and students must have completed all University core and program prerequisites. Pre- or Corequisite: NURS 4323. (Typically offered: Fall and Spring)

## NURS 3302. Older Adult Nursing. 2 Hours

This course builds on previous nursing knowledge by focusing on gerontologic theories, concepts, and principles as they relate to nursing care of older adults. Students explore socio-cultural context of gerontologic nursing, professional standards of practice, common health concerns, and future considerations. Prerequisite: NURS 4323, NURS 4313 and admission of to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 3313. Pharmacology in Nursing. 3 Hours.
The use of therapeutic drugs in health care is the focus of the course. Nursing assessment, safety measures and client education related to drug therapy are emphasized. This is a Level I course. Prerequisite: Admission into the BSN professional program. (Typically offered: Fall and Spring)

## NURS 3314. Pathophysiology. 4 Hours.

The course focuses on underlying concepts common to pathophysiologic processes across the life span. Factors that contribute to altered physiological functioning and the body's adaptive and compensatory mechanisms are studied. Emphasizes concepts essential for understanding the rationale for preventive and therapeutic nursing interventions in health and illness. This is a Level I course. Prerequisite: Admission into BSN professional program. (Typically offered: Fall and Spring)

NURS 3321L. Health Assessment Practicum. 1 Hour.
The course focuses on the implementation of concepts and principles of health assessment, preparing students to complete a holistic health assessment of the well person. This is a Level I course. Corequisite: NURS 3342. Prerequisite: BIOL 2443 , BIOL 2441L, BIOL 2213, BIOL 2211L, and admission to the BSN professional program. (Typically offered: Fall, Spring and Summer)

## NURS 3332. Adult Health I for Nurses. 2 Hours.

The course focuses on the experience of acute problems across the health-illness continuum. Students learn to utilize the nursing process through care planning and case studies while focusing on the adult population. Prerequisite: NURS 4313, NURS 3302 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

## NURS 3342. Health Assessment. 2 Hours.

This course focuses on concepts and principles of health assessment in a well person. Health status, environment, physical and psychosocial findings, and medical terminology are emphasized to create a holistic health assessment plan. This is a Level I course. Prerequisite: Admission into the BSN professional program of studies, BIOL 2443, BIOL 2441L, BIOL 2213 and BIOL 2211L. Corequisite: NURS 3321L. (Typically offered: Fall and Spring)

## NURS 3402. Nursing Concepts: Older Adult. 2 Hours.

This course focuses on gerontologic theories, concepts, and principles as they relate to nursing care of older adults. Students explore socio-cultural context of gerontologic nursing, professional standards of practice, common health concerns, and future considerations. This is a Level I course. Prerequisite: Admission into the BSN Professional Program of Studies. (Typically offered: Fall and Spring)

NURS 3422. Nursing Concepts: Foundations of Professional Practice. 2 Hours. Introduction to the nursing process and the scope of basic human needs. The student learns to use nursing diagnoses and care plans in case studies. This is a Level I course. Corequisite: NURS 3424. Prerequisite: Admission to BSN professional program. (Typically offered: Fall and Spring)

NURS 3424. Professional Role Implementation I: Caregiver. 4 Hours. Students apply basic nursing concepts and skills in laboratory and clinical settings. Emphasis is on the role of nurse as caregiver and use of the nursing process in the delivery of care. This is a Level I course. Pre- or Corequisite: NURS 3422, NURS 3321L, and NURS 3313. Prerequisite: Admission to the BSN program. (Typically offered: Fall and Spring)

NURS 3634. Nursing Concepts: Adult Health and IIIness I. 4 Hours. Focuses on the adult population experiencing acute problems in the health-illness continuum. Utilizing the nursing process, nursing, and medical treatments of selected conditions that will be emphasized in the acute care setting. This is a Level I course. Corequisite: NURS 3644. Prerequisite: NURS 3313, NURS 3314 , NURS 3321L, NURS 3402, and NURS 3422. (Typically offered: Fall and Spring)

NURS 3644. Professional Role Implementation II: Caregiver. 4 Hours. Emphasizes the role of caregiver in acute care settings. Course expands on assessment and includes advanced clinical skills. Emphasizes the use of clinical judgment to promote optimal health for adults experiencing illness and/ or undergoing surgery. This is a Level I course. Pre- or Corequisite: NURS 3634 Prerequisite: NURS 3313, NURS 3314, NURS 3321L, NURS 3402, NURS 3422, and NURS 3424. (Typically offered: Fall and Spring)

## NURS 3742. Nursing Concepts: Mental Health and IIIness. 2 Hours.

 Presents the basic concepts and theories of mental health and illness. Examines various therapeutic modalities in the care of clients experiencing mental health or psychosocial disorders. This is a Level I course. Corequisite: NURS 3752. Prerequisite: NURS 3313, NURS 3314, NURS 3321L, NURS 3402, and NURS 3422. (Typically offered: Fall and Spring)NURS 3752. Professional Role Implementation III: Caregiver. 2 Hours. Students work with clients who have mental health problems, observe group process in therapy sessions, and develop interpersonal communication skills. Students apply research-based knowledge in assisting assigned clients to meet mental and other health care needs. The caregiver role is emphasized. This is a Level I course. Preor Corequisite: NURS 3742. Prerequisite: NURS 3313, NURS 3314, NURS 3321L, NURS 3402, NURS 3422, and NURS 3424. (Typically offered: Fall and Spring)

NURS 3772. Mental Health Nursing. 2 Hours.
This course presents basic concepts and theories of mental health and illness. Students examine nursing care of clients with various mental health and psychosocial disorders. Therapeutic modalities and their use in a variety of settings are explored. Prerequisite: NURS 4323 and NURS 3111 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 3782. Mental Health Practicum. 2 Hours.
Students will apply the theoretical principles learned in the NURS 3772: Mental Health Nursing to the care of clients with mental health disorders in a variety of settings. Prerequisite: NURS 4323, and NURS 3111 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. Pre- or Corequisite: NURS 3772. (Typically offered: Fall, Spring and Summer)

NURS 3842. Foundations of Scientific Evidence in Nursing Practice. 2 Hours. Introduction to the use of scientific evidence in nursing through a comparative analysis of selected studies. Theoretical, methodological, and analytical approaches are explored. Students acquire basic competencies in evaluating, interpreting, and applying evidence-based knowledge for use in professional nursing practice. This is a Level I course. (Typically offered: Fall and Spring)

## NURS 3842H. Honors Foundations of Scientific Evidence in Nursing Practice.

 2 Hours.Introduction to the use of scientific evidence in nursing through a comparative analysis of selected studies. Theoretical, methodological, and analytical approaches are explored. Students acquire basic competencies in evaluating, interpreting, and applying evidence-based knowledge for use in professional nursing practice. This is a Level I course. (Typically offered: Fall and Spring)
This course is equivalent to NURS 3842.
NURS 4003. Transition to Professional Nursing Practice. 3 Hours.
This course supports educational mobility building on a core of common knowledge and skill from previous nursing education. The course emphasizes a transition to the professional nursing roles and competencies associated with professional nursing practice. Prerequisite: Admission to an online undergraduate BSN professional program, or instructor or departmental consent. (Typically offered: Fall and Spring)

## NURS 4013. Informatics for the Professional Nurse. 3 Hours.

This course focuses on how information technology is used in the health care system. The course describes how nursing informatics is currently being used by healthcare professionals, and speculates about future applications. Prerequisite: Admission to an online undergraduate BSN professional program, or instructor or departmental consent. (Typically offered: Fall and Spring)

NURS 4023. Health Promotion Across the Lifespan. 3 Hours.
This course introduces theories and concepts of teaching and learning, health and wellness, and health behavior in the context of health promotion in nursing. The complex relationships that exist among culture, family, community, and health are explored. Students apply evidence-based strategies to assess, implement, and evaluate health promotion interventions for individuals, families, communities, and populations. Prerequisite: NURS 4003, NURS 4013, NURS 4843 and admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)
NURS 4063. Population and Community Health Nursing. 3 Hours.
This course introduces general principles of population and community health nursing to provide a theoretical base for the care of families, aggregates, communities, and populations. Students apply the concepts of disease prevention and assessment to plan, implement, and evaluate interventions to address diverse health care issues across the lifespan. Prerequisite: NURS 4003, NURS 4843, NURS 4013, (ESRM 2403 or STAT 2303) and admission to an online undergraduate BSN professional program or permission by the instructor or department head and (NURS 3332, NURS 4102, NURS 4124, and NURS 4143 for LNBN students only). (Typically offered: Fall, Spring and Summer)

## NURS 4073. Population and Community Health Practicum. 3 Hours.

Practicum basis for applying knowledge from public health and nursing theory. Learners utilize evidence-based strategies for disease prevention and health promotion with individuals, families, and populations in a variety of community health settings. Prerequisite: NURS 4843, NURS 4013, NURS 3332, NURS 4102, NURS 4124, and NURS 4143 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. Pre- or Corequisite: NURS 4063. (Typically offered: Fall, Spring and Summer)

## NURS 4092. Professional Role Practicum. 2 Hours.

This clinical practicum provides the licensed nursing student with an opportunity to synthesize and apply knowledge of concepts developed throughout the nursing program. Evidence based practice will guide development of a quality improvement project in an area of student's interest. The course provides an opportunity to collaborate with a mentor/preceptor and reflect professional goals. Requires a total of 75 clinical hours. Prerequisite: NURS 4701 and admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 4102. Adult Health II for Nurses. 2 Hours.
Focuses on the adult population experiencing chronic problems in the health-illness continuum. Utilizing the nursing process, nursing and medical treatment of selected conditions will be emphasized across transitional care settings. Prerequisite: NURS 3332, NURS 3302, NURS 4313, and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)
NURS 4112. Nursing Concepts: Teaching and Health Promotion. 2 Hours. The course focuses on teaching/learning and the professional nurse's role in health promotion and disease prevention. A variety of health education and health promotion strategies are presented and evaluated. This is a Level I course. Prerequisite: Admission to the nursing program and completion of NURS 3422 and NURS 3424. (Typically offered: Fall and Spring)

## NURS 4124. Child and Family Nursing. 4 Hours.

Students explore theory and evidence-based knowledge regarding holistic nursing care of children and families. Principles of health promotion and health education are utilized throughout the course. Prerequisite: NURS 4313, NURS 3111, and NURS 4323 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall and Spring)

## NURS 4143. Child and Family Practicum. 3 Hours.

Clinical practicum experience for application of evidence-based knowledge and skills in the nursing care of children and families. Pre- or Corequisite: NURS 4124. Prerequisite: NURS 3111, NURS 4323, NURS 4313, and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall and Spring)
NURS 4154. Nursing Concepts: Children and Family. 4 Hours.
This course provides theory and research-based knowledge regarding holistic nursing care of children and families. Principles of health promotion and health education for expanding families are integral to this course. This is a Level II course. Corequisite: NURS 4164. Pre- or Corequisite: NURS 4112. (Typically offered: Fall and Spring)

## NURS 4164. Professional Role Implementation IV: Teacher. 4 Hours.

Clinical and laboratory experience for application of research-based knowledge and skills in the nursing care of children and families. Emphasis is on teaching role of the nurse. This is a Level II course. Pre- or Corequisite: NURS 4154. Prerequisite: Completion of Level I courses. (Typically offered: Fall and Spring)

## NURS 4203. Leadership for Professional Nurses. 3 Hours.

This course introduces theories and principles of management and leadership and the professional nurse's role within the health care system. Social issues, economic policy, and regulatory requirements are used to explore healthcare delivery systems and access, quality improvement, and patient safety. This course includes strategies for monitoring delivery of care, outcomes, and evaluating program effectiveness. Prerequisite: NURS 3111, NURS 3772, NURS 3782, NURS 4003, NURS 4323 and admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

## NURS 4212. Leadership Practicum. 2 Hours.

Students will apply the theoretical principles learned in NURS 4203 to the delivery of healthcare. Prerequisite: NURS 3772, NURS 3782, NURS 4323, NURS 3111 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. Pre- or Corequisite: NURS 4203. (Typically offered: Fall, Spring and Summer)

## NURS 4242. Leadership in Nursing. 2 Hours.

Introduces principles of leadership and the professional nurse's roles in the health care system. Considers the perspectives of management, organization, and change theory. Includes strategies for monitoring delivery of care, outcomes and evaluating program effectiveness. This is a Level II course. (Typically offered: Fall and Spring)

## NURS 4252. Professional Role Implementation V: Manager. 2 Hours.

Students will apply the theoretical principles learned in NURS 4242 and NURS 4262 to the delivery of care to adults with chronic conditions across transitions of care settings. The manager will be emphasized. This is a Level II course. Prerequisite: Completion of Level I courses. Pre- or Corequisite: NURS 4242 and NURS 4262. (Typically offered: Fall and Spring)

NURS 4262. Nursing Concepts: Adult Health and IIIness II. 2 Hours.
Focuses on the adult population experiencing chronic problems in the health-illness continuum. Utilizing the nursing process, nursing and medical treatment of selected conditions will be emphasized across transitional care settings. This is a Level II course. Prerequisite: Level I courses. (Typically offered: Fall and Spring)

NURS 4262H. Honors Nursing Concepts: Adult Health and IIIness II. 2 Hours. Focuses on the adult population experiencing chronic problems in the health-illness continuum. Utilizing the nursing process, nursing and medical treatment of selected conditions will be emphasized across transitional care settings. This is a Level II course. Prerequisite: Level I courses. (Typically offered: Fall and Spring) This course is equivalent to NURS 4262.

## NURS 4313. Pathophysiology in Nursing. 3 Hours.

The course focuses on the study of the underlying concepts of physiological functioning and the body's adaptive and compensatory mechanisms within a systems framework. Learners examine aspects of disease processes including etiology, pathogenesis, and clinical manifestations, as it applies to current nursing practice with diverse clients across the lifespan. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 4323. Health Assessment and Clinical Reasoning. 3 Hours.
This 3-credit theory course focuses on increasing knowledge of health assessment skills. Emphasis is placed on strengthening clinical reasoning skills through identifying normal findings, interpreting abnormal findings, and applying principles of evidence-based practice to the health assessment process. The role of documentation of assessment findings to third-party reimbursement is also explored. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 4442. Nursing Concepts: Critical Care. 2 Hours.
Focuses on the adult population experiencing multiple or critical illnesses or conditions necessitating admission to a critical care unit. The course emphasizes both nursing and medical treatment of selected conditions. This is a Level II course. Corequisite: NURS 4452. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall and Spring)

NURS 4452. Professional Role Implementation VI: Role Synthesis. 2 Hours. Clinical learning is focused on further developing and refining the knowledge, skills, and attitudes necessary to manage the care of an acutely ill or complex patient and/ or family within the context of an inter-professional team. This is a Level II course. Prerequisite or Corequisite: NURS 4442. Prerequisite: Completion of Level I and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall and Spring)
NURS 4503. Introduction to Health Care Policy. 3 Hours.
This course provides an overview of health care policy orienting students to the political and social processes impacting the current health care environment. The course provides a basic framework for understanding the role of nursing in advocacy, leadership, economics and ethics associated with influencing health care policy. Recognizing the financing of health care and the impact on quality through policy changes will be discussed. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

## NURS 4542. Critical Care Nursing. 2 Hours.

Focuses on the adult population experiencing multiple or critical illnesses or conditions necessitating admission to a critical care unit. The course emphasizes both nursing and medical treatment of selected conditions. Prerequisite:
NURS 3111, NURS 3332, NURS 4102, NURS 4323, NURS 4124, NURS 4143, NURS 3302, NURS 4313, and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

## NURS 4552. Critical Care Practicum. 2 Hours.

Clinical learning is focused on further developing and refining the knowledge, skills, and attitudes necessary to manage the care of an acutely ill or complex patient and/ or family within the context of an inter-professional team. Prerequisite: NURS 3111, NURS 3332, NURS 4102, NURS 4323, NURS 4124, NURS 4143, NURS 3302, and NURS 4313 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. Pre- or Corequisite: NURS 4542. (Typically offered: Fall, Spring and Summer)

## NURS 4603. Nursing Concepts: Community. 3 Hours.

The course focuses on theories and concepts in community health nursing. Health resources are explored in a variety of settings. This is a Level II course. Corequisite: NURS 4613. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall, Spring and Summer)

NURS 4603H. Honors Nursing Concepts: Community. 3 Hours.
The course focuses on theories and concepts in community health nursing. Health resources are explored in a variety of settings. This is a Level II course. Corequisite: NURS 4613. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall, Spring and Summer)
This course is equivalent to NURS 4603.
NURS 4613. Professional Role Implementation VII: Role Synthesis. 3 Hours. Application of community health concepts and the nursing process to promote community health and to restore health in a variety of settings. This is a Level II course. Pre- or Corequisite: NURS 4603. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, NURS 4262. (Typically offered: Fall and Spring)

## NURS 4701. Professional Nursing Synthesis. 1 Hour.

The course emphasizes reflection, integration, and synthesis of concepts from previous courses. Course enrollment occurs in the last semester of the program. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head, and all university core and program prerequisites. (Typically offered: Fall, Spring and Summer)

## NURS 4712. Seminar in Nursing. 2 Hours.

Focuses on integrating the nursing caregiver, teacher and manager roles. Prepares students to analyze practice issues, trends and future demands. Explores the roles of baccalaureate prepared professional nurses and facilitates students to incorporate those roles as they enter professional practice. Must be taken in the final semester of the Professional Program of Study. This is a Level II course. Corequisite: NURS 4722. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall and Spring)

NURS 4722. Professional Role Implementation VIII: Role Synthesis. 2 Hours. Clinical immersion experience that approximates the role of a beginning BSN nurse generalist. Corequisite: NURS 4712. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, NURS 4262. (Typically offered: Fall and Spring)

## NURS 481V. Special Topics in Nursing. 1-6 Hour.

This course is the study of a special topic(s) in nursing. Content varies. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

NURS 4843. Scientific Foundation for Professional Nursing Practice. 3 Hours.
This course introduces the research process through a comparative analysis of selected studies exemplifying various theoretical, methodological, and analytical approaches. Students acquire the basic competencies to critically read, evaluate and interpret nursing research studies for use in professional nursing practice. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall and Spring)
NURS 491V. Independent Study in Nursing. 1-6 Hour.
A selected learning experience in nursing to enhance knowledge and/or practice of the profession. Objectives and experiences are designed on an individual basis with a faculty adviser. May be taken with any 3500-level nursing course or above. (Typically offered: Fall, Spring and Summer)
NURS 491VH. Honors Independent Study in Nursing. 1-6 Hour.
A selected learning experience in nursing to enhance knowledge and/or practice of the profession. Objectives and experiences are designed on an individual basis with a faculty adviser. May be taken with any 3500-level nursing course or above. (Typically offered: Irregular)
This course is equivalent to NURS 491V.

## NURS 498VH. Nursing Honors Thesis/Project. 1-3 Hour.

Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one to complete the honors thesis/project. Prerequisite: Honors candidacy, Nursing Bachelor of Science (NURSBS) major, and NURS 3901H or NURS 3842H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## Elementary Education (ELEL)

The Department of Curriculum and Instruction offers programs that prepare candidates for initial teacher licensure in Elementary Education (K-6).

Admission to the Elementary Licensure B.S.E. is competitive and consists of a three-stage process; simply meeting the minimum admission requirements will not guarantee admission. Admission will be determined by the Elementary Education faculty based on the six items listed in Stage II.

## Requirements for B.S.E. in Elementary Education

## Stage I: Pre-Elementary Education (PELED)

Complete 63 hours of program pre-requisites for the Childhood Education B.S. or the Elementary Education B.S.:

1. Obtain a GPA of 3.0 or better on UA coursework.
2. †Complete all program courses with a "C" or better.
3. Obtain a passing score on the Math, Reading, and Writing sections of the Praxis Core or ACT.
4. Complete a background check.

## Stage II: Admission to the Elementary Licensure B.S.E.

Admission to the Elementary Licensure Program is competitive; not all applicants who meet the minimum requirements will be admitted to the program. Applications to the Elementary Licensure (ELEL) program must be submitted by January 30.

The application process includes:

1. Submission of the application to teacher education (see the Teacher Education Application Fee (p. 53)) through the university-wide Teacher Education Office
2. Submission of Elementary Education application
3. Submission of transcripts for all coursework
4. Oral interview with Elementary Education faculty
5. Submission of passing score on Math, Reading, and Writing sections of the Praxis Core Exam or ACT
6. Current background check

## Stage III: Requirements for Program Continuation and Student Teaching/Internship

1. Maintain a cumulative GPA of 3.0 or better
2. Submission of Internship Application
3. Passing score on Praxis II, Elementary Education, Multiple Subjects
4. Successful teaching audition
5. Submission of letters of recommendation
6. Maintain a current background check
7. Earn a CPR card
8. Passing score on Praxis II, Principles of Learning and Teaching for graduation

This B.S.E. (4-year) degree includes approximately 9 months of student teaching/internship experience in public elementary schools. Senior-level students must therefore attend full-time.

Requirements for teacher licensure vary from state to state and may differ in teacher preparation programs. Please note that Arkansas requires all applicants to successfully complete a criminal background check. Arkansas Teacher Licensure requirements can be found at http:// arkansased.org/teachers/licensureinitial.html.
$\dagger$ All program courses must have a grade of "C" or better. No teaching methods courses may be taken as self-paced (correspondence) courses. A grade of " B " or better must be earned in both the fall and spring semesters of CIED 4173 Student Teaching.

## Elementary Education Requirements

## Pre-Elementary Education (PELED) requirements ${ }^{\dagger}$

State Minimum Core
Courses specifically required for ELEL program
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103)
or MATH $13 \cdot$ Quantitative Reasoning (ACTS Equivalency $=$ MATH 1113)

BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL
\& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency $=$ BIOL 1014 Lab)
or BIOL 1524Biological Principles (ACTS Equivalency = BIOL 1004 Lecture)
GEOS 1113 Physical Geology (ACTS Equivalency = GEOL
\& GEOS 1111L1114 Lecture) and Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
or HIST 201History of the American People, 1877 to Present (ACTS Equivalency $=$ HIST 2123)
GEOS 1123 Human Geography (ACTS Equivalency = GEOG 1113)
or ANTH 10ء́Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013)
HIST 1113 Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113)
or HIST 1123nstitutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123)
ARHS 1003 Basic Course in the Arts: Art Lecture (ACTS Equivalency = ARTA 1003)
or MLIT 100'Experiencing Music (ACTS Equivalency = MUSC 1003)
or THTR 10CTheatre Appreciation (ACTS Equivalency = DRAM 1003)

PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)
WLIT 1113 World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113)
or WLIT 112:World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123)
Additional PELED requirements
CIED 1003 Introduction to Technology in Education
CIED 1013 Introduction to Education
COMM 1313 Public Speaking (ACTS Equivalency $=$ SPCH 1003)
or COMM 2३Interpersonal Communication
MATH 2213 Survey of Mathematical Structures I
MATH 2223 Survey of Mathematical Structures II ${ }^{\dagger}$
COMM 1233 Media, Community and Citizenship
or PHIL 20031ntroduction to Philosophy (ACTS Equivalency $=$ PHIL 1103)
or PHIL 2103lntroduction to Ethics (ACTS Equivalency = PHIL 1003)
or PHIL 2203Logic (ACTS Equivalency $=$ PHIL 1003)
or PHIL 3103Ethics and the Professions
or PSYC 2003eneral Psychology (ACTS Equivalency = PSYC 1103)

PHYS 1034 Physics for Elementary Education Majors ${ }^{\dagger}$
or ASTR Survey of the Universe (ACTS Equivalency $=$ PHSC 2003/2001L 1204 Lecture)
or STEM 41(Astronomy for Educators
or GEOS Earth Science (ACTS Equivalency = GEOL 1124 1133/1131L Lecture)
HIST 3383 Arkansas and the Southwest (or any 3hr Arkansas history course) ${ }^{1, \dagger}$
CIED 3013 Development and Learning Theories in the K-6 Classroom ${ }^{\dagger}$

## Elementary Education

To be completed following admission to ELEL program:
ECON 3053 Economics for Elementary Teachers ${ }^{\dagger}$ or ECON 2143asic Economics: Theory and Practice
CIED 2943 Foundations of Language and Literacy
CIED 3023 Survey of Exceptionalities ${ }^{\dagger}$

| CIED 3053 | The Emerging Adolescent ${ }^{\dagger}$ |
| :---: | :---: |
| CIED 3113 | Emergent Literacy ${ }^{\dagger}$ |
| CIED 3123 | Mathematics Methods in the K-6 Classroom ${ }^{\dagger}$ |
| CIED 3133 | Integrated Social Studies for the K-6 Classroom ${ }^{\dagger}$ |
| STEM 3143 | Teaching Science in the Elementary Grades ${ }^{\dagger}$ |
| CIED 3453 | Developmental Literacy ${ }^{\dagger}$ |
| CIED 4003 | Elementary Seminar ${ }^{\dagger}$ |
| CIED 4123 | Literacy Assessment and Interventions in the Elementary Classroom ${ }^{\dagger}$ |
| CIED 4133 | Measurement and Research in the K-6 Classroom $\dagger$ |
| CIED 4143 | Curriculum Design and Applications of Instructional Practice ${ }^{\dagger}$ |
| CIED 4153 | Classroom Management in the Elementary Grades $\dagger$ |
| CIED 4173 | Student Teaching ${ }^{2,3}$ |
| CIED 4173 | Student Teaching ${ }^{2,3}$ |
| CIED 4183 | Instruction and Assessment of Writing ${ }^{\dagger}$ |
| CIED 4463 | Culture and Learning ${ }^{\dagger}$ |
| CIED 4533 | Reading Comprehension Through Children's and Adolescent Literature ${ }^{\dagger}$ |
| STEM 4033 | Introduction to STEM Education ${ }^{\dagger}$ |
| Total Hours | 123 |
| $\dagger$ Complete all r noted. <br> 1 Or any 3-hour <br> 2 Two semesters Spring. <br> ${ }^{3}$ Must have a g | quirements with grade ' $C$ ' or better unless otherwise <br> Arkansas history course. required for licensure; one taken Fall, other taken <br> rade of " B " or better for graduation. |

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome \%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWwiL \%7C1000\&sdata=sFoXbbVeQF\%2FONOoiCaY4xAogtj \%2FyuQhynSiD\%2BQ2JKGo\%3D\&reserved=0), Arkansas Division of Elementary and Secondary Education Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions \%2Feducator\%2520effectiveness\%2Fplsb-professional-ethics-discipline\%2Fcode-of-ethics-for-arkansaseducators\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Cfddbbc3e102c494e5d4408d896ddc5c6\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiL \%7C1000\&sdata=HAyKtJYGbZoSMPMzHTIYRBguhdsLD9\%2BEC3RHOnBKmZQ $\% 3$ \&\&reserved=0), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1．Any incident of ethical misconduct or concern will be documented by the faculty member（s），discussed directly with the student and their mentor，and referred to the program＇s coordinator or supervising faculty．It may also be reported to the Teacher Candidate Professional Review Committee．
2．The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action，which may range from a zero score on the academic and／or internship work，a failing grade for the course，probation，up to dismissal from a teacher education program．
3．Any candidate may be suspended by a Teacher Education Program Coordinator for extreme，unforeseen circumstances such as endangerment of students or others，disruption of schools or classes， felonious behaviors，or ethical violations（i．e．Arkansas Code of Ethics，Code of Student Life）．Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent．

The Program Coordinator，in consultation with the Teacher Education Professional Review Committee and the Dean＇s Office for Academic and Student Affairs in the College of Education and Health Professions，has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and／or not recommend the student for licensure．

More detailed guidelines about the policies，supports，and other requirements are provided in the program＇s handbook， as well as on the Office of Teacher Education website（https：／／ teacher－education．uark．edu／）or the Teacher Education Support page（https：／／nam11．safelinks．protection．outlook．com／？ url＝https\％3A\％2F\％2Fteacher－education．uark．edu\％2Fsupport \％2Findex．php\＆data＝04\％7C01\％7Ckmamisei\％40uark．edu \％7Cfddbbc3e102c494e5d4408d896ddc5c6\％7C79c742c4e6 \％7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1hafatisties यA \％7C1000\＆sdata＝NtOYzldvfvZ7FJ10VmHnyTGpV5gYWW93pt7azy1y6\％2F8\％ほ巴
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## Elementary Education B．S．E． Eight－Semester Plan

Because this program requires admission to progress，it does not qualify for the university＇s Eight－Semester Degree Program；however，students who qualify for admission to the program can finish a degree in four years by following the suggested order of classes below．

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I（ACTS Equivalency | 3 |  |
| $=$ ENGL 1013）（Satisfies General Education |  |  |
| Outcome 1．1） |  |  |

MATH 1203 College Algebra（ACTS Equivalency
＝MATH 1103）（or higher）（Satisfies General
Education Outcome 2．1）${ }^{1}$
or MATH 1313 Quantitative Reasoning（ACTS
Equivalency＝MATH 1113）
Satisfies General Education Outcome 3．4：${ }^{1}$
BIOL 1543 Principles of Biology（ACTS
Equivalency＝BIOL 1014 Lecture）
\＆BIOL 1541L Principles of Biology Laboratory
（ACTS Equivalency＝BIOL 1014 Lab）
or BIOL 1524 Biological Principles（ACTS
Equivalency＝BIOL 1004 Lecture）
CIED 1013 Introduction to Education
WLIT 1113 World Literature：Beginnings to 1650
CE（ACTS Equivalency＝ENGL 2113）（Satisfies
General Education Outcome 3．2）${ }^{1}$
or WLIT 1123 World Literature：1650CE to Present
（ACTS Equivalency $=$ ENGL 2123）
ENGL 1023 Composition II（ACTS Equivalency
＝ENGL 1023）（Satisfies General Education Outcome 1．1）${ }^{1}$
HIST 2003 History of the American People to
1877 （ACTS Equivalency $=$ HIST 2113）（Satisfies
General Education Outcomes 3.3 and 4．2）${ }^{1}$
or HIST 2013 History of the American People，
1877 to Present（ACTS Equivalency $=$ HIST 2123）
Satisfies General Education Outcome 4．1：${ }^{1}$
HIST 1113 Institutions and Ideas of World
Civilizations I（ACTS Equivalency＝HIST 1113）
or HIST 1123 Institutions and Ideas of World

＝GEOL 1114 Lecture）
\＆GEOS 1111L Physical Geology Laboratory
（ACTS Equivalency＝GEOL 1114 Lab）
Satisfies General Education Outcome 3．1：${ }^{1}$
ARHS 1003 Basic Course in the Arts：Art Lecture
（ACTS Equivalency $=$ ARTA 1003）
or MLIT 1003 Experiencing Music（ACTS
Equivalency＝MUSC 1003）

Year Total：
Second Year Fall

CIED 1003 Introduction to Technology in Education

GEOS 1123 Human Geography（ACTS
Equivalency＝GEOG 1113）
or ANTH 1023 Introduction to Cultural
Anthropology（ACTS Equivalency＝ANTH 2013）
COMM 1313 Public Speaking（ACTS Equivalency
＝SPCH 1003）（Satisfies General Education
Outcomes 1.2 and 5．1）${ }^{1}$
or COMM 2323 Interpersonal Communication
MATH 2213 Survey of Mathematical Structures I
3

PHYS 1034 Physics for Elementary Education

## Majors

or GEOS 1133/1131L Earth Science (ACTS
Equivalency $=$ GEOL 1124 Lecture)
or ASTR 2003/2001L Survey of the Universe
(ACTS Equivalency = PHSC 1204 Lecture)
or STEM 4104 Astronomy for Educators
PLSC 2003 American National Government (ACTS
Equivalency = PLSC 2003) (Satisfies General Education Outcome 3.3) ${ }^{1}$
MATH 2223 Survey of Mathematical Structures II
CIED 3013 Development and Learning Theories in

## the K-6 Classroom

HIST 3383 Arkansas and the Southwest (or any
3hr Arkansas history course)
COMM 1233 Media, Community and Citizenship or PHIL 2003 Introduction to Philosophy (ACTS Equivalency = PHIL 1103)
or PHIL 2103 Introduction to Ethics (ACTS
Equivalency = PHIL 1003)
or PHIL 2203 Logic (ACTS Equivalency = PHIL 1003)
or PHIL 3103 Ethics and the Professions
or PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103)
Year Total:
Third Year Fall

CIED 2943 Foundations of Language and Literacy 3
CIED 3113 Emergent Literacy
CIED 3123 Mathematics Methods in the K-6

## Classroom

ECON 3053 Economics for Elementary Teachers
or ECON 2143 Basic Economics: Theory and Practice
STEM 4033 Introduction to STEM Education
CIED 4183 Instruction and Assessment of Writing
CIED 3453 Developmental Literacy
CIED 3133 Integrated Social Studies for the K-6
Classroom
CIED 3053 The Emerging Adolescent
STEM 3143 Teaching Science in the Elementary

## Grades

Year Total:
Fourth Year
Fall

Units
Spring


## Courses

CIED 1003. Introduction to Technology in Education. 3 Hours.
A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning. (Typically offered: Fall, Spring and Summer)

## CIED 1013. Introduction to Education. 3 Hours.

Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. An 18-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings is incorporated in this introductory course to education. (Typically offered: Fall and Spring)
CIED 2083. Innovation and Creativity in Daily Practice. 3 Hours.
Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
CIED 2943. Foundations of Language and Literacy. 3 Hours.
A foundational study of language and literacy with an emphasis on content
knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)

CIED 3013. Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 3013H. Honors Development and Learning Theories in the K-6

 Classroom. 3 Hours.This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3013.

## CIED 3023. Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3023H. Honors Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.
CIED 3033. Classroom Learning Theory. 3 Hours.
A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3033H. Honors Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3033.

## CIED 3053. The Emerging Adolescent. 3 Hours.

This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)
CIED 3103. Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

## CIED 3113. Emergent Literacy. 3 Hours.

An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years. Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

## CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

## CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.

Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

## CIED 3453. Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

## CIED 3453H. Honors Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.
CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

## CIED 4003. Elementary Seminar. 3 Hours.

This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)
CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)

## CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.

This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)

CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.

Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.

## CIED 4123. Literacy Assessment and Interventions in the Elementary

 Classroom. 3 Hours.An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours. This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.
A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours.
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4163. Senior Project. 3 Hours.
This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

CIED 4173. Student Teaching. 3 Hours.
Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

CIED 4183. Instruction and Assessment of Writing. 3 Hours.
Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours. Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.
CIED 4285. Teaching Experience. 5 Hours.
The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4403. Understanding Cultures in the Classroom. 3 Hours.
This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities. Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

CIED 4413. Acquiring a Second Language. 3 Hours.
The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)

CIED 4423. Teaching English as a Second Language. 3 Hours.
This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4433. The Moral Mind in Action. 3 Hours.
The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

## CIED 4443. Moral Courage. 3 Hours.

Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K -16 character education programs are discussed. (Typically offered: Spring)

CIED 4463. Culture and Learning. 3 Hours.
Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)
CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.
Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)

CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours.
This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

CIED 4533. Reading Comprehension Through Children's and Adolescent

## Literature. 3 Hours.

An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

## CIED 4953. Assessment for English Learners. 3 Hours.

This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)

CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

CIED 499VH. Honors Special Topics in Curriculum and Instruction Education. 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## English Education (EGED)

Freddie Bowles
Program Coordinator
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479-575-3035
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Curriculum and Instruction Website (https://cied.uark.edu/)
The Department of Curriculum and Instruction offers a Bachelor of Arts in Teaching in English Education that leads to licensure for 7-12 instruction. The program focuses on developing reflective practitioners based on the constructivist perspective that teachers are life-long learners, reflective practitioners themselves, and scholar researchers. The coursework is designed to develop these attributes so that students graduate as effective teachers with the knowledge, skills, and dispositions to engage students with meaningful and authentic instruction. The Bachelor of Arts in Teaching degree will also prepare students in the humanities with the pedagogical skills, the content knowledge, and the dispositions for teaching and learning in 21st century classrooms.

## B.A.T. in English Education Stage I: Pre-English Education (PEGED)

Complete all 46 hours of program pre-requisites for each content area (see below).

1. Obtain a GPA of 3.0 or better on UA coursework.
2. Complete all content and pedagogy courses with a "C" or better.
3. Complete a background check.

## Stage II: Admission to the B.A.T. Program

Admission to the Bachelor of Arts in Teaching program (B.A.T.) occurs the semester after the candidate has completed all preB.A.T. requirements, including the first three courses in education - CIED 1003, CIED 1013, and CIED 2083 - prior to a student entering one of the individual programs of study the following fall term. The B.A.T. program is competitive, and meeting the minimum requirements does not guarantee admission to the program. Applications to the B.A.T. program must be submitted by deadlines stated on the Office of Teacher Education (https://teacher-education.uark.edu/admissions/) website.

The application process includes:

1. Students must complete the application to teacher education (see the Teacher Education Application Fee (p. 53)) through the Teacher Education Office during the time period stated on the Office of Teacher Education (https://teacher-education.uark.edu/ admissions/) website. This includes completing and passing the criminal background check.*
2. Submission of B.A.T. application.
3. Submission of writing sample to content area faculty.
4. Submission of transcripts for all coursework.

* Another background check will be required prior to graduation in order to be eligible for licensure.


## Stage III: Requirements for Program Continuation and Internship

1. Maintain a cumulative GPA of 3.0 or better.
2. All professional education courses and content courses must have a grade of 'C' or better ( except SEED 3283, see below). No teaching methods courses may be taken as self-paced (correspondence) courses.

## Stage IV: Requirements for Internship Semester (spring, senior year) and Program Completion

All students in the B.A.T. program must complete the following requirements prior to being admitted to the spring semester of their senior year.

1. Students must earn a 'B' or better in the fall semester, senior year SEED 3283 practicum course.
2. Earn a cumulative GPA of 3.0 or better by the end of the fall semester, senior year. Students are not permitted to intern in the spring if the GPA requirement has not been met.
3. Students must have taken the appropriate Praxis II-Content Knowledge exam to be admitted to the spring semester, senior year.
4. Candidate must complete a successful internship admission interview with B.A.T. faculty. Note these interviews are scheduled with all senior students during the fall semester.
5. Satisfactorily complete the internship/student teaching experience that has been approved by the Director of Field Placement.

All students seeking licensure in the state of Arkansas are subject to a criminal background check. Background checks can take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities at least six months in advance of graduation (or six months prior to applying for a teaching license). Arkansas will not grant a teaching license to anyone who has been convicted of a felony.

## English Education Requirements

## Pre-English Education Requirements

State Minimum Core
Courses specifically required for the English Education B.A.T. program

| ENGL 1013 | Composition I (ACTS Equivalency $=$ ENGL 1013) |
| :--- | :--- |
| ENGL 1023 | Composition II (ACTS Equivalency $=$ ENGL 1023) |
| MATH 1203 | College Algebra (ACTS Equivalency $=$ MATH <br> 1103) (or higher) |
| COMM 1023 $^{\text {Communication in a Diverse World }}{ }^{1}$ |  |
| ENGL 2023 | Creative Writing I (ACTS Equivalency $=$ ENGL <br> 2013) |
| Additional Pre-English Education requirements ${ }^{1}$ | $\mathbf{9}$ |

Additional Pre-English Education requirements ${ }^{1} 9$
CIED 1013 Introduction to Education
CIED 1003 Introduction to Technology in Education
CIED 2083 Innovation and Creativity in Daily Practice


## Dismissal based on Unethical or Unprofessional Behaviors from the B.A.T. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome \%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Ca1b2cdf9639c4ba1b3ed08d897252433\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWwiL \%7C1000\&sdata=Rz4djbrQkGT\%2F6apKO7qqCfxSVIB \%2F1WVbxhHQ2C5AtBk\%3D\&reserved=0), Arkansas Division of Elementary and Secondary Education Code of Ethics (https://nam11.safelinks.protection.outlook.com/?
url=http\%3A\%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions \%2Feducator\%2520effectiveness\%2Fplsb-professional-ethics-discipline\%2Fcode-of-ethics-for-arkansaseducators\&data=04\%7C01\%7Ckmamisei\%40uark.edu

Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3) ${ }^{1}$
Humanities State Minimum Core (Satisfies General 3
Education Outcome 3.2) ${ }^{1}$
\%7Ca1b2cdf9639c4ba1b3ed08d897252433\%7C79c742c4e61c4fa5be89a3cb56a80 1 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiLCJXVCIGMn0\%3D
\%7C1000\&sdata=IW
\%2FJFyUarqY5QAsdHdGE08O8yc32sq7svsTUJ78cV74\%3D\&reserved=0), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https://teacher-education.uark.edu/ support/). Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/studentacademicappeals/).

## English Education B.A.T.

## Eight-Semester Plan

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify for admission to the program can finish a degree in four years by following the suggested order of classes below.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency |  |  |
| $=$ MATH 1103) (or higher) (Satisfies General |  |  |
| Education Outcome 2.1) |  |  |

ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education
Outcome 1.1)
Science State Minimum Core with lab (Satisfies
General Education Outcome 3.4) ${ }^{1}$
COMM 1023 Communication in a Diverse World
(Satisfies General Education Outcomes 3.3 and
4.1)

ENGL 2063 Transatlantic Literature from 1640 to 1865
CIED 1003 Introduction to Technology in Education Year Total: 15
Second Year

ENGL 2023 Creative Writing I (ACTS Equivalency 3
= ENGL 2013) (Satisfies General Education
Outcome 3.1)
Social Sciences State Minimum Core (Satisfies 3
General Education Outcome 3.3) ${ }^{1}$
Elective
3
ENGL 2053 Transatlantic Literature from 3
Beginnings to 1640
CIED 2083 Innovation and Creativity in Daily 3
Practice
U.S. History or Government State Minimum Core 3
(Satisfies General Education Outcome 4.2)
Science State Minimum Core with lab (Satisfies 4
General Education Outcome 3.4) ${ }^{1}$
ENGL 2013 Essay Writing 3
ENGL 2073 Transatlantic Literature from 1865 to 3
1945
EDST 3223 American Educational History 3
Year Total: 15

Third Year $\quad$ Fall | Units |
| ---: |
| Spring |

ENGL 3603 Topics in Rhetoric and Composition

ENGL 2043 Rethinking Literature 3
SEED 4063 Disciplinary and Interdisciplinary 3
Literacies in Education (Satisfies General
Education Outcomes 1.2 and 5.1)
CIED 4403 Understanding Cultures in the
Classroom (Satisfies General Education Outcome
4.1)

ENGL Diversity Requirement ${ }^{2}$
SEED 3993 Critical Studies in Literature for 3
Adolescents
ENGL 4303 Introduction to Shakespeare
ENGL Diversity Requirement ${ }^{2}$

## Units

| SEED 4022 Classroom Management Concepts |  |  |
| :---: | :---: | :---: |
| CIED 3033 Classroom Learning Theory |  |  |
| ENGL Elective |  |  |
| Year Total: | 15 | 17 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| ENGL Diversity Requirement ${ }^{2}$ | 3 |  |
| SEED 4203 English Language Arts/Speech \& Drama Methods of Instruction | 3 |  |
| SEED 3283 Teaching Experiences in Education | 3 |  |
| ENGL Elective | 3 |  |
| Settings |  |  |
| Elective |  |  |
| SEED 4213 Issues and Trends in Literacy (Satisfies General Education Outcome 6.1) |  |  |
| CIED 4285 Teaching Experience |  | 5 |
| Year Total: | 12 | 14 |

## Total Units in Sequence:

${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3 \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3c \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{2}$ ENGL Diversity Requirement: Choose from: ENGL 3853 / ENGL 4853 or ENGL 3553 / ENGL 4553 or ENGL 3543 / ENGL 4523 or ENGL 3583 / ENGL 4583 or ENGL 3593/ ENGL 4593.

## Courses

CIED 1003. Introduction to Technology in Education. 3 Hours.
A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning. (Typically offered: Fall, Spring and Summer)

CIED 1013. Introduction to Education. 3 Hours.
Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. An 18-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings is incorporated in this introductory course to education. (Typically offered: Fall and Spring)

CIED 2083. Innovation and Creativity in Daily Practice. 3 Hours.
Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium.
(Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

CIED 2943. Foundations of Language and Literacy. 3 Hours.
A foundational study of language and literacy with an emphasis on content knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)

## CIED 3013. Development and Learning Theories in the K-6 Classroom. 3

Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 3013H. Honors Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3013.
CIED 3023. Survey of Exceptionalities. 3 Hours.
 definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.

## CIED 3033. Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3033H. Honors Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer) This course is equivalent to CIED 3033.

## CIED 3053. The Emerging Adolescent. 3 Hours.

This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)

CIED 3103. Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

## CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.

A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

CIED 3113. Emergent Literacy. 3 Hours.
An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years.
Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

## CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

CIED 3453. Developmental Literacy. 3 Hours.
A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

## CIED 3453H. Honors Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.
CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.

Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

CIED 4003. Elementary Seminar. 3 Hours.
This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)

## CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.

This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)

CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours. Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.

Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.

## CIED 4123. Literacy Assessment and Interventions in the Elementary

 Classroom. 3 Hours.An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

## CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours.

This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.
A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours.
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4163. Senior Project. 3 Hours.

This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

## CIED 4173. Student Teaching. 3 Hours.

Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members.
Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 4183. Instruction and Assessment of Writing. 3 Hours.

Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours.
Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.

## CIED 4285. Teaching Experience. 5 Hours.

The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4403. Understanding Cultures in the Classroom. 3 Hours.

This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities.
Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

## CIED 4413. Acquiring a Second Language. 3 Hours.

The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)

CIED 4423. Teaching English as a Second Language. 3 Hours.
This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4433. The Moral Mind in Action. 3 Hours.
The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

CIED 4443. Moral Courage. 3 Hours.
Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Spring)

## CIED 4463. Culture and Learning. 3 Hours.

Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)

## CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.

Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)

CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours.
This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

## CIED 4533. Reading Comprehension Through Children's and Adolescent

 Literature. 3 Hours.An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

## CIED 4533H. Honors Reading Comprehension Through Children's and

 Adolescent Literature. 3 Hours.An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

## CIED 4953. Assessment for English Learners. 3 Hours.

This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)

CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour.
Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.
CIED 499VH. Honors Special Topics in Curriculum and Instruction Education. 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## Exercise Science (EXSC)

The program in exercise science is designed to prepare candidates for a variety of career options, including teaching physical education, coaching, analyzing and prescribing fitness programs, athletic training, or preparation for professional programs in allied health.

Graduates of this program should be well prepared to enter graduate programs of study in such areas as exercise physiology, biomechanics, athletic training, sport management, medical school, physical therapy school, and other allied health professional schools.

## Requirements for B.S. in Exercise Science

## Requirements for the B.S. in Exercise Science

Students must have 40 hours of 3000/4000-level classes to graduate.

## State Minimum Core

MATH - A prerequisite course, MATH 1203, may be required.
MATH 1213 Plane Trigonometry (ACTS Equivalency = MATH 1203)
or MATH 12\&A@calculus Mathematics (ACTS Equivalency $=$ MATH 1305)
or MATH 2554alculus I (ACTS Equivalency = MATH 2405)
BIOL 1543 Principles of Biology (ACTS Equivalency $=$ BIOL
\& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS
Equivalency = BIOL 1014 Lab)
or BIOL 158،Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture)
CHEM 1103 University Chemistry I (ACTS Equivalency =
\& CHEM 1101LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)
or CHEM 1203nemistry for Majors I
\& CHEM 120athd Chemistry for Majors I Laboratory
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103)

Additional Required Sciences (20 hours)

| BIOL 2443 <br> \& BIOL 2441L | ```Human Anatomy (ACTS Equivalency = BIOL 2404 Lecture) and Human Anatomy Laboratory (ACTS Equivalency = BIOL 2404 Lab)``` | 4 |
| :---: | :---: | :---: |
| $\begin{aligned} & \text { BIOL } 2213 \\ & \text { \& BIOL 2211L } \end{aligned}$ | Human Physiology (ACTS Equivalency = BIOL 2414 Lecture) <br> and Human Physiology Laboratory (ACTS $\text { Equivalency = BIOL } 2414 \text { Lab) }$ | 4 |
| CHEM 1123 <br> \& CHEM 1121L <br> or CHEM 1223 <br> \& CHEM 1221L | University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) <br> and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) <br> Chemistry for Majors II and Chemistry for Majors II Laboratory | 4 |
| CHEM 2613 <br> \& CHEM 2611L <br> or CHEM 3603 <br> \& CHEM 3601L <br> or CHEM 3703 <br> \& CHEM 3702 | Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency $=$ CHEM 1224 Lab) <br> Organic Chemistry I Land Organic Chemistry I Laboratory <br> Organic Chemistry I Lecture for Chemistry Majors and Organic Chemistry I Lab for Chemistry Majors | 4-5 |
| PHYS 2013 <br> \& PHYS 2011L | ```College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)``` | 4 |

Additional Non-EXSC Requirements (12 hours)
NUTR 1213 Fundamentals of Nutrition 3
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 3 1003)

STAT $2303 \quad$ Principles of Statistics (ACTS Equivalency $=$ MATH 3 2103)
or PSYC 2013 Introduction to Statistics for Psychologists
or SOCI 3303 Social Data and Analysis
or STAT 2823 Biostatistics
PSYC 3023 Abnormal Psychology 3
Exercise Science Core Required ( 30 hours)
EXSC 2663 Terminology for the Health Professions ${ }^{1} 3$
EXSC 2733 Introduction to Exercise Science 3
EXSC 3153 Exercise Physiology 3
EXSC 3353 Mechanics of Human Movement 3
EXSC 3533 Laboratory Techniques 3
EXSC 4323 Exercise Prescription 3
EXSC 4783 Sport and Exercise Psychology 3
EXSC 4833 Exercise Applications for Special Populations 3
or EXSC 48331-Honors Exercise Applications for Special Populations
EXSC 4903 Internship in Exercise Science ${ }^{2}$
or EXSC 405V Independent Study
or EXSC 498VトExercise Science Honors Thesis/Project
EXSC Elective 3
Related Electives chosen from EXSC, PBHL, CHLP, SOCI, SPED, 15 FDSC, NUTR, CHEM, STAT, CDIS, BIOL, ANTH, HDFS, ANSC, CNED, PHED, PSYC, SCWK, HRWD, HESC, POSC, PHYS, RESM, MATH

| General Electives | $7-8$ |
| :--- | ---: |
| Total Hours | 120 |

${ }^{1}$ EXSC 2663 is cross-listed with PBHL 2663.
${ }^{2}$ EXSC 498VH option available only if completing Honors Program

## Exercise Science B.S. <br> Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan in Kinesiology should see the Eight-Semester Degree Policy (p. 67) for university requirements of the program. Students must have 40 hours of 3000/4000level classes to graduate. Find out more about the state minimum core (p. 81) requirements.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| $=$ ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |

Choose from (Satisfies General Education Outcome 3.4): ${ }^{1}$

CHEM 1103 University Chemistry I (ACTS
4
Equivalency = CHEM 1414 Lecture)
\& CHEM 1101L University Chemistry I Laboratory
(ACTS Equivalency $=$ CHEM 1414 Lab)
or CHEM 1203 and CHEM 1201L
Choose from (Satisfies General Education
Outcome 2.1 if MATH is taken): ${ }^{1}$
General Elective (recommend MATH 1203 if appropriate)
MATH 1213 Plane Trigonometry (ACTS
Equivalency = MATH 1203)
or MATH 1284C Precalculus Mathematics
(ACTS Equivalency $=$ MATH 1305)
or MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)

Fine Arts or Humanities State Minimum Core
(Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$
Satisfies General Education Outcome 3.4:
BIOL 1543 Principles of Biology (ACTS
Equivalency = BIOL 1014 Lecture)
\& BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
or BIOL 1584 Biology for Majors (ACTS
Equivalency = BIOL 1014 Lecture)
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
\& CHEM 1121L University Chemistry II Laboratory
(ACTS Equivalency = CHEM 1424 Lab)
or CHEM 1223 and CHEM 1221L
Choose from:
General Elective (if math requirement met excluding STAT 2303)

MATH 1213 Plane Trigonometry (ACTS
Equivalency = MATH 1203)
or MATH 1284C Precalculus Mathematics
(ACTS Equivalency = MATH 1305)
or MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)

COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1)
Year Total: 17

| Second Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| EXSC 2733 Introduction to Exercise Science <br> (Satisfies General Education Outcome 4.1) | 3 |  |
| NUTR 1213 Fundamentals of Nutrition |  |  |
| Choose from (Satisfies General Education |  |  |
| Outcome 4.2): |  |  | 3 BIOL 2404 Lecture)

\& BIOL 2441L Human Anatomy Laboratory (ACTS
Equivalency = BIOL 2404 Lab)
PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies General
Education Outcome 3.3)
STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
or PSYC 2013 Introduction to Statistics for
Psychologists
or SOCI 3303 Social Data and Analysis
or STAT 2823 Biostatistics
BIOL 2213 Human Physiology (ACTS Equivalency
= BIOL 2414 Lecture)
\& BIOL 2211L Human Physiology Laboratory
(ACTS Equivalency = BIOL 2414 Lab)
General Elective
Social Sciences State Minimum Core (Satisfies
General Education Outcome 3.3) ${ }^{1}$
Year Total:

Third Year
Fall
4
= PHYS 2014 Lecture)
\& PHYS 2011L College Physics I Laboratory
(ACTS Equivalency = PHYS 2014 Lab)
EXSC 3153 Exercise Physiology
EXSC 3353 Mechanics of Human Movement 3
General Elective

Units


EXSC 3423. Principles and Theories of Strength and Conditioning. 3 Hours. This course will provide the practical skills necessary to design strength and conditioning programs. Special emphasis is placed on the ability to evaluate exercise movements, prescribe appropriate exercise programs, administer tests, and support program prescription with a sound knowledge of anatomical and physiological adaptation to exercise. The course will include laboratory experiences integrated with didactic learning. The laboratory experiences will in teach students various skills such as how to set up and run speed, agility, and quickness drills, how to select and administer the appropriate tests for athletic performance, and how to evaluate Olympic lifting technique. Everyone must participate in the labs as subjects. Come to lab prepared to exercise. When students are finished with this course, they will be well prepared to take the CSCS exam given by the National Strength and Conditioning Association. Corequisite: EXSC 3421L. Prerequisite: (BIOL 2443 and BIOL 2441L) and (BIOL 2213 and BIOL 2211L). (Typically offered: Spring)

## EXSC 3533. Laboratory Techniques. 3 Hours.

Practical experience in testing physical fitness in both the laboratory and nonlaboratory settings. Pre- or Corequisite: EXSC 3153. (Typically offered: Fall, Spring and Summer)

EXSC 3723H. Honors Research Methods in Exercise Science. 3 Hours. This course will provide an overview of research methods for experimental research designs in exercise science. The students will learn facets of research including: developing a research idea, getting funding for research, obtaining IRB/IACUC approval, data collection, data input, statistical analyses, and preparing manuscripts for publication. Designed for exercise science honors students in spring of their junior year or the summer prior to their senior year to prepare them for their honor's thesis. Prerequisite: Honors standing. (Typically offered: Spring)
This course is cross-listed with PBHL 3723H.
EXSC 3901H. Exercise Science Honors Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and EXSCBS major. (Typically offered: Fall, Spring and Summer)

EXSC 391V. Special Topics in EXSC. 1-3 Hour.
Designed to cover specialized topics not presented in exercise science coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

## EXSC 4013. Clinical Exercise Physiology. 3 Hours.

The course is designed to build upon prior knowledge of Exercise Physiology and Exercise Testing. We will examine the physiological impacts of exercise and exercise training with specific emphasis on how they relate to clinical outcomes and clinical testing. At the end of the course students should have developed competencies congruent with the objectives of the American College of Sports Medicine's (ACSM) certification for Clinical Exercise Physiologist. Prerequisite: EXSC 3153 and EXSC 3533. (Typically offered: Fall)

EXSC 405V. Independent Study. 1-3 Hour.
Provides students an opportunity to pursue special study of research problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

## EXSC 405VH. Honors Independent Study. 1-4 Hour.

Provides students an opportunity to pursue special study of research problems.
Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 4 hours of degree credit.
This course is equivalent to EXSC 405 V .
EXSC 4323. Exercise Prescription. 3 Hours.
This course is designed to provide knowledge and application of sound exercise prescription principles and design of exercise programs in cardiorespitory fitness, muscular fitness, body composition, flexibility, and balance. Pre- or corequisite: EXSC 3533. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring)

## EXSC 4323H. Honors Exercise Prescription. 3 Hours.

This course is designed to provide knowledge and application of sound exercise prescription principles and design of exercise programs in cardiorespitory fitness, muscular fitness, body composition, flexibility, and balance. Pre- or corequisite: EXSC 3533. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring) This course is equivalent to EXSC 4323.

## EXSC 4773. Performance and Drugs. 3 Hours.

The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring)

EXSC 4773H. Honors Performance and Drugs. 3 Hours.
The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. Prerequisite: EXSC 3153 and honors standing. (Typically offered: Fall and Spring) This course is equivalent to EXSC 4773.

## EXSC 4783. Sport and Exercise Psychology. 3 Hours.

This course examines how individuals behave in physical activity, exercise, and sport settings. Psychological antecedents and consequences of primary and secondary involvement in exercise, sport, and related physical activities will be introduced. Prerequisite: PSYC 2003. (Typically offered: Fall and Summer)

## EXSC 4783H. Honors Sport and Exercise Psychology. 3 Hours.

This course examines how individuals behave in physical activity, exercise, and sport settings. Psychological antecedents and consequences of primary and secondary involvement in exercise, sport, and related physical activities will be introduced. Prerequisite: Honors standing and PSYC 2003. (Typically offered: Fall) This course is equivalent to EXSC 4783.

EXSC 4833. Exercise Applications for Special Populations. 3 Hours.
The study of the effects of exercise, exercise training, and other stressors in special groups. A detailed study of the biomechanical and physiological effects of exercise on the elderly, the diabetic, the post-coronary, and the individual with functional limitations. Prerequisite: EXSC 3353, EXSC 3153, EXSC 3533, and EXSC 4323. (Typically offered: Fall and Spring)

EXSC 4833H. Honors Exercise Applications for Special Populations. 3 Hours. The study of the effects of exercise, exercise training, and other stressors in special groups. A detailed study of the biomechanical and physiological effects of exercise on the elderly, the diabetic, the post-coronary, and the individual with functional limitations. Prerequisite: EXSC 3353, EXSC 3153, EXSC 3533, EXSC 4323 and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to EXSC 4833.

## EXSC 4903. Internship in Exercise Science. 3 Hours.

Provides opportunities for students in Exercise Science to gain experience in clinics, hospitals, fitness centers, athletic training facilities or related settings. Preor Corequisite: EXSC 3533. Prerequisite: EXSC 3353 and EXSC 3153. (Typically offered: Fall, Spring and Summer)
EXSC 498VH. Exercise Science Honors Thesis/Project. 1-3 Hour.
Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, EXSCBS, KINSBS, or PHEDBS major, and KINS 3901H or EXSC 3723H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## French Education (FRED)

Freddie Bowles
Program Coordinator

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479-575-3035
Email: fbowles@uark.edu
Curriculum and Instruction Website (https://cied.uark.edu/)
The Department of Curriculum and Instruction offers a Bachelor of Arts in Teaching in French Education that leads to licensure for K-12 instruction. The program focuses on developing reflective practitioners based on the constructivist perspective that teachers are life-long learners, reflective practitioners themselves, and scholar researchers. The coursework is designed to develop these attributes so that students graduate as effective teachers with the knowledge, skills, and dispositions to engage students with meaningful and authentic instruction. The Bachelor of Arts in Teaching degree will also prepare students in the humanities with the pedagogical skills, the content knowledge, and the dispositions for teaching and learning in 21st century classrooms.

## B.A.T. in French Education

## Stage I: Pre-French Education (PFRED)

Complete all 46 hours of program pre-requisites for each content area (see below).

1. Obtain a GPA of 3.0 or better on UA coursework.
2. Complete all content and pedagogy courses with a "C" or better.
3. Complete a background check.

## Stage II: Admission to the B.A.T. Program

Admission to the Bachelor of Arts in Teaching program (B.A.T.) in the five content areas occurs the semester after the candidate has completed all pre-B.A.T. requirements including the first three courses in education CIED 1013, CIED 1003, and CIED 2083 - prior to a student entering the individual program of study the following fall term. The B.A.T. program is competitive, and meeting the minimum requirements does not guarantee admission to the program. Applications to the B.A.T. program must be submitted by deadlines stated on the Office of Teacher Education (https:// teacher-education.uark.edu/admissions/) website.

The application process includes:

1. Students must complete the application to teacher education (see the Teacher Education Application Fee (http://teachereducation.uark.edu/admissions/)) through the Teacher Education Office during the time period stated on the Office of Teacher Education website.. This includes completing and passing the criminal background check.*
2. Submission of B.A.T. application.
3. Submission of writing sample to content area faculty.
4. Submission of transcripts for all coursework.

* Another background check will be required prior to graduation in order to be eligible for licensure.


## Stage III: Requirements for Program Continuation and Internship

1. Maintain a cumulative GPA of 3.0 or better.
2. All professional education courses and content courses must have a grade 'C' or better (except SEED 3283 below). No teaching methods courses may be taken as self-paced (correspondence) courses.

## Stage IV: Requirements for Internship Semester (spring, senior year) and Program Completion

All students in the B.A.T. program must complete the following requirements prior to being admitted to the spring semester of their senior year.

1. Students must earn a "B" or better in the fall semester, senior year SEED 3283 practicum course.
2. Earn a cumulative GPA of 3.0 or better by the end of the fall semester, senior year. Students are not permitted to intern in the spring if the GPA requirement is not met.
3. Students must have taken the appropriate Praxis II-Content Knowledge exam to be admitted to the spring semester, senior year.
4. Candidate must complete a successful "internship admission interview" with B.A.T. faculty. Note these interviews are scheduled with all senior students during the fall semester.
5. Satisfactorily complete the internship/student teaching experience that has been approved by the Director of Field Placement.

All students seeking licensure in the state of Arkansas are subject to a criminal background check. Background checks can take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities at least six months in advance of graduation (or six months prior to applying for a teaching license). Arkansas will not grant a teaching license to anyone who has been convicted of a felony.

## French Education Requirements

## Pre-French Education requirements

University Core (State Minimum Core)
Courses specifically required for FREDBA program
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) ( or higher)

COMM 1023 Communication in a Diverse World ${ }^{1}$
FREN 2013 Intermediate French II (ACTS Equivalency = FREN 2023)

Additional Pre-French Education requirements ${ }^{1} 9$
$\begin{array}{ll}\text { CIED 1013 } & \text { Introduction to Education } \\ \text { CIED 1003 } & \text { Introduction to Technology in Education } \\ \text { CIED 2083 } & \text { Innovation and Creativity in Daily Practice }\end{array}$
$\begin{array}{ll}\text { CIED } 2083 \text { Innovation and Creativity in Daily Practice } \\ \text { Education Requirements }{ }^{\mathbf{1}} & \mathbf{3 1}\end{array}$
EDST 3223 American Educational History
CIED 3033 Classroom Learning Theory
CIED 4023 Teaching in Inclusive Secondary Settings
or CIED 302:Survey of Exceptionalities
CIED 4285 Teaching Experience
CIED 4403 Understanding Cultures in the Classroom
SEED 3283 Teaching Experiences in Education
SEED 4022 Classroom Management Concepts
SEED 4063 Disciplinary and Interdisciplinary Literacies in Education
SEED 4443 Methods of Teaching Foreign Language K-12
SEED 4523 Instructional Practices in Teaching Foreign Language

| French Language Content ${ }^{1}$ | 33 |
| :--- | ---: |
| 9 hours 4000-level Literature requirement |  |
| 3 hours Linguistic elective (suggest WLLC 3173) |  |
| FREN 3003 | Advanced French |
| FREN 3103 | Cultural Readings |
| FREN 3113 | Introduction to Literature |
| FREN 4003 | French Grammar and Composition |
| FREN 4033 | French for Oral Proficiency |
| FREN 4113 | Special Themes in French |
| FREN 4213 | French Civilization |
| General Electives | $\mathbf{1 2}$ |
| Total Hours | $\mathbf{1 2 0}$ |

${ }^{1}$ Complete all content and pedagogy courses with a "C" or better, except SEED 3283, which requires a " B " or better.

## Dismissal based on Unethical or Unprofessional Behaviors from the B.A.T. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://www.nea.org/resource-library/code-ethics-educators/), Arkansas Division of Elementary and Secondary Education Code of Ethics (https://dese.ade.arkansas.gov/Offices/educator-effectiveness/plsb-professional-ethicsdiscipline/code-of-ethics-for-arkansas-educators/), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https://teachereducation.uark.edu/) or the Teacher Education Support page (https:// teacher-education.uark.edu/support/). Students who have been dismissed
on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (p. 87).

## French Education B.A.T. Eight-Semester Plan

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify for admission to the program can finish a degree in four years by following the suggested order of classes below.

| First Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher) (Satisfies General Education Outcome 2.1) | 3 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| FREN 2013 Intermediate French II (ACTS Equivalency = FREN 2023) | 3 |  |
| CIED 1013 Introduction to Education | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| Science State Minimum Core with lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  | 4 |
| COMM 1023 Communication in a Diverse World (Satisfies General Education Outcome 3.3) |  | 3 |
| FREN 3003 Advanced French |  | 3 |
| CIED 1003 Introduction to Technology in Education |  | 3 |
| Year Total: | 15 | 16 |
| Second Year |  | Units |
|  | Fall | Spring |
| Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| FREN 3113 Introduction to Literature | 3 |  |
| FREN 4113 Special Themes in French | 3 |  |
| Practice |  |  |
| U.S. History or Government State Minimum Core (Satisfies General Education Outcomes 3.2 and 4.2) ${ }^{1}$ |  | 3 |
| Science Core with lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  | 4 |
| FREN 4003 French Grammar and Composition |  | 3 |
| FREN 3103 Cultural Readings |  | 3 |
| EDST 3223 American Educational History |  | 3 |
| Year Total: | 15 | 16 |


| Third Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| 4000-level Literature course | 3 |  |
| FREN 4033 French for Oral Proficiency | 3 |  |
| SEED 4063 Disciplinary and Interdisciplinary Literacies in Education (Satisfies General Education Outcomes 1.2 and 5.1) | 3 |  |
| CIED 4403 Understanding Cultures in the Classroom (Satisfies General Education Outcome 4.1) | 3 |  |
| General Elective | 3 |  |
| 4000-level Literature course |  | 3 |
| FREN 4213 French Civilization |  | 3 |
| CIED 3033 Classroom Learning Theory |  | 3 |
| SEED 4022 Classroom Management Concepts |  | 2 |
| General Elective |  | 6 |
| Year Total: | 15 | 17 |
| Fourth Year |  | Units |
|  | Fall | Spring |
| 4000-level Literature course | 3 |  |
| Linguistic Elective (suggest WLLC 3173) | 3 |  |
| CIED 4023 Teaching in Inclusive Secondary Settings (or Elective) or CIED 3023 Survey of Exceptionalities | 3 |  |
| SEED 3283 Teaching Experiences in Education | 3 |  |
| SEED 4443 Methods of Teaching Foreign Language K-12 | 3 |  |
| CIED 4023 Teaching in Inclusive Secondary Settings (or Elective) or CIED 3023 Survey of Exceptionalities |  | 3 |
| SEED 4523 Instructional Practices in Teaching Foreign Language (Satisfies General Education Outcome 6.1) |  | 3 |
| CIED 4285 Teaching Experience |  | 5 |
| Year Total: | 15 | 11 |

## Total Units in Sequence:

${ }^{1}$ Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.

## Courses

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A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning. (Typically offered: Fall, Spring and Summer)

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Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. An 18-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings is incorporated in this introductory course to education. (Typically offered: Fall and Spring)

CIED 2083. Innovation and Creativity in Daily Practice. 3 Hours.
Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 2943. Foundations of Language and Literacy. 3 Hours.

A foundational study of language and literacy with an emphasis on content knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)

CIED 3013. Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
CIED 3013H. Honors Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3013.

## CIED 3023. Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3023H. Honors Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.

## CIED 3033. Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3033H. Honors Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3033.
CIED 3053. The Emerging Adolescent. 3 Hours.
This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)

CIED 3103. Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

## CIED 3113. Emergent Literacy. 3 Hours.

An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years. Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

## CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

## CIED 3453. Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

## CIED 3453H. Honors Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.

CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

## CIED 4003. Elementary Seminar. 3 Hours.

This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)
CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)

## CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.

This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)
CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours. Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.
CIED 4123. Literacy Assessment and Interventions in the Elementary Classroom. 3 Hours.
An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)
CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours.
This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.
A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours.
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
CIED 4163. Senior Project. 3 Hours.
This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

## CIED 4173. Student Teaching. 3 Hours.

Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 4183. Instruction and Assessment of Writing. 3 Hours.

Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours.
Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.

## CIED 4285. Teaching Experience. 5 Hours.

The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4403. Understanding Cultures in the Classroom. 3 Hours.

This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities. Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

## CIED 4413. Acquiring a Second Language. 3 Hours.

The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)

## CIED 4423. Teaching English as a Second Language. 3 Hours.

This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

## CIED 4433. The Moral Mind in Action. 3 Hours.

The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

## CIED 4443. Moral Courage. 3 Hours.

Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Spring)

## CIED 4463. Culture and Learning. 3 Hours.

Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)
CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.
Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)
CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours. This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

CIED 4533. Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

CIED 4953. Assessment for English Learners. 3 Hours.
This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)
CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.
CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

CIED 499VH. Honors Special Topics in Curriculum and Instruction Education. 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## German Education (GRED)

Freddie Bowles
Program Coordinator
306 Peabody Hall
479-575-3035
Email: fbowles@uark.edu
Curriculum and Instruction Website (https://cied.uark.edu/)
The Department of Curriculum and Instruction offers a Bachelor of Arts in Teaching in German Education that leads to licensure for K-12 instruction. The program focuses on developing reflective practitioners based on the constructivist perspective that teachers are life-long learners, reflective practitioners themselves, and scholar researchers. The coursework is designed to develop these attributes so that students graduate as effective teachers with the knowledge, skills, and dispositions to engage students with meaningful and authentic instruction. The Bachelor of Arts in Teaching degree will also prepare students in the humanities with the pedagogical skills, the content knowledge, and the dispositions for teaching and learning in 21 st century classrooms.

## B.A.T. in German Education

Stage I: Pre-German Education (PGRED)

## Complete all 46 hours of program pre-requisites for each content area.

1. Obtain a GPA of 3.0 or better on UA coursework.
2. Complete all content and pedagogy courses with a grade of " C " or better.
3. Complete a background check.

## Stage II: Admission to the B.A.T. Program

Admission to the Bachelor of Arts in Teaching program (B.A.T.) occurs the semester after the candidate has completed all pre-B.A.T. requirements including the first three courses in education - CIED 1013, CIED 1003, and CIED 2083 - prior to a student entering the individual program of study the following fall term. The B.A.T. program is competitive, and meeting the minimum requirements does not guarantee admission to the program. Applications to the B.A.T. program must be submitted by deadlines stated on the Office of Teacher Education (https:// teacher-education.uark.edu/admissions/) website.

The application process includes:

1. Students must complete the application to teacher education (see the Teacher Education Application Fee (p.53)) through the Teacher Education Office during the time period stated on the Office of Teacher Education (https://teacher-education.uark.edu/ admissions/) website. This includes completing and passing the criminal background check.*
2. Submission of B.A.T. application.
3. Submission of writing sample to content area faculty.
4. Submission of transcripts for all coursework.

* Another background check will be required prior to graduation in order to be eligible for licensure.


## Stage III: Requirements for Program Continuation and Internship

1. Maintain a cumulative GPA of 3.0 or better.
2. All professional education courses and content courses must have a grade 'C' or better (except SEED 3283 below). No teaching methods courses may be taken as self-paced (correspondence) courses.

## Stage IV: Requirements for Internship Semester (spring, senior year) and Program Completion

All students in the B.A.T. program must complete the following requirements prior to being admitted to the spring semester of their senior year.

1. Students must earn a 'B' or better in the fall semester, senior year SEED 3283 practicum course.
2. Earn a cumulative GPA of 3.0 or better by the end of the fall semester, senior year. Students are not permitted to intern in the spring if the cGPA requirement is not met.
3. Students must have taken the appropriate Praxis II-Content Knowledge exam to be admitted to the spring semester, senior year.
4. Candidate must complete a successful "internship admission interview" with B.A.T. faculty. Note these interviews are scheduled with all senior students during the fall semester.
5. Satisfactorily complete the internship/student teaching experience that has been approved by the Director of Field Placement.

All students seeking licensure in the State of Arkansas are subject to a criminal background check. Background checks can take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities at least six months in advance of graduation (or six months prior to applying for a teaching license). Arkansas will not grant a teaching license to anyone who has been convicted of a felony.

## German Education Requirements

## Pre-German Education requirements

University Core (State Minumum Core)
Courses specifically required for the German Education B.A.T. program


GERM 470V Special Topics (enrollment must be for 3 hours minimum)
3 hours Linguistic elective (WLLC 3173 suggested)
General Electives
Total Hours

## Dismissal based on Unethical or Unprofessional Behaviors from the B.A.T. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://www.nea.org/resource-library/code-ethics-educators/), Arkansas Division of Elementary and Secondary Education Code of Ethics (https://dese.ade.arkansas.gov/Offices/educator-effectiveness/plsb-professional-ethicsdiscipline/code-of-ethics-for-arkansas-educators/), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https://teachereducation.uark.edu/) or the Teacher Education Support page (https:// teacher-education.uark.edu/support/). Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (p. 87).

## German Education B.A.T. Eight-Semester Plan

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify for admission to the program can finish a degree in four years by following the suggested order of classes below.

| First Year |  | Un |
| :---: | :---: | :---: |
|  | Fall | Spring |
| ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (or higher) (Satisfies General Education Outcome 2.1) | 3 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| GERM 2003 Intermediate German I (ACTS Equivalency = GERM 2013) (Satisfies General Education Outcome 4.1) | 3 |  |
| CIED 1013 Introduction to Education | 3 |  |
| ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) |  | 3 |
| Science State Minimum Core with lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  |  |
| COMM 1023 Communication in a Diverse World (Satisfies General Education Outcome 3.3) |  | 3 |
| GERM 2013 Intermediate German II (ACTS <br> Equivalency = GERM 2023) |  | 3 |
| CIED 1003 Introduction to Technology in Education |  | 3 |
| Year Total: | 15 | 6 |
| Second Year |  | Units |
|  | Fall | Spring |
| Fine Arts State Minimum Core (Satisfies General Education Outcome 3.1) ${ }^{1}$ | 3 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| GERM 3003 Advanced German I | 3 |  |
| GERM 3013 Introduction to Literature | 3 |  |
| CIED 2083 Innovation and Creativity in Daily Practice | 3 |  |
| U.S. History or Government State Minimum Core (Satisfies General Education Outcomes 3.2 and 4.2) |  | 3 |
| Science State Minimum Core with lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  |  |
| GERM 3033 Conversation |  |  |
| GERM 4003 Advanced German II |  |  |
| EDST 3223 American Educational History |  |  |
| Year Total: | 15 | 16 |
| Third Year Unit |  |  |
|  | Fall | Spring |
| GERM 4123 The German Novella ${ }^{2}$ or GERM 470V Special Topics | 3 |  |
| GERM 4133 The German Drama ${ }^{2}$ or GERM 470V Special Topics | 3 |  |
| SEED 4063 Disciplinary and Interdisciplinary Literacies in Education (Satisfies General Education Outcomes 1.2 and 5.1) | 3 |  |

Units

Fall 3

Units
Spring

CIED 4403 Understanding Cultures in the Classroom (Satisfies General Education Outcome 4.1)

General Elective 3
GERM 4143 German Lyric Poetry ${ }^{2}$
or GERM 470 V Special Topics
GERM 4213 German Civilization
3
CIED 3033 Classroom Learning Theory 3
SEED 4022 Classroom Management Concepts 2
General Elective 3
General Elective 3
Year Total: 15

Fourth Year $\quad$ Fall | Units |
| ---: |
| Spring |

GERM 4123 The German Novella
3
or GERM 4133 The German Drama
SEED 4443 Methods of Teaching Foreign 3
Language K-12
Linguistic Elective (WLLC 3173 suggested) 3
SEED 3283 Teaching Experiences in Education 3
CIED 4023 Teaching in Inclusive Secondary 3
Settings (or Elective) or CIED 3023 Survey of Exceptionalities
CIED 4023 Teaching in Inclusive Secondary
Settings (or Elective)
or CIED 3023 Survey of Exceptionalities
SEED 4523 Instructional Practices in Teaching
Foreign Language (Satisfies General Education Outcome 6.1)

| CIED 4285 Teaching Experience | 5 |  |
| :--- | ---: | ---: |
| Year Total: | 15 | 11 |

Total Units in Sequence:
${ }^{1}$ Students must complete the State Minimum Core requirements (p. 81) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (p. 72), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
${ }^{2}$ Only 6 hours GERM 470 V allowed for degree credit.

## Courses

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Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

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A foundational study of language and literacy with an emphasis on content knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)
CIED 3013. Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 3013H. Honors Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3013.

## CIED 3023. Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3023H. Honors Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.

## CIED 3033. Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

CIED 3033H. Honors Classroom Learning Theory. 3 Hours.
A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3033.

## CIED 3053. The Emerging Adolescent. 3 Hours.

This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)

CIED 3103. Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

## CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.

A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

## CIED 3113. Emergent Literacy. 3 Hours.

An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years.
Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

## CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

## CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.

Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

## CIED 3453. Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

## CIED 3453H. Honors Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.

CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

CIED 4003. Elementary Seminar. 3 Hours.
This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)
CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.
This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)

CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours. Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.
CIED 4123. Literacy Assessment and Interventions in the Elementary Classroom. 3 Hours.
An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)
CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

## CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours.

This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.
A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours.
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
CIED 4163. Senior Project. 3 Hours.
This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

## CIED 4173. Student Teaching. 3 Hours.

Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 4183. Instruction and Assessment of Writing. 3 Hours.

Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours.
Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.
CIED 4285. Teaching Experience. 5 Hours.
The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4403. Understanding Cultures in the Classroom. 3 Hours.
This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities. Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

CIED 4413. Acquiring a Second Language. 3 Hours.
The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)
CIED 4423. Teaching English as a Second Language. 3 Hours.
This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

## CIED 4433. The Moral Mind in Action. 3 Hours.

The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

CIED 4443. Moral Courage. 3 Hours.
Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Spring)

CIED 4463. Culture and Learning. 3 Hours.
Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)

CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.
Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)

CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours. This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

CIED 4533. Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

CIED 4953. Assessment for English Learners. 3 Hours.
This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)
CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.
CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

CIED 499VH. Honors Special Topics in Curriculum and Instruction Education. 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## Health, Human Performance and Recreation (HHPR)

Michelle Gray<br>Interim Department Head<br>306 HPER Building<br>479-575-2857<br>rgray@uark.edu<br>Paul Calleja<br>Assistant Department Head and Graduate Coordinator<br>306C HPER Building<br>479-575-2854<br>pcallej@uark.edu<br>Health, Human Performance and Recreation website (http:// hhpr.uark.edu/)

The department offers programs leading to the B.S. degree with majors in exercise science (p. 777), public health (p. 795), or recreation and sport management (p. 799). and teaching K-12 physical education and health (p. 822).

The department also offers a minor in outdoor leadership (p. 803).

Buttram, Mance E., Ph.D., M.A. (Florida International University), M.A. (University of Arizona), Associate Professor, 2021.
Calleja, Paul C., Ph.D., M.S. (University of Arkansas), B.S. (San Jose
State University), Clinical Professor, 2003, 2018.
Davis, Robert, Ph.D., M.S., B.S. (University of Mississippi), Assistant Professor, 2018.
Dobbs, Page, Ph.D., M.S., B.S., (University of Arkansas), Assistant Professor, 2020.
Edmonston, Craig, M.S. (University of Kansas), B.S. (Kansas State University), Instructor, 2016.
Elbin, R. J., Ph.D. (Michigan State University), M.A., B.A. (University of New Orleans), Associate Professor, 2013, 2018.
Gallagher, Kaitlin, Ph.D., B.Sc. (University of Waterloo, Canada), Associate Professor, 2015.
Ganio, Matthew Stueck, Ph.D. (University of Connecticut), M.S., B.S. (University of Georgia), Professor, 2011, 2020.
Gray, Michelle, Ph.D. (University of Arkansas), M.S. (Ball State University), B.S. (University of Tennessee, Chattanooga), Associate Professor, 2010.
Greene, Nicholas P., Ph.D. (Texas A\&M University), M.S., B.S. (University of South Carolina), Professor, 2013, 2022.
Hamilton, Clayton, Ph.D., M.S. (University of Arkansas), B.S.B.A. (United States Sports Academy), Instructor, 2013.
Hammig, Bart, Ph.D. (University of Kansas), M.P.H. (University of Kansas Medical Center), B.S. (University of Kansas), Professor, 2008, 2018.

Henry, Leah Jean, Ph.D. (Texas Woman's University), M.A. (Michigan State University), B.S. (Texas A\&M University), Associate Professor, 2008, 2011.
Howie-Hickey, Erin, Ph.D. (University of South Carolina), B.S. (University of Maryland), Associate Professor, 2016, 2022.
Jones, Ches, Ph.D. (University of Alabama at Birmingham), B.S.E. (Pittsburg State University), Professor, 1994.
Kern, Jack C., Ph.D. (Texas Woman's University), M.Ed. (Texas State University-San Marcos), B.S. (University of Wisconsin-LaCrosse), Clinical Professor, 1996, 2013.
Langsner, Steve, Ph.D. (Indiana University at Bloomington), M.S. (University of Baltimore), B.S. (Springfield College), Associate Professor, 1989.

Lens, Joshua, J.D. (University of lowa), B.A. (University of Northern lowa), Assistant Professor, 2018.
Lirgg, Cathy D., Ph.D. (Michigan State University), M.S. (Indiana State University), B.A. (Muskingum College), Professor, 1991, 2018.
McDermott, Brendon P., Ph.D. (University of Connecticut), M.S. (Indiana University at Bloomington), B.S. (Northeastern University), Professor, 2012, 2023.
Moiseichik, Merry Lynn, J.D. (University of Arkansas), R.Ed. (Indiana University at Bloomington), M.S., B.S.E. (State University of New York at Cortland), Professor, 1989, 2007.
Murach, Kevin A., Ph.D. (Ball State), M.S. (James Madison University), B.S. (University of North Carolina), Assistant Professor, 2021.

Parke, Elizabeth A., Ph.D. (University of Hawaii), M.S. (University of Utah), B.A. (Hope College), Assistant Professor, 2021.
Rosa-Caldwell, Megan, Ph.D. (University of Arkansas), M.S. (University of Arkansas), B.S. (Baker University), Assistant Professor, 2023.
Russell, Alex, Ph.D. (Texas A \& M University), M.A. (University of Houston), B.S. (University of Houston), Assistant Professor, 2020.
Schmitt, Abigail, Ph.D. (University of Florida), M.S. (University of Northern Colorado), B.S. (University of North Carolina), Assistant Professor, 2020.

Schmitt, Craig, Ph.D. (University of Northern Colorado), M.B.A. (University of Central Florida), B.S. (University of Florida), Teaching Assistant Professor, 2020.
Smith-Nix, Angela, Ph.D. (University of Arkansas), M.Ed., B.S.E. (Arkansas State University), Teaching Professor, 1989.
Sullivan, Amanda Lynn, Ph.D., M.A.T., B.S.E. (University of Arkansas), Clinical Associate Professor, 2010, 2018.
Vela, Luzita I., Ph.D., (Pennsylvania State University), M.S. (Barry University), B.S. (Texas Woman's University), Teaching Professor, 2021. Washington, Tyrone A., Ph.D., B.S. (University of South Carolina at Columbia), Associate Professor, 2011, 2018.

## Human Resource Development (HRDE)

106 Graduate Education Building
hrwd@uark.edu
The undergraduate Human Resource Development program is specifically designed for adults who want to complete a bachelor's degree that opens doors to opportunity and personal growth. The Human Resource Development curriculum prepares individuals to apply integrated training, organizational development, and career planning and counseling skills to the design, management, and evaluation of programs to improve individual productivity, employability, job satisfaction, and organizational effectiveness. Undergraduates also obtain a solid academic base to pursue a graduate degree. This major does not lead to traditional licensure for teachers in Arkansas.

## Requirements for B.H.R.D. in Human Resource Development

All students start the program as pre-Human Resource Development majors. To be admitted into the Human Resource Development major, the students must meet the following criteria:

1. Have three or more years of full-time work experience or equivalent.
2. Complete all 35 hours of state core courses, including the PreHuman Resource Development program requirement:

Math course chosen from:
MATH 1313 Quantitative Reasoning (ACTS Equivalency = MATH 1113)
MATH 2053 Finite Mathematics
MATH 2183 Mathematical Reasoning in a Quantitative World
STAT 2303 Principles of Statistics (ACTS Equivalency $=$ MATH 2103)

Economics course or courses chosen from:
ECON 2143 Basic Economics: Theory and Practice
ECON 2013 Principles of Macroeconomics (ACTS Equivalency
\& ECON 2023 = ECON 2103)
and Principles of Microeconomics (ACTS
Equivalency = ECON 2203)
3. Have a 2.5 or higher GPA, or have a 2.5 or higher GPA on the Human Resource Development program's required courses after completing 12 hours of HRDE coursework.

## Human Resource Development Major

University Core Requirements
ECON $2143 \quad$ Basic Economics: Theory and Practice
or ECON 201Frinciples of Macroeconomics (ACTS Equivalency =
\& ECON 202ECON 2103)
and Principles of Microeconomics (ACTS Equivalency
= ECON 2203)
3 hours Pre-HRDE Math requirement chosen from:
MATH $2183 \quad$ Mathematical Reasoning in a Quantitative World
or MATH 2053nite Mathematics
or STAT 230ßrinciples of Statistics (ACTS Equivalency = MATH
2103 )
or MATH 1319uantitative Reasoning (ACTS Equivalency = MATH
1113)

Electives
Up to 19 credit hours of electives can include technical credit that can be obtained through experiential learning credits and/or faculty approved courses. See below for Elective Options.
Suggested HRDE electives:
HRDE 4113 The Generational Dynamics in the Workplace
HRDE 4323 Instructional Technology and Design

## HRDE Required Courses

| Career Development Pillar (15 hours) |  |  |
| :---: | :---: | :---: |
| HRDE 3113 | Foundations of Human Resource Development | 3 |
| HRDE 3123 | Career Development | 3 |
| HRDE 3133 | Writing for Human Resource and Workforce Development Professionals | 3 |
| HRDE 4123 | Strategic Human Resource Development | 3 |
| HRDE 4133 | International Human Resource Development and Cultural Differentiation | 3 |
| Organization Development Pillar (15 hours) |  |  |
| HRDE 3213 | Organization Development | 3 |
| HRDE 3223 | Managing Human Resource Development Programs | 3 |
| HRDE 4213 | Workplace Diversity and Human Resource Development | 3 |
| HRDE 4223 | Professional and Leadership Development | 3 |
| HRDE 4233 | HRD Legal and Ethical Issues | 3 |
| Training and Development Pillar (15 hours) |  |  |
| HRDE 3313 | Training and Development | 3 |
| HRDE 3323 | Designing and Developing Human Resource Development Programs | 3 |
| HRDE 3333 | Communication in Human Resource and Workforce Development | 3 |
| HRDE 4313 | Human Resource Development Program and Product Evaluation | 3 |
| HRDE 4333 | Human Resource Development Capstone | 3 |
| Total Hours |  | 20 |

## Options for Electives

1. Experiential Learning HRDE 450 V
a. Credits from HRDE faculty approved National Occupational Competency Testing Institute (NOCTI) assessments accepted and assessed by the HRWD faculty NOCTI coordinator.
b. American Council on Education (ACE) and Council on Adult and Experiential Learning (CAEL) credits as accepted by the University of Arkansas' undergraduate policy will also be
accepted by the undergraduate HRDE program for Experiential Learning HRDE 450V credits.
c. 3 credit hours will be awarded for recognition from the Association for Talent Development, (formerly the American Society for Training and Development), as a Certified Professional in Learning and Performance (CPLP).
d. Credits will be given for earning from Society for Human Resource Management (SHRM) Professional in Human Resources (PHR) and Senior Professional in Human Resources (SPHR) certification. 1 credit hour will be awarded for PHR certification. 3 credit hours for SPHR certification. If a student enters the undergraduate HRWD program with PHR certification and obtains SPHR certification while in the program, they will be given an additional 2 credit hours for a maximum of 3 credit hours.
e. A maximum of 3 credit hours of Continuing Education Unit (CEU) will be accepted. 15 hours of continuing education equals 1 CEU and equals 1 credit hour. Acceptable CEU's must be in training and development, career development, or organization development.
f. A maximum of 6 hours of ROTC credit will be granted for military service in accordance with the current University of Arkansas Policy.
2. Faculty Approved courses
a. Sanctioned by HRDE faculty.
b. Related to one of the HRDE areas, including psychology, organizational behavior, adult education, occupational counseling, skill testing and evaluation, program design and evaluation, consulting practice, organizational development, training, management, development, customer service, or total quality management.
c. Suggested HRDE electives: HRDE 4113 and HRDE 4323.

## Human Resource Development Semester Plan

The nature of the Human Resource Development major excludes it from ACT 1014 eight-semester degree-completion program requirements. The HRDE degree is a 120 hour degree in accordance with ACT 747.

Presented below is a typical plan for completing this degree in four semesters; individual student plans may vary significantly.

If fewer credits than needed are earned through technical credits, completing additional appropriate coursework will require heavier course loads and/or additional semesters to graduate. The 19 hours of technical requirements can be completed at any time during the four semester program. Students are not required to complete courses during the summer, but courses may be offered. Students may be able to finish the program sooner if they enroll in summer courses.

Earned prior to Fall Semester Year 1
State Minimum Core ${ }^{1}$
Must specifically include:
3-6 hours Pre-HRDE Economics Requirement chosen from:
ECON 2143 Basic Economics: Theory and Practice or ECON 201 Prrinciples of Macroeconomics (ACTS Equivalency = \& ECON 202BCON 2103)
and Principles of Microeconomics (ACTS Equivalency = ECON 2203)
3 hours Pre-HRDE Math Requirement chosen from:
MATH 2183 Mathematical Reasoning in a Quantitative World
or MATH 2053nite Mathematics
or STAT 230Brinciples of Statistics (ACTS Equivalency = MATH
2103)
or MATH 131@uantitative Reasoning (ACTS Equivalency = MATH
1113 )
Total Hours 3

| First Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| HRDE 3113 Foundations of Human Resource | 3 |  |
| Development | 3 |  |
| HRDE 3123 Career Development | 3 |  |
| HRDE 3213 Organization Development | 3 | 3 |
| HRDE 3313 Training and Development |  | 3 |
| HRDE 3133 Writing for Human Resource and |  | 3 |
| Workforce Development Professionals |  |  |
| HRDE 3223 Managing Human Resource |  |  |

Development Programs
HRDE 3323 Designing and Developing Human
Resource Development Programs
HRDE 3333 Communication in Human Resource
and Workforce Development (Satisfies General
Education Outcomes 1.2 and 5.1)
Complete all planned NOCTI tests by March, if
any, approved by HRDE advisor and enroll in
technical requirement hours (if applicable)
Suggested:
HRDE 4113 The Generational Dynamics in the
Workplace
HRDE 4323 Instructional Technology and
Design
Year Total: 12

| Second Year |  | Units |
| :---: | :---: | :---: |
|  | Fall | Spring |
| HRDE 4123 Strategic Human Resource | 3 |  |
| Development |  |  |
| HRDE 4133 International Human Resource | 3 |  |
| Development and Cultural Differentiation (Satisfies |  |  |
| General Education Outcome 4.1) |  |  |
| HRDE 4213 Workplace Diversity and Human | 3 |  |
| Resource Development (Satisfies General |  |  |
| Education Outcome 4.2) |  |  |
| HRDE 4223 Professional and Leadership | 3 |  |
| Development |  |  |
| HRDE 4233 HRD Legal and Ethical Issues |  | 3 |
| HRDE 4313 Human Resource Development |  | 3 |
| Program and Product Evaluation |  |  |
| HRDE 4333 Human Resource Development |  | 3 |

Total Hours
Blisard, Paul, Ed.D. (University of Arkansas), M.C., B.S., B.S. (Southwest Missouri State University), Clinical Assistant Professor, 2014.
Charkasova, Aynur, Ph.D., M.S. (Southern Illinois University, Carbondale), B.A. (Azerbaijan University of Languages), Teaching Assistant Professor, 2021.
Christian, David, Ph.D., M.S. (University of North Texas), B.A. (University of Texas at Dallas), Associate Professor, 2015, 2021. Grover, Kenda Shea, Ed.D. (University of Arkansas), M.S., B.A. (Northeastern State University), Associate Professor, 2003, 2018.
Hevel, Michael Stephen, Ph.D. (University of lowa), M.A. (Bowling Green State University), B.A. (University of Kansas), Associate Professor, 2012, 2017.

Higgins, Kristin Kay, Ph.D., M.S. (University of Arkansas), B.A. (Vanderbilt University), Associate Professor, 2006, 2014.
Hughes, Claretha, Ph.D. (Virginia Polytechnic Institute and State University), M.S. (North Carolina State University), M.B.A. (University of Arkansas), B.A. (Clemson University), Professor, 2004, 2017.
Kacirek, Kit, Ed.D., M.Ed. (University of Arkansas), B.S. (University of Texas), Associate Professor, 1997, 2007.
Liang, Xinya, Ph.D. (Florida State University), B.S. (Zhejiang Gongshang University, China), Associate Professor, 2014, 2021.
Lo, Wen-Juo, Ph.D., M.A. (Arizona State University), B.S. (SooChow University), Associate Professor, 2008, 2014.
Lofton, Barbara A., Ed.D. (Grambling State University), M.A. (University of Iowa), B.S. (Jackson State University), Assistant Professor, 1996.
Lundeen, Lindsay, Ph.D. (University of Georgia), M.A. (Wake Forest University), B.S. (Kennesaw State University), Assistant Professor, 2023. Mamiseishvili, Ketevan, Ph.D., M.A. (University of Missouri-Columbia), B.A. (Akaki Tsereteli State University), Professor, 2008, 2017.

McCray, Suzanne, Ph.D. (University of Tennessee), M.A., B.A.
(University of Arkansas), Associate Professor, 2010.
Miller, Michael T., Ed.D. (University of Nebraska), M.S., B.A. (Southern Illinois University), Professor, 2003, 2005.
Murry, John, Ed.D., J.D., M.B.A., B.S.B.A., B.S. (University of Arkansas), Associate Professor, 1993, 1999.
Perryman, Kristi Leann, Ph.D. (University of Arkansas), M.S., B.S.
(Southwest Missouri State University), Associate Professor, 2014, 2022.
Popejoy, Erin O., Ph.D. (University of Texas-San Antonio), M.A. (Texas State University), B.A. (Case Western Reserve University), Assistant Professor, 2015.
Roessger, Kevin, Ph.D., M.S., B.A. (University of Wisconsin-Milwaukee), Associate Professor, 2016, 2019.
Samuels, Mandel G., M.B.A. (University of Arkansas), B.A. (Oklahoma State University), Clinical Assistant Professor, 2012, 2018.
Shelton, Leslie Jo, Ph.D. (Michigan State University), M.Ed., B.A. (Ohio University), Associate Professor, 2014, 2018.
Williams, Brent Thomas, Ph.D. (University of Illinois, UrbanaChampaign), M.S. (University of Texas Southwestern Medical School), B.A. (Austin College), Associate Professor, 2002, 2008.

Zhang, Jihong, Ph.D. (University of lowa), M.S. (University of Kansas), B.A. (Soochow University), Assistant Professor, 2023.

## Public Health (PBHL)

Public health is an exciting, diverse major that focuses on disease prevention and health promotion needs at the community level. Public health work is conducted by teams of clinicians, epidemiologists, behavioral scientists, environmental scientists, health education
specialists, health inspectors, statisticians, and health administrators. Students receiving a B.S. in Public Health will be trained for entrylevel public health positions found in government agencies, health corporations, and community non-profit organizations. Graduates are employed in a variety of settings, including: public health departments, non-governmental agencies, hospitals, health care management organizations, and health care accrediting agencies. The public health degree at the University of Arkansas is specifically focused on health promotion, health behavior and health education. In accordance, graduates are eligible for the Certified Health Education Specialist credential.

Public health is delivered in a variety of capacities to:

- Impact behavioral factors that are linked to chronic diseases, such heart disease, diabetes, and cancer.
- Promote behaviors that positively impact outcomes related to issues such as physical activity, nutrition, and sexual health.
- Prevent and control the spread of infectious diseases
- Improve access to health care
- Affect issues related to the health of the environment
- Prevent violent and unintentional injuries
- Participate in global health endeavors
- Prevent drug use and abuse
- Assure the safety of our food supply
- Manage the delivery of health services


## Requirements for B.S. in Public Health

An undergraduate major in public health leads to the Bachelor of Science degree. The minimum requirements for all students in the college are listed under general studies.

All students begin the program as pre-public health majors. To be admitted into the Public Health major, the student must meet the following criteria:

1. Complete the Pre-Public Health requirements
2. Have a 2.5 or higher University of Arkansas GPA ${ }^{1}$

## Pre-Public Health Requirements

| PSYC 2003 | General Psychology (ACTS Equivalency $=$ PSYC <br> 1103 ) | 3 |
| :--- | :--- | :--- |
| STAT 2303 | Principles of Statistics (ACTS Equivalency $=$ MATH <br> $2103)$ | 3 |

or ESRM 2403 Statistics in Nursing

| NUTR 1213 | Fundamentals of Nutrition | 3 |
| :--- | :--- | :--- |
| BIOL 2013 | General Microbiology (ACTS Equivalency = BIOL | 4 |
| \& BIOL 2011L | 2004 Lecture) <br> and General Microbiology Laboratory (ACTS |  |
|  | Equivalency = BIOL 2004 Lab) |  |
| ENGL 3053 | Technical and Professional Writing (ACTS <br> Equivalency = ENGL 2023) | 3 |

## Total Hours

${ }^{1}$ All students, including transfer students must complete at least 12 credit hours at the University of Arkansas with a minimum of 2.5 GPA.

Requirements for a Major in Public Health

| Pre-major (PBHL) | Requirements | 16 | ${ }^{3}$ Pre-major (PBHL) students are not allowed to enroll in these courses. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| State Minimum Core |  | 32 | 4 If a student earns a "D", "F", or "W" in this course, the course must be repeated. The course must be passed on the second attempt (i.e., "A", "B", or "C"). If a student earns a "D", "F", or "W" in a second attempt, the student will be unable to obtain the B.S. in Public Health degree. |  |  |
| Including these required core courses |  |  |  |  |  |
| SOCI 2013 | ```General Sociology (ACTS Equivalency = SOCI 1013)``` |  |  |  |  |
| BIOL 1543 <br> \& BIOL 1541L | ```Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)``` |  | Public Health B.S. Eight-Semester Degree Program <br> Students wishing to follow the eight-semester degree plan for the Public |  |  |
| CHEM 1103 \& CHEM 1101L <br> or CHEM 11 | University Chemistry I (ACTS Equivalency = LCHEM 1414 Lecture) and University Chemistry I Laboratory (ACTS |  | Health major should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university core requirements. |  |  |
|  | Equivalency = CHEM 1414 Lab) |  | First Year | Units |  |
|  | 1:University Chemistry II (ACTS Equivalency = CHEM |  |  | Fall | Spring |
| $\text { \& CHEM } 112$ | ¿1424 Lecture) <br> and University Chemistry II Laboratory (ACTS <br> Equivalency = CHEM 1424 Lab) |  | ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) | 3 |  |
| or CHEM 10 Fundamentals of Chemistry (ACTS Equivalency = \& CHEM 10ㄷCHEM 1214 Lecture) <br> and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) |  |  | MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103) (Satisfies General Education Outcome 2.1) <br> U.S. History or Government State Minimum Core (Select from: HIST 2003, HIST 2013, PLSC 2003) | 3 |  |
| Public Health General Course Requirements (35 hours) ${ }^{1}$ |  |  |  |  |  |
| PBHL 1103 | Personal Health and Safety ${ }^{2}$ | 3 | SOCI 2013 General Sociology (ACTS Equivalency 3 |  |  |
| PBHL 3443 | Introduction to Public Health | 3 | = SOCI 1013) (or Social Science State Minimum |  |  |
| PBHL 4613 | Principles of Epidemiology | 3 | Core, except PSYC 2003 (Satisfies General |  |  |
| PBHL 1203 | Prevention of Drug Abuse | 3 | Satisfies General Education Outcome 3.4: |  |  |
| PBHL 1303 | Introduction to Human Sexuality | 3 |  |  |  |
| COMM 1313 | $\begin{aligned} & \text { Public Speaking (ACTS Equivalency = SPCH } \\ & \text { 1003) } \end{aligned}$ | 3 | BIOL 1543 Principles of Biology (ACTS <br> Equivalency = BIOL 1014 Lecture) <br> \& BIOL 1541L Principles of Biology Laboratory | 4 |  |
| PBHL 2663 | Terminology for the Health Professions | 3 | (ACTS Equivalency = BIOL 1014 Lab) |  |  |
| SCWK 4183 <br> or SCWK 3163 | Social Work With Elders On Death and Dying | 3 | ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education |  | 3 |
| PSYC 3093 | Developmental Psychology (ACTS Equivalency = PSYC 2103) | 3 | Outcome 1.1) |  |  |
|  |  |  | Fine Arts or Humanities State Minimum Core |  | 3 |
| $\begin{aligned} & \text { BIOL } 2443 \\ & \text { \& BIOL } 2441 \mathrm{~L} \end{aligned}$ | Human Anatomy (ACTS Equivalency $=$ BIOL 2404 <br> Lecture) <br> and Human Anatomy Laboratory (ACTS <br> Equivalency = BIOL 2404 Lab) | 4 | Elective (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$ |  |  |
|  |  |  | PBHL 1103 Personal Health and Safety ${ }^{2}$ |  | 3 |
|  |  |  | NUTR 1213 Fundamentals of Nutrition |  | 3 |
| BIOL 2213 <br> \& BIOL 2211L | Human Physiology (ACTS Equivalency $=$ BIOL <br> 2414 Lecture) <br> and Human Physiology Laboratory (ACTS <br> Equivalency = BIOL 2414 Lab) | 4 | Choose one of the following courses with lab to satisfy General Education Outcome 3.4: |  |  |
|  |  |  | CHEM 1103 University Chemistry I (ACTS <br> Equivalency = CHEM 1414 Lecture) |  |  |
| Electives: $\mathbf{2 2}$ hours (10 must be $\mathbf{3 0 0 0}$ or above) |  |  | \& CHEM 1101L University Chemistry I Laboratory |  |  |
| General electives |  | 22 | (ACTS Equivalency = CHEM 1414 Lab) |  |  |
| PBHL Courses Restricted to Majors Only ${ }^{3}$ |  |  | or CHEM 1123 and CHEM 1121L |  |  |
| PBHL 3202 | Health Care and Public Health Policy | 2 | or CHEM 1073 and CHEM 1071L |  |  |
| PBHL 3643 | Public Health Program Planning and Evaluation | 3 | Year Total: | 16 | 16 |
| PBHL 4603 | Health Behavior: Theories and Application | 3 |  |  |  |
| PBHL 4643 | Multicultural Health | 3 | Second Year |  | Units |
| PBHL 3041 | Undergraduate Pre-Internship (Undergraduate Pre- 1 Internship) |  |  | Fall | Spring |
|  |  |  | PBHL 1203 Prevention of Drug Abuse or PBHL 1303 Introduction to Human Sexuality |  |  |
| PBHL 4043 | Internship in Public Health ${ }^{4}$ | 3 |  |  |  |
| Total Hours 120 |  | 120 | ENGL 3053 Technical and Professional Writing (ACTS Equivalency = ENGL 2023) |  |  |
| ${ }^{1}$ Courses open to Pre-major (PBHL) students. <br> ${ }^{2}$ Course requires C or better for degree award. |  |  |  |  |  |

PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies General
Education Outcome 3.3)
BIOL 2013 General Microbiology (ACTS
Equivalency = BIOL 2004 Lecture)
\& BIOL 2011L General Microbiology Laboratory
(ACTS Equivalency = BIOL 2004 Lab)
STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
or ESRM 2403 Statistics in Nursing
PBHL 2663 Terminology for the Health Professions
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1)
PBHL 3443 Introduction to Public Health
General Electives
PBHL 3202 Health Care and Public Health Policy
(Satisfies General Education Outcome 5.1)
Year Total:

| Third Year |  |
| :---: | :---: |
|  | Fall |
| PBHL 3643 Public Health Program Planning and Evaluation | 3 |
| PBHL 4613 Principles of Epidemiology | 3 |
| PSYC 3093 Developmental Psychology (ACTS Equivalency = PSYC 2103) | 3 |
| Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) ${ }^{1}$ | 3 |
| PBHL 1303 Introduction to Human Sexuality or PBHL 1203 Prevention of Drug Abuse | 3 |
| PBHL 4643 Multicultural Health (Satisfies General Education Outcomes 4.1 and 4.2) ${ }^{1}$ |  |
| PBHL 3041 Undergraduate Pre-Internship (Undergraduate Pre-Internship) |  |
| BIOL 2443 Human Anatomy (ACTS Equivalency = BIOL 2404 Lecture) |  |
| \& BIOL 2441 L Human Anatomy Laboratory (ACTS |  |
| Equivalency = BIOL 2404 Lab) |  |
| General Elective |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ |  |
| Year Total: | 15 |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| BIOL 2213 Human Physiology (ACTS Equivalency | 4 |  |

BIOL 2213 Human Physiology (ACTS Equivalency 4
= BIOL 2414 Lecture)
\& BIOL 2211L Human Physiology Laboratory
(ACTS Equivalency = BIOL 2414 Lab)
PBHL 4603 Health Behavior: Theories and
3
Application
General Elective
7
PBHL 4043 Internship in Public Health (Satisfies General Education Outcome 6.1) ${ }^{3}$

3 \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a
\%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general
education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
2 Course requires $C$ or better for degree award.
3 If a student earns a "D", "F", or "W" in this course, the course must be repeated. The course must be passed on the second attempt (i.e., "A", "B", or "C"). If a student earns a "D", "F", or "W" in a second attempt, the student will be unable to obtain their degree in Public Health.

Buttram, Mance E., Ph.D., M.A. (Florida International University), M.A. (University of Arizona), Associate Professor, Department of Health, Human Performance and Recreation, 2021.
Davis, Robert, Ph.D., M.S., B.S. (University of Mississippi), Assistant

## Performance and Recreation, 1994.

Russell, Alex, Ph.D. (Texas A \& M University), M.A. (University of Houston), B.S. (University of Houston), Assistant Professor, Department of Health, Human Performance and Recreation, 2020.

## Courses

PBHL 1103. Personal Health and Safety. 3 Hours.
Health and safety problems with emphasis on the promotion of individual health and safety. (Typically offered: Fall and Spring)
PBHL 1203. Prevention of Drug Abuse. 3 Hours.
Provides an overview of drugs of use and abuse in society. Also assists the student
Professor, Department of Health, Human Performance and Recreation, 2018.

Dobbs, Page, Ph.D., M.S., B.S., (University of Arkansas), Assistant Professor, Department of Health, Human Performance and Recreation, 2020.

Hammig, Bart, Ph.D. (University of Kansas), M.P.H. (University of Kansas Medical Center), B.S. (University of Kansas), Professor, Department of Health, Human Performance and Recreation, 2008, 2018.
Henry, Leah Jean, Ph.D. (Texas Woman's University), M.A. (Michigan State University), B.S. (Texas A\&M University), Associate Professor, Department of Health, Human Performance and Recreation, 2008, 2011. Jones, Ches, Ph.D. (University of Alabama at Birmingham), B.S.E. (Pittsburg State University), Professor, Department of Health, Human

| SCWK 4183 Social Work With Elders | 3 |  |
| :--- | ---: | ---: |
| or SCWK 3163 On Death and Dying |  |  |
| General Elective | 74 |  |
| Year Total: | 14 | 13 |

Total Units in Sequence: 120
${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu in evaluating drug abuse prevention approaches for public, private, or community
settings. (Typically offered: Fall and Spring)

PBHL 1303. Introduction to Human Sexuality. 3 Hours.
An examination of human sexuality with a critical analysis of male and female attitudes and values affecting self-understanding and gender identity. (Typically offered: Fall and Spring)

## PBHL 2101. Special Topics. 1 Hour.

Examination and application of health promotion concepts based on individualized health hazard appraisal. (Not to replace content courses leading to teacher certification in health education). (Typically offered: Fall and Spring) May be repeated for up to 5 hours of degree credit.

PBHL 2663. Terminology for the Health Professions. 3 Hours.
Emphasis is on word roots and combined forms of words describing various facets of health and disease. Descriptive definitions with application of practical significance included for the health professional. (Typically offered: Spring)
This course is cross-listed with EXSC 2663.
PBHL 3041. Undergraduate Pre-Internship. 1 Hour.
This course prepares students for their public health internship by providing professional development at the necessary steps for identifying and securing a Public Health Internship. (Typically offered: Fall and Spring)

PBHL 310V. Seminar in Public Health. 1-3 Hour.
Synthesis and critical analysis of current literature in the area of community health promotion. Prerequisite: PBHL majors only. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

PBHL 3202. Health Care and Public Health Policy. 2 Hours.
This course provides an introduction to health care services, inclusive of the characteristics and structure of the U.S. health care delivery system and comparison to other health systems. Aspects of public health policy, laws, ethics, and economics will be examined. Upon completion of the course, students are expected to demonstrate an understanding of the key elements of the health care industry as it pertains to medical care and public health, including an understanding of the roles of health care providers, public and private payers, the role of government, and challenges facing health care systems. Pre- or Corequisite: PBHL 1103 and PBHL 3443. Prerequisite: Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring)

PBHL 3202H. Honors Health Care and Public Health Policy. 2 Hours.
This course provides an introduction to health care services, inclusive of the characteristics and structure of the U.S. health care delivery system and comparison to other health systems. Aspects of public health policy, laws, ethics, and economics will be examined. Upon completion of the course, students are expected to demonstrate an understanding of the key elements of the health care industry as it pertains to medical care and public health, including an understanding of the roles of health care providers, public and private payers, the role of government, and challenges facing health care systems. Prerequisite: Public Health Bachelor of Science (PBHLBS) major and honors standing required. (Typically offered: Fall and Spring)
This course is equivalent to PBHL 3202.
PBHL 333V. Research in Public Health. 1-3 Hour.
This course is intended for undergraduate students who wish to gain research experience under the direction of a faculty mentor. Students will work independently and collaborate with faculty member(s) and fellow students to conduct research in a specified area of interest. The purpose of the course is for the student to develop knowledge in her/his own domain, strengthen her/his research skills, and work collaboratively on research projects. The directed research course places more emphasis on the students' role as a researcher in an academic setting. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

## PBHL 333VH. Honors Research in Public Health. 1-3 Hour.

This course is intended for undergraduate students who wish to gain research experience under the direction of a faculty mentor. Students will work independently and collaborate with faculty member(s) and fellow students to conduct research in a specified area of interest. The purpose of the course is for the student to develop knowledge in her/his own domain, strengthen her/his research skills, and work collaboratively on research projects. The directed research course places more emphasis on the students' role as a researcher in an academic setting. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.
This course is equivalent to PBHL 333V.

## PBHL 3443. Introduction to Public Health. 3 Hours.

This course is intended for undergraduate students and will focus on the foundations of public health as a profession and its future outlook. Public health concepts and practice. Topics include philosophy, purpose, history, organization, functions, tools, activities and results at national, state, and community levels. (Typically offered: Fall and Spring)

## PBHL 3633. First Responder-First Aid. 3 Hours.

Prepares persons to administer cardiopulmonary resuscitation and emergency aid to victims of serious bleeding, poisoning, shock, fracture, and other forms of injury until emergency medical services personnel arrive at the scene. (Typically offered: Irregular)
PBHL 3643. Public Health Program Planning and Evaluation. 3 Hours.
Emphasis on community analysis; defining and verifying community health problems; establishing program goals; defining and assessing health behaviors; formulating educational goals, objectives, methods, and activities; promoting programs; and designing program evaluation. Prerequisite: Public Health Bachelor of Science (PBHLBS) major. (Typically offered: Spring)
PBHL 3643H. Honors Public Health Program Planning and Evaluation. 3 Hours. Emphasis on community analysis; defining and verifying community health problems; establishing program goals; defining and assessing health behaviors; formulating educational goals, objectives, methods, and activities; promoting programs; and designing program evaluation. Prerequisite: Public Health Bachelor of Science (PBHLBS) major and honors standing. (Typically offered: Fall and Spring) This course is equivalent to PBHL 3643.

## PBHL 3723H. Honors Research Methods in Public Health. 3 Hours.

This course will provide an overview of research methods for experimental research designs in public health. The students will learn facets of research including: developing a research idea, getting funding for research, obtaining IRB/IACUC approval, data collection, data input, statistical analyses, and preparing manuscripts for publication. Designed for public health honor students in spring of their junior year or the summer prior to their senior year to prepare them for their honor's thesis. Prerequisite: Honors Standing. (Typically offered: Spring)
This course is cross-listed with EXSC 3723 H .
PBHL 3901H. Honors Public Health Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and PBHLBS major. (Typically offered: Fall, Spring and Summer)

## PBHL 391V. Special Topics in PBHL. 1-3 Hour.

Designed to cover specialized topics not presented in public health coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

PBHL 4043. Internship in Public Health. 3 Hours.
Designed to provide the student with an extended work experience in a selected community/public health program. The student works under college supervision with a professional in the health care delivery field. Pre- or Corequisite: PBHL 3643 and PBHL 4603. Prerequisite: Successful completion of PBHL 1103, Senior standing, and Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

PBHL 410V. Global Health: Issues, Concepts and Perspectives. 3-6 Hour. Emphasis placed on needs assessment, development, implementation, evaluation, and sustainability of public health initiatives designed to improve the health and well-being of community members at all levels of the health continuum; topics of focus will include determinants of health, mental health, environmental health, nutrition, maternal and child health, sexual health, injuries and chronic and infectious diseases. Prerequisite: Approval from Study Abroad to participate in the Community Development Service Learning Program. (Typically offered: Summer)

PBHL 410VH. Honors Global Health: Issues, Concepts and Perspectives. 3-6 Hour.
Emphasis placed on needs assessment, development, implementation, evaluation, and sustainability of public health initiatives designed to improve the health and well-being of community members at all levels of the health continuum; topics of focus will include determinants of health, mental health, environmental health, nutrition, maternal and child health, sexual health, injuries and chronic and infectious diseases. Prerequisite: Approval from Study Abroad to participate in the Community Development Service Learning Program. (Typically offered: Summer) This course is equivalent to PBHL 410V.

PBHL 4603. Health Behavior: Theories and Application. 3 Hours. Understanding the reasons for health behavior is vital for the health education professional. It is necessary to assist in the development of services and programs that are likely to move an individual from an unhealthy behavior to one that is more appropriate for a healthy lifestyle. This course surveys the major health behavior theories used in health education and applications of the theories will be used in the class. Prerequisite: PBHL 3443 and Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring)
PBHL 4603H. Honors Health Behavior: Theories and Application. 3 Hours. Understanding the reasons for health behavior is vital for the health education professional. It is necessary to assist in the development of services and programs that are likely to move an individual from an unhealthy behavior to one that is more appropriate for a healthy lifestyle. This course surveys the major health behavior theories used in health education and applications of the theories will be used in the class. Prerequisite: Must be a honors student, PBHL 3443 and Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring) This course is equivalent to PBHL 4603.

PBHL 4613. Principles of Epidemiology. 3 Hours.
Distribution and patterns of disease or physiological conditions within populations; an examination of the nature of epidemiological research. (Typically offered: Fall and Spring)
PBHL 4613H. Honors Principles of Epidemiology. 3 Hours.
Distribution and patterns of disease or physiological conditions within populations; an examination of the nature of epidemiological research. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to PBHL 4613.
PBHL 4623. Human Diseases. 3 Hours.
An examination of the variety, behavior, distribution, and management of both infectious and noninfectious diseases in human populations. Prerequisite: BIOL 1603 (or BIOL 1543 and BIOL 1541L). (Typically offered: Irregular)

PBHL 4643. Multicultural Health. 3 Hours.
Through lecture, discussion, simulations, and case studies, students will develop an appreciation for the cultural traditions and practices of different groups. The importance and implications of these traditions on health outcomes and health status will be examined. Students will also develop skills of cultural competence that are essential for public health practitioners today. Prerequisite: Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring)

## PBHL 4643H. Honors Multicultural Health. 3 Hours.

Through lecture, discussion, simulations, and case studies, students will develop an appreciation for the cultural traditions and practices of different groups. The importance and implications of these traditions on health outcomes and health status will be examined. Students will also develop skills of cultural competence that are essential for public health practitioners today. Prerequisite: Public Health Bachelor of Science (PBHLBS) major and honors standing required. (Typically offered: Fall and Spring)
This course is equivalent to PBHL 4643.
PBHL 498VH. Honors Public Health Thesis/Project. 1-3 Hour.
Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, PBHLBS major, and PBHL 3901H or PBHL 3723H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## Recreation and Sport Management (RESM)

The program in recreation and sport management is designed to prepare candidates for a variety of career opportunities in the field of recreation and sport management. Career opportunities may include park and recreation directors for a city, college and professional sports management, fitness center managers, state and national park managers, camp administrators, or work in YMCAs, Boys and Girls Clubs, or other youth-serving agencies. Graduates of this program should be well prepared to enter the recreation and sport workforce at an entry level position or pursue graduate studies in such areas as recreation management and sport management.

All students must complete the University Core requirements. In addition, all students must take the required general studies for the recreation and sport management core requirements listed. Recreation and sport management majors must obtain a ' C ' or better in all courses beginning with the alpha code RESM. To enroll in RESM 440V, students must have a 2.50 GPA or better in RESM core and professional elective courses, have senior standing and have completed RESM 3873 and two RESM 2011 practicums.

There are several experiential requirements within the recreation and sport management core. Students are required to do three practicum experiences (RESM 2011). Each experience totals 45 hours. A more intense experience of an internship (RESM 440V) requires a minimum of
400 hours or work full time for 12-15 weeks in an agency with a qualified park, recreation, or sport management professional.

An undergraduate major in Recreation and Sport Management leads to the Bachelor of Science degree. The minimum requirements for all students in the college are listed under general studies.

## Requirements for B.S. in Recreation and Sport Management with Recreation Administration Concentration

Curriculum for a Major in Recreation and Sport Management

Students must complete 40 hours of 3000/4000 level courses to complete degree.

State Minimum Core
Required state minimum core for major in Recreation and Sport Management:

PLSC 2003 American National Government (ACTS
Equivalency = PLSC 2003) ${ }^{2}$
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) ${ }^{2}$

SOCI 2013 General Sociology (ACTS Equivalency = SOCI 1013) ${ }^{2}$

ECON 2143 Basic Economics: Theory and Practice ${ }^{2}$ or ECON 20 Principles of Macroeconomics (ACTS Equivalency = \& ECON 20̌́ECON 2103)
and Principles of Microeconomics (ACTS Equivalency
= ECON 2203)
$\begin{array}{ll}\text { Recreation and Sport Management Major Requirements } \\ \text { COMM } 1313 & \text { Public Speaking (ACTS Equivalency }=\text { SPCH } \\ & \text { 1003) }\end{array}$
RESM 2011 Recreation and Sport Practicum (two enrollments of one hour each) ${ }^{1}$
RESM 3093 Diversity and Inclusion in Recreation and Sport Management ${ }^{1}$
RESM 2853 Leisure and Society ${ }^{1}$
RESM 3873 Law and Risk for Recreation and Sport Management ${ }^{1}$
RESM 3833 Program Planning in Recreation and Sport ${ }^{1}$
RESM 4013 Contemporary Issues in Leisure and Sport ${ }^{1}$
RESM 3083 Research in Recreation and Sport ${ }^{1}$
RESM 4411 Pre-Internship Preparation ${ }^{1}$
RESM 440V Internship (12 hours of RESM 440V required) ${ }^{1}$

## Recreation and Sports Administration Concentrations (See

Concentrations) ${ }^{1}$
12 Hours of RESM elective courses (suggested RESM electives 12 by concentration)

| RESM 1003 | Professional Foundations of Recreation and Sport <br> Management ${ }^{1 \text { SA }}$ |
| :--- | :--- |
| RESM 1023 | Foundations of Outdoor Leadership ${ }^{1 \text { RA }}$ |
| RESM 2813 | Recreation and Sport Leadership ${ }^{1 \text { SA }}$ |

## General Electives

## Related Electives of which 6 hours must be 3000/4000 level

    WCOB
    | CNED 3053 | The Helping Relationship RA |
| :--- | :--- |
| GEOS 4563 | Geology of Our National Parks RA |
| COMM 1233 | Media, Community and Citizenship RA/SA |
| COMM 3803 | Survey of Social Media RA/SA |
| MGMT 4243 | Ethics and Corporate Responsibility RA/SA |
| BUSI 1033 | Data Analysis and Interpretation RA/SA |
| MKTG 3433 | Introduction to Marketing SA |
| SOCI 3193 | Race, Class, Gender, and Sexuality SA |
| HOSP 1603 | Introduction to Hospitality Management SA |
| COMM 4803 | Seminar in Social Media SA |
| UNIV 1001 | University Perspectives RA/SA |

Total Hours

1 Course must have 'C' or better to award degree credit.
2 If ECON 2013 and ECON 2023 are taken, reduce RESMrelated electives by 3 hours to meet 120.
RA Suggested elective for recreation administration concentration.
SA Suggested elective for sports administration concentration.

Recreation Administration Concentration Requirements

| RESM 1003 | Professional Foundations of Recreation and Sport <br> Management ${ }^{1}$ | 3 |
| :--- | :--- | :--- |
| RESM 2813 | Recreation and Sport Leadership ${ }^{1}$ | 3 |
| RESM 3843 | Recreation and Sport Facilities ${ }^{1}$ | 3 |
| RESM 3883 | Marketing and Promotion in Recreation and Sport <br> Management ${ }^{1}$ | 3 |
| RESM 4003 | ${\text { Management in Recreation and Sport }{ }^{1}}^{3}$ | 3 |

Total Hours 15
${ }^{1}$ Course MUST have 'C' or better to award degree credit.

## Recreation and Sport Management with Recreation Administration Concentration Nine-Semester Plan

The Recreation Administration concentration in Recreation and Sport Management is exempt from eight-semester degree plans because students are recommended to register for RESM 440V Internship after the completion of their course work and recreation agencies have their busiest season in the summer. The following nine-semester plan, however, will guide students who wish to graduate in four years.

| First Year | Fall | Units <br> Spring <br> Summer |  |
| :--- | ---: | ---: | ---: |
| ENGL 1013 Composition I (ACTS | 3 |  |  |
| Equivalency $=$ ENGL 1013) (Satisfies <br> General Education Outcome 1.1) |  |  |  |
| MATH 1203 College Algebra (ACTS | 3 |  |  |
| Equivalency $=$ MATH 1103) (or higher <br> (Satisfies General Education Outcome |  |  |  |
| 2.1) | 3 |  |  |
| Fine Arts or Humanities State Minimum |  |  |  |
| Core (Satisfies General Education |  |  |  |
| Outcome 3.1 or 3.2) |  |  |  |

PLSC 2003 American Nationa Government (ACTS Equivalency
= PLSC 2003) (Satisfies General Education Outcome 3.3 and 4.2)
SOCI 2013 General Sociology (ACTS
Equivalency = SOCI 1013) (Satisfies
General Education Outcome 3.3)
ENGL 1023 Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies
General Education Outcomes 1.2 and 5.1)

Science State Minimum Core w/lab
(Satisfies General Education Outcome 3.4) ${ }^{1}$

RESM 1003 Professional Foundations of Recreation and Sport Management ${ }^{2}$
RESM 2853 Leisure and Society
(Satisfies General Education Outcomes
3.3 and 4.1) ${ }^{2}$

Year Total:

| Second Year | Fall |
| :--- | ---: |
| Choose from (Satisfies General |  |
| Education Outcome 3.3): |  |
| ECON 2143 Basic Economics: Theory | $3-6$ |
| and Practice |  |
| or ECON 2013 and ECON 2023 |  |
| RESM 2813 Recreation and Sport | 3 |
| Leadership $^{2}$ |  |
| RESM elective ${ }^{2}$ | 3 |
| RESM Related elective | 3 |
| Science State Minimum Core w/lab |  |
| (Satisfies General Education Outcome |  |
| 3.4) |  |
| PSYC 2003 General Psychology (ACTS |  |
| Equivalency = PSYC 1103) (Satisfies |  |
| General Education Outcome 3.3) |  |
| Humanities or Fine Arts State Minimum |  |
| Core (Satisfies General Education |  |
| Outcome 3.2 or 3.1) |  |
| RESM 3093 Diversity and Inclusion in |  |
| Recreation and Sport Management ${ }^{1}$ |  |
| Year Total: |  |

Third Year Fall

RESM elective ${ }^{2} 3$
HHPR departmental elective
RESM 3883 Marketing and Promotion
in Recreation and Sport Management ${ }^{2}$
RESM Related elective
3
HHPR departmental elective

Units
Spring Summer
${ }^{2}$ Course MUST have 'C' or better to award degree credit.
${ }^{3}$ If ECON 2013 \& ECON 2023 are taken, reduce RESM Related Electives by 3 hours to meet 120.

## Requirements for B.S. in Recreation and Sport Management with Sports Administration Concentration

Curriculum for a Major in Recreation and Sport Management

Students must complete 40 hours of 3000/4000 level courses to complete degree.

State Minimum Core
Required state minimum core for major in Recreation and Sport Management:

PLSC 2003 American National Government (ACTS
Equivalency = PLSC 2003) ${ }^{2}$
PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) ${ }^{2}$

SOCI 2013 General Sociology (ACTS Equivalency = SOCI 1013) ${ }^{2}$

ECON 2143 Basic Economics: Theory and Practice ${ }^{2}$ or ECON 20 Principles of Macroeconomics (ACTS Equivalency = \& ECON 20̌́ECON 2103)
and Principles of Microeconomics (ACTS Equivalency
= ECON 2203)
$\begin{array}{ll}\text { Recreation and Sport Management Major Requirements } \\ \text { COMM } 1313 & \text { Public Speaking (ACTS Equivalency }=\text { SPCH } \\ & \text { 1003) }\end{array}$
RESM 2011 Recreation and Sport Practicum (two enrollments of one hour each) ${ }^{1}$
RESM 3093 Diversity and Inclusion in Recreation and Sport Management ${ }^{1}$
RESM 2853 Leisure and Society ${ }^{1}$
RESM 3873 Law and Risk for Recreation and Sport Management ${ }^{1}$
RESM 3833 Program Planning in Recreation and Sport ${ }^{1}$
RESM 4013 Contemporary Issues in Leisure and Sport ${ }^{1}$
RESM 3083 Research in Recreation and Sport ${ }^{1}$
RESM 4411 Pre-Internship Preparation ${ }^{1}$
RESM 440V Internship (12 hours of RESM 440V required)

## Recreation and Sports Administration Concentrations (See

Concentrations) ${ }^{1}$
12 Hours of RESM elective courses (suggested RESM electives 12 by concentration)

| RESM 1003 | Professional Foundations of Recreation and Sport Management ${ }^{1 \text { SA }}$ |
| :---: | :---: |
| RESM 1023 | Foundations of Outdoor Leadership ${ }^{1 R A}$ |
| RESM 2813 | Recreation and Sport Leadership ${ }^{1 \text { SA }}$ |
| RESM 3063 | Commercial Recreation and Sport ${ }^{1 / R A}$ |
| RESM 3843 | Recreation and Sport Facilities ${ }^{1 \text { SA }}$ |
| RESM 3883 | Marketing and Promotion in Recreation and Sport Management ${ }^{1 \text { SA }}$ |
| RESM 4003 | Management in Recreation and Sport ${ }^{1 S A}$ |
| RESM 4023 | Applied Outdoor Adventure Leadership ${ }^{1 \text { RA }}$ |
| RESM 405V | Independent Study in Recreation and Sport ${ }^{1 \text { RA }}$ |
| RESM 4273 | The Intramural Sports Program ${ }^{1 \text { RA }}$ |
| RESM 480V | Workshop ${ }^{18 A}$ |

## General Electives

## Related Electives of which 6 hours must be 3000/4000 level 16-22

From ACCT, ANTH, CNED, COMM, EXSC, FINN, GEOS, HDFS, HESC, HHPR, HORT, HOSP, ISYS, JOUR, KINS, MGMT, MKTG, NUTR, PBHL, PHED, PSYC, RESM, SCWK, SOCI, SUST, UNIV, WCOB

## Suggested Related Electives by Concentration

| CNED 3053 | The Helping Relationship RA |
| :--- | :--- |
| GEOS 4563 | Geology of Our National Parks RA |
| COMM 1233 | Media, Community and Citizenship RA/SA |
| COMM 3803 | Survey of Social Media RA/SA |
| MGMT 4243 | Ethics and Corporate Responsibility RA/SA |
| BUSI 1033 | Data Analysis and Interpretation RA/SA |
| MKTG 3433 | Introduction to Marketing SA |
| SOCI 3193 | Race, Class, Gender, and Sexuality SA |
| HOSP 1603 | Introduction to Hospitality Management SA |
| COMM 4803 | Seminar in Social Media SA |
| UNIV 1001 | University Perspectives RA/SA |

Total Hours

1 Course must have 'C' or better to award degree credit.
2 If ECON 2013 and ECON 2023 are taken, reduce RESMrelated electives by 3 hours to meet 120.
RA Suggested elective for recreation administration concentration.
SA Suggested elective for sports administration concentration.

Sports Administration Concentration Required Courses

| RESM 1013 | Sport Management Fundamentals ${ }^{1}$ | 3 |
| :--- | :--- | :--- |
| RESM 3063 | Commercial Recreation and Sport ${ }^{1}$ | 3 |
| RESM 3073 | Managing College Athletics | 3 |
| Total Hours |  | 9 |

${ }^{1}$ Students must earn a 'C' or better in this course to be awarded degree credit.

## Recreation and Sport Management with Sports Administration Concentration Nine-Semester Plan

The Sports Administration Concentration in Recreation and Sport Management is exempt from eight-semester degree plans because students are recommended to register for RESM 440V Internship after the completion of their course work and the sport management agencies have their busiest season in the summer. The following nine-semester plan, however, will guide students who wish to graduate in four years.

## First Year

Units
Fall Spring Summer 3
Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)
MATH 1203 College Algebra (ACTS
Equivalency = MATH 1103) (or higher)
(Satifies General Education Outcome
2.1)

Fine Arts or Humanities State Minimum 3
Core (Satisfies General Education
Outcome 3.1 or 3.2) ${ }^{1}$
PLSC 2003 American National 3
= PLSC 2003) (Satisfies General
Education Outcomes 3.3 and 4.2)

SOCI 2013 General Sociology (ACTS Equivalency = SOCI 1013) (Satisfies General Education Outcome 3.3) ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)
COMM 1313 Public Speaking (ACTS
Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1)

Science State Minimum Core w/lab (Satisfies General Education Outcome 3.4) ${ }^{1}$

RESM 2853 Leisure and Society
(Satisfies General Education Outcomes
3.3 and 4.1$)^{2}$

RESM 1013 Sport Management
Fundamentals
Year Total:

Second Year
Choose from (Satisfies General
Education Outcome 3.3):
ECON 2143 Basic Economics: Theory
and Practice ${ }^{3}$
or ECON 2013 and ECON 2023
RESM $2063{ }^{2}$
RESM elective ${ }^{2} 3$
RESM Related elective 3
Science State Minimum Core w/lab
(Satisfies General Education Outcome
3.4) ${ }^{1}$

PSYC 2003 General Psychology (ACTS
Equivalency = PSYC 1103) (Satisfies
General Education Outcome 3.3)
Humanities or Fine Arts State Minimum
Core (Satisfies General Education
Outcome 3.2 or 3.1) ${ }^{1}$
RESM 3093 Diversity and Inclusion in
Recreation and Sport Management ${ }^{2}$
Year Total:

| Third Year | Fall | Spring | Units <br> Summer |
| :--- | ---: | ---: | ---: |
| RESM elective $^{2}$ | 6 |  |  |
| HHPR departmental elective | 3 |  |  |
| RESM Related elective | 3 |  |  |
| HHPR departmental elective |  | 3 |  |
| RESM Related elective |  | 3 |  |
| RESM 3833 Program Planning in |  | 1 |  |
| Recreation and Sport ${ }^{2}$ |  |  |  |
| RESM 2011 Recreation and Sport |  | 3 |  |
| Practicum |  |  |  |
| RESM 3073 Managing College Athletics |  | 12 | 13 |
| Year Total: |  |  |  |

15
3-6

4

3

3

3

13

13
2

Units
Fall Spring Summer
T. Spror

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3
$$

## Minor in Outdoor Leadership

The Outdoor Leadership minor requires completion of 15 hours of study with at least 50 percent of the courses applied toward the minor taken in residence. Each student must have a 2.00 cumulative grade-point average in the courses offered to complete the minor.

Degree-seeking students who are not majoring in the Recreation and Sport Management Program but are working toward a minor should note the following:

1. Students who elect to obtain an Outdoor Leadership minor must provide written notice of their intent to the dean's office of the college in which they are receiving a degree. This notice and all requirements
for the Outdoor Leadership minor must be completed prior to the awarding of the student's undergraduate degree.
2. All equivalencies must be approved by the program faculty in recreation and sport management.

Program Curriculum:

| Required Core (11 hours) |  |  |
| :--- | :--- | ---: |
| RESM 1023 | Foundations of Outdoor Leadership | 3 |
| RESM 1032 | Outdoor Living Skills | 2 |
| RESM 3043 | Natural Resources and Outdoor Ethics | 3 |
| RESM 4023 | Applied Outdoor Adventure Leadership | 3 |
| Skill Based Courses (4 hours) |  |  |
| RESM 1051 | Rock Climbing I | 1 |
| RESM 1061 | Rock Climbing II | 1 |
| RESM 1071 | Introduction to Mountain Biking | 1 |
| RESM 1081 | Advanced Mountain Biking | 1 |
| Total Hours |  | 15 |

Edmonston, Craig, M.S. (University of Kansas), B.S. (Kansas State University), Instructor, Department of Health, Human Performance and Recreation, 2016.
Langsner, Steve, Ph.D. (Indiana University at Bloomington), M.S. (University of Baltimore), B.S. (Springfield College), Associate Professor, Department of Health, Human Performance and Recreation, 1989.
Lens, Joshua, J.D. (University of lowa), B.A. (University of Northern lowa), Assistant Professor, Department of Health, Human Performance and Recreation, 2018.
Moiseichik, Merry Lynn, J.D. (University of Arkansas), R.Ed. (Indiana University at Bloomington), M.S., B.S.E. (State University of New York at Cortland), Professor, Department of Health, Human Performance and Recreation, 1989, 2007.
Schmitt, Craig, Ph.D. (University of Northern Colorado), M.B.A. (University of Central Florida), B.S. (University of Florida), Teaching Assistant Professor, Department of Health, Human Performance and Recreation, 2020.

## Courses

RESM 1003. Professional Foundations of Recreation and Sport Management. 3 Hours.
An analysis of the historical and philosophical development of recreation, sport and leisure. Theories of play, recreation, sport and leisure are studied. Economic, political, technical, and social forces are examined as these influence recreation, sport, parks, and leisure services is examined in context with diverse service delivery systems. Prerequisite: RESM major or RESM minor or instructor consent. (Typically offered: Fall, Spring and Summer)

## RESM 1013. Sport Management Fundamentals. 3 Hours.

This course is designed to present an overview of the fundamentals of sport management in professional and intercollegiate sport, as well as issues facing sport organizations and how management techniques can be applied to solve sport business problems. A description of career opportunities in sport will be presented with special interest in helping the student design a course of study that best meets his/her goals. Prerequisite: RESMBS major or instructor consent. (Typically offered: Fall)

RESM 1023. Foundations of Outdoor Leadership. 3 Hours.
An introduction to the philosophy and history of outdoor recreation and an examination of the theories, principles, and practices of leading others outdoors. Focus is on an introduction to outdoor technical, power, and meta-skills needed to effectively lead adventure-based programs. Emphasis is placed on communication skills, group dynamics, flexible leadership styles, problem solving, basic facilitation techniques, professionalism, and decision-making. Field visits are required in this course. (Typically offered: Fall, Spring and Summer)
RESM 1032. Outdoor Living Skills. 2 Hours.
Classroom study leading to one overnight (weekend) trip to develop personal experience in outdoor recreational activities. Topics include low impact practices, meal planning, risk management, route and description plans, equipment selection, use, maintenance, clothing systems, shelters, weather, and more. An overnight outing is required in this course. (Typically offered: Fall and Spring)

RESM 1041. Social Issues in the Outdoor Industry. 1 Hour.
Every participant in outdoor sports - be it a recreational or a competitive environment - is affected by social issues. Building a nuanced and comprehensive understanding of these issues empowers future outdoor industry professionals to address the issues in holistic ways. This course will provide an overview of a variety of topics including but not limited to patriarchy, white supremacy, heteronormativity, fatphobia, Indigenous erasure, climate advocacy, physical and neuro disabilities, tokenism, and much more. We will also learn how to stop perpetuating the harmful cycles in the outdoor industry that many of these oppressive systems create. Prerequisite: Students must have instructor consent and/or be enrolled in the Outdoor Leadership minor (ODLR). (Typically offered: Irregular)

## RESM 1051. Rock Climbing I. 1 Hour.

This course will acquaint students with the principles and practices of indoor rock climbing, rock climbing equipment, climbing systems, physics of rock climbing, climbing movement, belaying, and different approaches to rock climbing. The course will enable students to increase muscular strength, endurance, and flexibility of the body through rock climbing as a fitness activity. This course will include the Professional Climbing Instructors Association Climb Site Belayer Certification. (Typically offered: Fall and Spring)

## RESM 1061. Rock Climbing II. 1 Hour.

Designed to acquaint students with intermediate to advanced climbing movement and techniques. Emphasis is placed on advanced understanding of climbing wall equipment, inspection, and maintenance, climbing instructional techniques, assisted braking belay devices, climbing rescue, supervision, and risk management. This course will include the Professional Climbing Instructors Association Climbing Wall Instructor Certification. (Typically offered: Fall and Spring)

## RESM 1071. Introduction to Mountain Biking. 1 Hour.

This course will deliver the basic skills and resources necessary for students to develop confidence in pursuing mountain biking. Topics will include technique and handling, basic maintenance, equipment, and resources for exploring the many mountain bike trails in Northwest Arkansas. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Fall and Spring)

## RESM 1081. Advanced Mountain Biking. 1 Hour.

This course will deliver the intermediate to advanced skills and resources necessary for students to develop confidence in pursuing mountain biking. Topics will include progressive techniques and handling, advanced maintenance, and an exploration of a variety of trail types (e.g. XC, downhill, skills development, etc.) in Northwest Arkansas. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Fall and Spring)

RESM 1091. Introduction to Bike Mechanics. 1 Hour.
This course will deliver basic skills and resources necessary for students to develop maintenance and repairs on bikes. Designed to progress through all the parts of the bike and conceptualize topics taught in class. Topics include drivetrain repair and maintenance, brake repair and maintenance, headset and hub adjustments, and flat tire repair. Prerequisite: Instructor consent and/or be enrolled in the Outdoor Leadership minor (ODLR). (Typically offered: Irregular)
RESM 1101. Wilderness First Aid. 1 Hour.
This course is the industry standard for wilderness medicine certifications for outdoor guides and leaders traveling for day trips or short adventures. Certification is dependent on testing and performance and participation in the course. Through this course, students will leader how to assess, treat, prioritize illnesses and injuries in remote settings. Active engagement is required as students will participate in skills labs and simulations. Students will receive certifications from Wilderness Medicine Training Center (WMTC) for a Wilderness First Aid, Wilderness CPR, and Epinephrine. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Irregular)

RESM 1121. Soft Surface Trail Stewardship and Management. 1 Hour.
This course will deliver basic skills and resources necessary for students to learn trail design history, building techniques, maintenance, and sustainability. Topics include user access, tool usage, stonework, vegetative abatement, drainage and more. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Fall)

## RESM 1131. Introduction to Bikepacking. 1 Hour.

This course is for students interested in an introduction to bikepacking, exploring the experiences available for both mountain bike and gravel/rural road touring with a focus on the Ozarks Mountains. The course is designed to (1) teach students the introductory skills needed to successfully plan a route for a multiday bikepacking trip while (2) developing the basic understanding of bikepacking through a selfsupported but instructor led two days, one night group bikepacking trip. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Fall)

## RESM 2011. Recreation and Sport Practicum. 1 Hour.

Students are assigned to assist in leisure-oriented programs for exposure to organizational structure, services, and programming of cooperating recreational and sport agencies. Students may take 1-2 hours per semester; each credit hour is a 45-hour experience. Students must complete 2 different experiences before internship. Prerequisite: RESM 1003 or RESM 1013 with a grade of $C$ or better. (Typically offered: Fall, Spring and Summer) May be repeated for up to 2 hours of degree credit.

## RESM 2813. Recreation and Sport Leadership. 3 Hours.

Development of knowledge related to leadership theory, group dynamics, and face to face leadership techniques. Students gain an understanding of leadership theories as they are applied in a field setting. Pre- or Corequisite: COMM 1313. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Fall and Spring)

## RESM 2853. Leisure and Society. 3 Hours.

This course is an examination of leisure and its effect on society. Course content includes identification and exploration of motivating factors related to various traditional and contemporary leisure expressions as it occurs across diverse populations. (Typically offered: Fall, Spring and Summer)

## RESM 2853H. Honors Leisure and Society. 3 Hours.

This course is an examination of leisure and its effect on society. Course content includes identification and exploration of motivating factors related to various traditional and contemporary leisure expressions as it occurs across diverse populations. (Typically offered: Fall and Spring)
This course is equivalent to RESM 2853.

## RESM 3023. Sport Management Fundamentals. 3 Hours.

This course is designed to present an overview of the fundamentals of sport management in professional and intercollegiate sport, as well as issues facing sport organizations and how management techniques can be applied to solve sport business problems. A description of career opportunities in sport will be presented with special interest in helping the student design a course of study that best meets his/her goals. Prerequisite: RESM 1003 with a grade of $C$ or better. (Typically offered: Fall)

## RESM 3043. Natural Resources and Outdoor Ethics. 3 Hours.

An examination of the use and management of natural resources for outdoor recreation with consideration of multiple use, environmental ethics, risk management, and other current topics. An overnight outing is required in this course. (Typically offered: Fall and Spring)

## RESM 3063. Commercial Recreation and Sport. 3 Hours.

Examination of the commercial recreation and sport industries. The operational requirement of a wide range of recreation businesses will be studied. Case study and field investigation methods will be emphasized. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Fall and Spring)

## RESM 3073. Managing College Athletics. 3 Hours.

This course examines modern college athletics and the issues facing today's college athletics administrators. To appropriately do so, the course looks at the history of college athletics and accompanying issues. Further, the class will identify and discuss various constituencies of an athletics department as well as the various units within an athletics department. The class will examine the makeup of the NCAA and its operations as well as issues facing it. Prerequisite: RESM 1003 or RESM 1013 both with a C or better. (Typically offered: Fall)

## RESM 3083. Research in Recreation and Sport. 3 Hours.

An introduction to the applied methods and techniques of research and evaluation in recreation and sport services. General consideration given to research applications such as needs assessment, program evaluation, and marketing studies. Emphasis placed on the logic underlying the research process. Prerequisite: Junior standing and RESM 1003 or RESM 1013 both with a grade of C or better. (Typically offered: Fall and Spring)

## RESM 3083H. Honors Research in Recreation and Sport. 3 Hours.

An introduction to the applied methods and techniques of research and evaluation in recreation and sport services. General consideration given to research applications such as needs assessment, program evaluation, and marketing studies. Emphasis placed on the logic underlying the research process. Prerequisite: Honors candidacy and RESM 1003 or RESM 1013 both with a grade of C or better. (Typically offered: Fall and Spring)
This course is equivalent to RESM 3083.
RESM 3093. Diversity and Inclusion in Recreation and Sport Management. 3 Hours.
An introduction to the basic concepts of inclusive and special recreation and sport services integrated with knowledge and skill sets required to provide accessible recreation and leisure programming for people with disabilities. Prerequisite: RESM 1003 with a grade of C or better. (Typically offered: Spring)

## RESM 3833. Program Planning in Recreation and Sport. 3 Hours.

Development of the fundamentals of program planning using modern techniques of identifying and analyzing program activity areas and community needs. Includes program development and application with a variety of population groups and representative leisure service areas. Prerequisite: RESM 1003 or RESM 1013 with a grade of $C$ or better. (Typically offered: Spring)

## RESM 3843. Recreation and Sport Facilities. 3 Hours.

Planning concepts, design principles, and maintenance techniques are emphasized. Also, technical design concepts and firsthand experiences in maintenance of facilities are included. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Spring)

RESM 3873. Law and Risk for Recreation and Sport Management. 3 Hours. In-depth look at risk management and related legal issues affecting recreation and sport administration. Pre- or Corequisite: RESM major or RESM minor or by instructor consent. Prerequisite: Junior standing, and RESM 1003 or RESM 1013 both with a grade of C or better. (Typically offered: Fall)

RESM 3883. Marketing and Promotion in Recreation and Sport Management. 3 Hours.
This course provides an overview of the principles and practices of promotions and marketing in the recreation and sport industry. Topics include sport marketing planning, market segmentation and identification of the target market, marketing mix, and sponsorship. Credits: three hours. Prerequisite: (RESM 1003 or RESM 1013 with a grade of C or better), and (ECON 2143 or (ECON 2013 and ECON 2023)). (Typically offered: Fall and Spring)

RESM 3901H. Honors Recreation and Sport Management Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy, RESMBS major, and RESM 1003 with a grade of C or better. (Typically offered: Fall, Spring and Summer)

RESM 391V. Special Topics in RESM. 1-3 Hour.
Designed to cover specialized topics not presented in recreation and sport management coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

RESM 4003. Management in Recreation and Sport. 3 Hours.
Management techniques for recreation and sport programs and facilities.
Prerequisite: RESM 1003 or RESM 1013 with a grade of $C$ or better. (Typically offered: Fall and Spring)

## RESM 4013. Contemporary Issues in Leisure and Sport. 3 Hours.

Discussion of selected topics and review of current literature in the recreation and sport field. Analysis of current trends and professional issues are emphasized. Certification at the instructor level or higher in at least 2 areas of expertise must be completed before a grade is assigned in this course. Prerequisite: Senior standing and RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Fall and Spring)

## RESM 4023. Applied Outdoor Adventure Leadership. 3 Hours.

This course considers the values and scope of outdoor recreation programs, leadership and skill development with practical experience in a wilderness environment. The course will include a canoe trip through the wilderness, and skill training in such areas as orienteering and rock climbing; and leadership development in interpersonal and processing skills. (Typically offered: Summer)

RESM 405V. Independent Study in Recreation and Sport. 1-3 Hour.
Provides student an opportunity to pursue special study of research problems. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

## RESM 4253. Business of Sport. 3 Hours.

This course is designed as a "Study Tour" course. For the first part of the course, students will learn about the business of various sport organizations in different US locations. During the second part of the course, students will travel to the specific US location to connect with and learn from industry professionals and tour a variety of sport organizations and facilities. Course includes study trip; length based upon destination. Additional fees required. Course will be offered during the Intersession. Prerequisite: 2.0 minimum GPA, RESMBS majors with minimum of 60 hours completed, and instructor consent. (Typically offered: Fall, Spring and Summer)

RESM 4273. The Intramural Sports Program. 3 Hours.
Historical development, aim and objectives, organization, administration, units of competition, program of activities, schedule making, scoring plans, rules and regulations, awards, and special administrative problems. (Typically offered: Fall Odd Years)

## RESM 4283. History and Application of American Sport. 3 Hours.

This survey course will explore the historical development of sport in American culture and the processes of change in American culture and sport from the 15th century to the present. Students will learn how to apply historical concepts to current issues in recreation and sport management. (Typically offered: Irregular)

RESM 440V. Internship. 1-12 Hour.
This experiential based course requires 40 hours per week of work in an approved agency for a full semester. It is recommended that students register for the summer session after completion of their course work. Prerequisite: RESM 4411, RESM 3873 and two hours of RESM 2011 with grades of C or better. (Typically offered: Fall, Spring and Summer)

## RESM 4411. Pre-Internship Preparation. 1 Hour.

Enables student preparation for internship experiences and eventual employment. Course will assist students in preparation of resumes; provide opportunities for interview practice; the development of job search and application skills, as well as other requisites for entering the professional workforce. Prerequisite: RESM 1003 or RESM 1013, both with a grade of C or better. Pre- or Corequisite: RESM 3873. (Typically offered: Fall)

## RESM 480V. Workshop. 1-3 Hour.

Workshop. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

RESM 498VH. Honors Recreation and Sport Management Thesis/Project. 1-3 Hour.

Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one: to complete the honors thesis/project. Prerequisite: Honors candidacy, RESMBS major, and RESM 3901H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

## Social Studies Education (SSED)

Freddie Bowles
Program Coordinator
306 Peabody Hall
479-575-3035
Email: fbowles@uark.edu

## Curriculum and Instruction Website (https://cied.uark.edu/)

The Department of Curriculum and Instruction offers a Bachelor of Arts in Teaching in Social Studies Education that leads to licensure for 7-12 instruction. The program focuses on developing reflective practitioners based on the constructivist perspective that teachers are life-long learners, reflective practitioners themselves, and scholar researchers. The coursework is designed to develop these attributes so that students graduate as effective teachers with the knowledge, skills, and dispositions to engage students with meaningful and authentic instruction. The Bachelor of Arts in Teaching degree will also prepare students in the humanities with the pedagogical skills, the content knowledge, and the dispositions for teaching and learning in 21st century classrooms.

## B.A.T. in Social Studies Education <br> Stage I: Pre-Social Studies Education (PSSED)

Complete all 46 hours of program pre-requisites for each content area.

1. Obtain a GPA of 3.0 or better on UA coursework.
2. Complete all content and pedagogy courses with a grade of " C " or better.

## 3. Complete a background check.

## Stage II: Admission to the B.A.T. Program

Admission to the Bachelor of Arts in Teaching program (B.A.T.) occurs the semester after the candidate has completed all pre-B.A.T. requirements including the first three courses in education - CIED 1013, CIED 1003, and CIED 2083 - prior to a student's entering the individual programs of study the following fall term. The B.A.T. program is competitive, and meeting the minimum requirements does not guarantee admission to the program. Applications to the B.A.T. program must be submitted by deadlines statement on the Office of Teacher Education (https://teachereducation.uark.edu/admissions/) website.

The application process includes:

1. Students must complete the application to teacher education (see the Teacher Education Application Fee (p. 53)) through the Teacher Education Office during the time period stated on the Office of Teacher Education website. This includes completing and passing the criminal background check.*
2. Submission of B.A.T. application.
3. Submission of writing sample to content area faculty.
4. Submission of transcripts for all coursework.

* Another background check will be required prior to graduation in order to be eligible for licensure.


## Stage III: Requirements for Program Continuation and Internship

1. Maintain a cumulative GPA of 3.0 or better.
2. All professional education courses and content courses must have a grade 'C' or better (except SEED 3283 below). No teaching methods courses may be taken as self-paced (correspondence) courses.

## Stage IV: Requirements for Internship Semester (spring, senior year) and Program Completion

All students in the BAT program must complete the following requirements prior to being admitted to the spring semester of their senior year.

1. Students must earn a 'B' or better in the fall semester, senior year SEED 3283 practicum course.
2. Earn a cumulative GPA of 3.0 or better by the end of the fall semester, senior year. Students are not permitted to intern in the spring if the GPA requirement is not met.
3. Students must have taken the appropriate Praxis II-Content Knowledge exam to be admitted to the spring semester, senior year.
4. Candidate must complete a successful internship admission interview with B.A.T. faculty. Note these interviews are scheduled with all senior students during the fall semester.
5. Satisfactorily complete the internship/student teaching experience that has been approved by the Director of Field Placement.

All students seeking licensure in the State of Arkansas are subject to a criminal background check. Background checks can take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities at least six months in advance of graduation (or six months prior to applying for a teaching license). Arkansas will not grant a teaching license to anyone who has been convicted of a felony.

## Social Studies Education Requirements

Pre-Social Studies Education requirements

| University Core (State Minimum Core) |  | 35 |
| :---: | :---: | :---: |
| Courses specifically required for the Social Studies Education B.A.T. program |  |  |
| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) |  |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) |  |
| MATH 1203 | College Algebra (ACTS Equivalency $=$ MATH 1103) (or higher) |  |
| HIST 2003 | History of the American People to 1877 (ACTS Equivalency = HIST 2113) |  |
| HIST 1113 | Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113) |  |
| HIST 1123 | Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123) |  |
| HIST 2013 | History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) |  |
| Additional Pre-Social Studies Education requirements ${ }^{1}$ |  | 9 |
| CIED 1013 | Introduction to Education |  |
| CIED 1003 | Introduction to Technology in Education |  |
| CIED 2083 | Innovation and Creativity in Daily Practice |  |
| Educational Requirements ${ }^{1}$ |  | 31 |
| EDST 3223 American Educational History or HIST 489'History Seminar |  |  |
| CIED 3033 | Classroom Learning Theory |  |
| CIED 4023 | Teaching in Inclusive Secondary Settings |  |
| SEED 4063 | Disciplinary and Interdisciplinary Literacies in Education |  |
| CIED 4285 | Teaching Experience |  |
| CIED 4403 | Understanding Cultures in the Classroom |  |
| SEED 3283 | Teaching Experiences in Education |  |
| SEED 4022 | Classroom Management Concepts |  |
| SEED 4103 | Methods of Teaching Secondary Social Studies I |  |
| SEED 4113 | Teaching History, Government and Economics |  |

Social Studies Content ${ }^{1}$
Social Science electives (6 hours of 3000 -level) ${ }^{2}$
Social Science electives ( 9 hours of 4000 -level) ${ }^{2}$
ECON 2143 Basic Economics: Theory and Practice
GEOS 1123 Human Geography (ACTS Equivalency = GEOG 1113)
or ANTH 10ء́Introduction to Cultural Anthropology (ACTS Equivalency $=$ ANTH 2013)
GEOS 2003 World Regional Geography (ACTS Equivalency = GEOG 2103)
HIST 4583 Arkansas in the Nation or HIST 338:Arkansas and the Southwest
PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)
SOCI 2013 General Sociology (ACTS Equivalency = SOCI 1013)

6 hours Social Studies Diversity core chosen from courses below:
HIST 3233 African American History to 1877
HIST 3243 African American History Since 1877
HIST 3093 Women in U.S. History

| HIST 3263 | History of the American Indian |
| :--- | :--- |
| HIST 3303 | U.S. Immigration History |
| HIST 3313 | Latinos and Latinas in the U.S. |
| PLSC 3263 | Latino Politics |
| PLSC 3293 | Black Politics |
| PLSC 4323 | Racial Identity, Politics, and Public Policy |
| PLSC 4333 | Southern Politics |
| PLSC 4593 | Islam and Politics |
| PLSC 3853 | American Foreign Policy |
| General Electives | $\mathbf{6}$ |
| Total Hours | $\mathbf{1 2 0}$ |

${ }^{1}$ All professional education courses and content courses must have a grade "C" or better, except SEED 3283, which must have a "B" or better.
${ }^{2}$ A minimum of 6 hours with international/non-U.S. focus must be taken among the combined 15 hours of 3000 - and 4000 -level Social Science electives.

## Dismissal based on Unethical or Unprofessional Behaviors from the B.A.T. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome \%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Ca1b2cdf9639c4ba1b3ed08d897252433\%7C79c742c4e61c4fa5be89a3 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1 \%7C1000\&sdata=Rz4djbrQkGT\%2F6apKO7qqCfxSVIB \%2F1WVbxhHQ2C5AtBk\%3D\&reserved=0), Arkansas Division of Elementary and Secondary Education Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions \%2Feducator\%2520effectiveness\%2Fplsb-professional-ethics-discipline\%2Fcode-of-ethics-for-arkansaseducators\&data=04\%7C01\%7Ckmamisei\%40uark.edu
felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https:// teacher-education.uark.edu/) or the Teacher Education Support page (https://nam11.safelinks.protection.outlook.com/? url=https\%3A\%2F\%2Fteacher-education.uark.edu\%2Fsupport \%2Findex.php\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Ca1b2cdf9639c4ba1b3ed08d897252433\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwil \%7C1000\&sdata=4bDHshKQWwWkHUpWokOosPmSDje1rOxumOETQaahHuA $\% 3 D \& r e s e r v e d=0$ ). Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/studentacademicappeals/).

## Social Studies Education B.A.T. Eight-Semester Plan

 1 解 who qualify for admission to the program can finish a degree in four years by following the suggested order of classes below.

| First Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| = ENGL 1013) (Satisfies General Education |  |  |
| Outcome 1.1) |  |  |


 \%7C1000\&sdata=IW
\%2FJFyUarqY5QAsdHdGE08O8yc32sq7svsTUJ78cV74\%3D\&reserved=0), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes,

Education Outcome 2.1)
Humanities State Minimum Core (Satisfies General 3 Education Outcome 3.2) ${ }^{1}$
HIST 2003 History of the American People to 1877 (ACTS Equivalency $=$ HIST 2113) (Satisfies
General Education Outcome 3.2, 3.3, and 4.2)
CIED 1013 Introduction to Education
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
Science State Minimum Core with lab (Satisfies
General Education Outcome 3.4) ${ }^{1}$
HIST 1113 Institutions and Ideas of World
Civilizations I (ACTS Equivalency = HIST 1113)
(Satisfies General Education Outcomes 3.2, 3.3, and 4.1)

3

HIST 2013 History of the American People, 1877
to Present (ACTS Equivalency = HIST 2123)
(Satisfies General Education Outcomes 3.2, 3.3, and 4.2)
CIED 1003 Introduction to Technology in Education Year Total:

15

Second Year
Fine Arts State Minimum Core (Satisfies General
Education Outcome 3.1)
HIST 1123 Institutions and Ideas of World
Civilizations II (ACTS Equivalency = HIST 1123)
(Satisfies General Education Outcomes 3.2, 3.3,
and 4.1)
GEOS 1123 Human Geography (ACTS
Equivalency = GEOG 1113)
or ANTH 1023 Introduction to Cultural
Anthropology (ACTS Equivalency = ANTH 2013)
GEOS 2003 World Regional Geography (ACTS
Equivalency = GEOG 2103) (Satisfies General Education Outcome 4.1)
CIED 2083 Innovation and Creativity in Daily Practice
Science State Minimum Core with lab (Satisfies
General Education Outcome 3.4) ${ }^{1}$
General Elective
PLSC 2003 American National Government (ACTS
Equivalency = PLSC 2003) (Satisfies General
Education Outcomes 3.3 and 4.2)
SOCI 2013 General Sociology (ACTS Equivalency
= SOCI 1013) (Satisfies General Education
Outcome 3.3)
Social Studies Diversity course ${ }^{2}$
Year Total:

| Third Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| HIST 4583 Arkansas in the Nation <br> or HIST 3383 Arkansas and the Southwest <br> ECON 2143 Basic Economics: Theory and <br> Practice <br> SEED 4063 Disciplinary and Interdisciplinary <br> Literacies in Education (Satisfies General <br> Education Outcomes 1.2 and 5.1) <br> Social Studies Diversity course 2 | 3 |  |
| CIED 4403 Understanding Cultures in the <br> Classroom <br> 3000-level Social Science elective <br> 3000-level Social Science elective |  |  |
| EDST 3223 American Educational History <br> or HIST 4893 History Seminar <br> SEED 4022 Classroom Management Concepts <br> CIED 3033 Classroom Learning Theory <br> Year Total: | 3 |  |


| Fourth Year | Units |  |
| :---: | :---: | :---: |
|  | Fall | Spring |
| 4000-level Social Science elective ${ }^{3}$ | 6 |  |
| SEED 4103 Methods of Teaching Secondary Social Studies I | 3 |  |
| SEED 3283 Teaching Experiences in Education | 3 |  |
| CIED 4023 Teaching in Inclusive Secondary Settings (or elective) | 3 |  |
| CIED 4023 Teaching in Inclusive Secondary Settings (or elective) |  | 3 |
| SEED 4113 Teaching History, Government and Economics (Satisfies General Education Outcome 6.1) |  | 3 |
| CIED 4285 Teaching Experience |  | 5 |
| Year Total: | 15 | 11 |

Total Units in Sequence: ..... 120
${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2F1XG8924jwOx8pTlw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
2 Chosen from Social Studies Diversity core program list.
${ }^{3}$ A minimum of 6 hours with international/non-U.S. focus must be taken among the combined 15 hours of 3000 - and 4000 -level Social Science electives.

## Courses

CIED 1003. Introduction to Technology in Education. 3 Hours.
A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning. (Typically offered: Fall, Spring and Summer)
CIED 1013. Introduction to Education. 3 Hours.
Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. An 18-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings is incorporated in this introductory course to education. (Typically offered: Fall and Spring)

CIED 2083. Innovation and Creativity in Daily Practice. 3 Hours.
Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

CIED 2943. Foundations of Language and Literacy. 3 Hours.
A foundational study of language and literacy with an emphasis on content knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)
CIED 3013. Development and Learning Theories in the K-6 Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 3013H. Honors Development and Learning Theories in the K-6

 Classroom. 3 Hours.This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions.
Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3013.
CIED 3023. Survey of Exceptionalities. 3 Hours.
A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3023H. Honors Survey of Exceptionalities. 3 Hours.

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.

## CIED 3033. Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

## CIED 3033H. Honors Classroom Learning Theory. 3 Hours.

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3033.

## CIED 3053. The Emerging Adolescent. 3 Hours.

This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)

## CIED 3103. Children and Adolescent Literature. 3 Hours.

A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

## CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.

A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

## CIED 3113. Emergent Literacy. 3 Hours.

An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years. Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

## CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

## CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.

Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

## CIED 3453. Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

## CIED 3453H. Honors Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.
CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

## CIED 4003. Elementary Seminar. 3 Hours.

This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)
CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.
This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)

CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.
CIED 4123. Literacy Assessment and Interventions in the Elementary Classroom. 3 Hours.
An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

## CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours.

This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.
A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours.
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
CIED 4163. Senior Project. 3 Hours.
This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

## CIED 4173. Student Teaching. 3 Hours.

Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

## CIED 4183. Instruction and Assessment of Writing. 3 Hours.

Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours. Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.

## CIED 4285. Teaching Experience. 5 Hours.

The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

## CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.

Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4403. Understanding Cultures in the Classroom. 3 Hours.
This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities. Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

## CIED 4413. Acquiring a Second Language. 3 Hours.

The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)

CIED 4423. Teaching English as a Second Language. 3 Hours.
This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

## CIED 4433. The Moral Mind in Action. 3 Hours.

The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

## CIED 4443. Moral Courage. 3 Hours.

Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Spring)

CIED 4463. Culture and Learning. 3 Hours.
Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)

CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.
Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)

CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours.
This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

CIED 4533. Reading Comprehension Through Children's and Adolescent

## Literature. 3 Hours.

An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

CIED 4953. Assessment for English Learners. 3 Hours.
This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)

CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.
CIED 499VH. Honors Special Topics in Curriculum and Instruction Education. 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## Spanish Education (SNED)

Freddie Bowles
Program Coordinator
306 Peabody Hall
479-575-3035
Email: fbowles@uark.edu
Curriculum and Instruction Website (https://cied.uark.edu/)
The Department of Curriculum and Instruction offers a Bachelor of Arts in Teaching in Spanish Education that leads to licensure for K-12 instruction. The program focuses on developing reflective practitioners based on the constructivist perspective that teachers are life-long learners, reflective practitioners themselves, and scholar researchers. The coursework is designed to develop these attributes so that students graduate as effective teachers with the knowledge, skills, and dispositions to engage students with meaningful and authentic instruction. The Bachelor of Arts in Teaching degree will also prepare students in the humanities with the pedagogical skills, the content knowledge, and the dispositions for teaching and learning in 21st century classrooms.

## B.A.T. in Spanish Education Stage I: Pre-Spanish Education (PSNED)

## Complete all 46 hours of program pre-requisites for each content

 area.1. Obtain a GPA of 3.0 or better on UA coursework.
2. Complete all content and pedagogy courses with a grade of " C " or better.
3. Complete a background check.

## Stage II: Admission to the B.A.T. Program

Admission to the Bachelor of Arts in Teaching program (B.A.T.) occurs the semester after the candidate has completed all pre-B.A.T. requirements including the first three courses in education - CIED 1013, CIED 1003, and CIED 2083 - prior to a student entering the individual programs of study the following fall term. The B.A.T. program is competitive, and meeting the minimum requirements does not guarantee admission to the program. Applications to the B.A.T. program must be submitted by
deadlines stated on the Office of Teacher Education (https://teachereducation.uark.edu/admissions/) website.

The application process includes:

1. Students must complete the application to teacher education (see the Teacher Education Application Fee (p. 53)) through the Teacher Education Office during the time period stated on the Office of Teacher Education website. This includes completing and passing the criminal background check.*
2. Submission of B.A.T. application.
3. Submission of writing sample to content area faculty.
4. Submission of transcripts for all coursework.

* Another background check will be required prior to graduation in order to be eligible for licensure.


## Stage III: Requirements for Program Continuation and Internship

1. Maintain a cumulative GPA of 3.0 or better.
2. All professional education courses and content courses must have a grade 'C' or better ( except SEED 3283 below). No teaching methods courses may be taken as self-paced (correspondence) courses.

## Stage IV: Requirements for Internship Semester (spring, senior year) and Program Completion

All students in the B.A.T. program must complete the following requirements prior to being admitted to the spring semester of their senior year.

1. Students must earn a 'B' or better in the fall semester, senior year SEED 3283 practicum course.
2. Earn a cumulative GPA of 3.0 or better by the end of the fall semester, senior year. Students are not permitted to intern in the spring if the GPA requirement is not met.
3. Students must have taken the appropriate Praxis II-Content Knowledge exam to be admitted to the spring semester, senior year.
4. Candidate must complete a successful "internship admission interview" with B.A.T. faculty. Note these interviews are scheduled with all senior students during the fall semester.
5. Satisfactorily complete the internship/student teaching experience that has been approved by the Director of Field Placement.

All students seeking licensure in the State of Arkansas are subject to a criminal background check. Background checks can take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities at least six months in advance of graduation (or six months prior to applying for a teaching license). Arkansas will not grant a teaching license to anyone who has been convicted of a felony.

## Spanish Education Requirements

## Pre-Spanish Education requirements

University Core (State Minumun Core)
Courses specifically required for the Spanish Education B.A.T. prograqm

| ENGL 1013 | Composition I (ACTS Equivalency = ENGL 1013) |
| :--- | :--- |
| ENGL 1023 | Composition II (ACTS Equivalency = ENGL 1023) |
| MATH 1203 | College Algebra (ACTS Equivalency = MATH |
|  | 1103) (or higher) |

ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)
MATH 1203 College Algebra (ACTS Equivalency $=$ MATH 1103) (or higher)

| COMM 1023 | Communication in a Diverse World ${ }^{1}$ |  |
| :---: | :---: | :---: |
| SPAN 2003 | Intermediate Spanish I (ACTS Equivalency = SPAN 2013) |  |
| Additional Pre-Spanish Education requirements ${ }^{1}$ |  | 9 |
| CIED 1013 | Introduction to Education |  |
| CIED 1003 | Introduction to Technology in Education |  |
| CIED 2083 | Innovation and Creativity in Daily Practice |  |
| Eductional Requirements ${ }^{1}$ |  | 31 |
| EDST 3223 | American Educational History |  |
| CIED 3033 | Classroom Learning Theory |  |
| $\begin{aligned} & \text { CIED } 4023 \\ & \text { or CIED } 302 \end{aligned}$ | Teaching in Inclusive Secondary Settings :Survey of Exceptionalities |  |
| CIED 4285 | Teaching Experience |  |
| CIED 4403 | Understanding Cultures in the Classroom |  |
| SEED 3283 | Teaching Experiences in Education |  |
| SEED 4022 | Classroom Management Concepts |  |
| SEED 4063 | Disciplinary and Interdisciplinary Literacies in Education |  |
| SEED 4443 | Methods of Teaching Foreign Language K-12 |  |
| SEED 4523 | Instructional Practices in Teaching Foreign Language |  |
| Spanish Language Content |  | 33 |
| 3 hours Linguistic Elective (suggest WLLC 3173) |  |  |
| SPAN 2013 Intermediate Spanish II (ACTS Equivalency = SPAN 2023) <br> or SPAN 21ء́Spanish for Heritage Speakers I |  |  |
| SPAN 3003 Advanced Spanish or SPAN 3123panish for Heritage Speakers II |  |  |
| SPAN 3033 Conversation and Composition |  |  |
| SPAN 3103 Cultural Readings |  |  |
| SPAN 3113 | Introduction to Literature |  |
| SPAN 4003 Advanced Grammar or SPAN 4123panish for Heritage Speakers III |  |  |
| SPAN 4623 Advanced Proficiency in Spanish |  |  |
| SPAN electives (9 hours at 4000-level) |  |  |
| General Electives |  | 12 |
| Total Hours |  | 120 |
| ${ }^{1}$ Complete all content and pedagogy courses with a grade of "C" or better, except SEED 3283, which requires a grade of "B" or better. |  |  |
| Dismissal based on Unethical or Unprofessional Behaviors from the B.A.T. program |  |  |
| The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA |  |  |
| Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome |  |  |
| \%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu |  |  |
| \%7Ca1b2cdf9639c4ba1b3ed08d897252433\%7C79c742c4e61c4fa5be89a3cb566a8 |  |  |
| \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiL |  |  |
| \%2F1WVbxhHQ2C5AtBk\%3D\&reserved=0), Arkansas |  |  |
| Division of Elementary and Secondary Education Code of |  |  |

Eductional Requirements ${ }^{1}$
EDST 3223 American Educational History
CIED 3033 Classroom Learning Theory
CIED 4023 Teaching in Inclusive Secondary Settings or CIED 302:Survey of Exceptionalities
CIED 4285 Teaching Experience
CIED 4403 Understanding Cultures in the Classroom
SEED 3283 Teaching Experiences in Education
SEED 4022 Classroom Management Concepts
SEED 4063 Disciplinary and Interdisciplinary Literacies in Education
SEED 4443 Methods of Teaching Foreign Language K-12
SEED 4523 Instructional Practices in Teaching Foreign Language
Spanish Language Content
${ }^{1}$ Complete all content and pedagogy courses with a grade of "C" or better, except SEED 3283, which requires a grade of "B" or better.

## Dismissal based on Unethical or Unprofessional Behaviors from the B.A.T. program

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome
\%2F30442.htm\&data=04\%7C01\%7Ckmamisei\%40uark.edu ( \%7C1000\&sdata=Rz4djbrQkGT\%2F6apKO7qqCfxSVIB 5AtBk\%3D\&reserved=0), Arkansas Ethics (https://nam11.safelinks.protection.outlook.com/?
url=http\%3A\%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions

| First Year | Units |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  |
| Spring |  |  |

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https:// teacher-education.uark.edu/) or the Teacher Education Support page (https://nam11.safelinks.protection.outlook.com/? url=https\%3A\%2F\%2Fteacher-education.uark.edu\%2Fsupport \%2Findex.php\&data=04\%7C01\%7Ckmamisei\%40uark.edu \%7Ca1b2cdf9639c4ba1b3ed08d897252433\%7C79c742c4e61c4fa5be89a3cb5.S. History or Government State Minimum Core \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6lk1haWwiLCJXVCIGMnO\%3D $\% 7 C 1000$ \&sdata $=4$ bDHshKQWwWkHUpWokOosPmSDje1rOxumOETQaahH Science State Minimum Core with lab (Satisfies $\% 3 D \& r e s e r v e d=0$ ). Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (http://catalog.uark.edu/ undergraduatecatalog/academicregulations/studentacademicappeals/).

## Spanish Education B.A.T. Eight-Semester Plan

Because this program requires admission to progress, it does not qualify for the university's Eight-Semester Degree Program; however, students who qualify for admission to the program can finish a degree in four years by following the suggested order of classes below.

General Education Outcome 3.4) ${ }^{1}$
SPAN 3033 Conversation and Composition (or 3
higher)
SPAN 3113 Introduction to Literature (or higher) 3
EDST 3223 American Educational History 3
Year Total: 15

| Third Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| 4000-level SPAN elective | 3 |  |
| SPAN 4003 Advanced Grammar | 3 |  |



CIED 3033H. Honors Classroom Learning Theory. 3 Hours.
A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3033.
CIED 3053. The Emerging Adolescent. 3 Hours.
This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)

CIED 3103. Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)
CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

## CIED 3113. Emergent Literacy. 3 Hours.

An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

## CIED 3113H. Honors Emergent Literacy. 3 Hours.

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years. Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

## CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

## CIED 3453. Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

## CIED 3453H. Honors Developmental Literacy. 3 Hours.

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.

CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

## CIED 4003. Elementary Seminar. 3 Hours.

This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)
CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)

## CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.

This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)
CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours. Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.
CIED 4123. Literacy Assessment and Interventions in the Elementary Classroom. 3 Hours.
An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)
CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

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This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

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A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

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This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)
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This course is equivalent to CIED 4183.

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The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

## CIED 4403. Understanding Cultures in the Classroom. 3 Hours.

This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities. Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

## CIED 4413. Acquiring a Second Language. 3 Hours.

The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)

## CIED 4423. Teaching English as a Second Language. 3 Hours.

This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

## CIED 4433. The Moral Mind in Action. 3 Hours.

The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

## CIED 4443. Moral Courage. 3 Hours.

Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Spring)

## CIED 4463. Culture and Learning. 3 Hours.

Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)
CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.
Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)
CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours. This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

CIED 4533. Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

CIED 4953. Assessment for English Learners. 3 Hours.
This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)
CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.
CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

CIED 499VH. Honors Special Topics in Curriculum and Instruction Education. 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.

## Special Education (SPED)

Suzanne Kucharczyk
Program Coordinator
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suzannek@uark.edu
The Department of Curriculum and Instruction offers programs that prepare candidates for initial teacher licensure in Special Education.
Graduates of the B.S.E. in Special Education will prepare students to teach special education to students with diverse disabilities from kindergarten to 12th grade.

Students wishing to pursue a major in Special Education declare the PreSpecial Education (PSPED) preparation emphasis until formal admission to the major is approved by program faculty.

## General Requirements

1. In addition to participating in interviews with faculty and providing a written statement, candidates applying to the program must meet one requirement in each of the following skill areas:
a. Writing: a) 3.0 average in ENGL 1013 and ENGL 1023 within last 7 years; b) passing ACT/SAT/Praxis Core score in Writing; or c) Accuplacer Next Generation score of 251.
b. Math: (a) Earned B or higher in College Algebra or equivalent course within last 7 years, (b) passing ACT/SAT/Praxis score in Math, or (c) Accuplacer Next Generation score of 251.
c. Reading: (a) 3.0 Cumulative GPA, (b) passing ACT/SAT/Praxis Core score in Reading, or Accuplacer Next Generation score of 251.
2. All CIED courses must have a grade of " C " or higher. All SPED courses must have a " B " or higher prior to the student teaching semesters. No teaching methods courses may be taken by as selfpaced (correspondence) courses.
3. Students are cleared for field experiences in their first year of the program by registering with the Office of Teacher Education (see the Teacher Education Application Fee (p. 53)). This includes a criminal record and child maltreatment background checks.

Continuation to senior year Teaching Internship block is based on cumulative GPA and grades described above and positive teacher disposition reviews by faculty.

Teacher License requirements include the following:

- Consistent display of professional teaching disposition qualities as reviewed by faculty and school partners
- Written support related to demonstrating special education practicebased competencies from participating school partners
- Students must have a cumulative GPA of 3.0 or higher
- Students must pass all Division of Elementary and Secondary Education required examinations


## Special Education Requirements

| State Minimum Core |  | 35 |
| :---: | :---: | :---: |
| Required Social Science core |  |  |
| HDFS 2413 | Family Relations |  |
| ADE Mandated Course |  | 3 |
| COMM 1313 | Public Speaking (ACTS Equivalency = SPCH 1003) |  |
| Curricular Content Courses |  |  |
| Mathematics |  | 6 |
| MATH 2213 | Survey of Mathematical Structures I |  |
| MATH 2223 | Survey of Mathematical Structures II |  |
| Literacy |  | 2-3 |
| CIED 3262 or CDIS 2253ntroduction to Communicative Disorders |  |  |
| Professional Education Courses |  |  |
| General Education |  | 9 |
| CIED 3023 | Survey of Exceptionalities |  |
| CIED 3033 | Classroom Learning Theory |  |
| SPED 4423 | Technology for the Inclusive Classroom |  |
| Special Education |  | 27 |
| SPED 4173 | Introduction to Dyslexia: Literacy Development and Structure of Language |  |
| SPED 4413 | ABA and Classroom Management for Teachers |  |
| SPED 4433 | Curriculum Development and Instructional Planning |  |
| SPED 4443 | Career Development and Transition Planning for Students with Disabilities |  |
| SPED 4453 | Assessment of Students with Disabilities |  |


| SPED 4463 | Teaching Students with Extensive Support Needs |
| :---: | :---: |
| SPED 4473 | Teaching Students with Disabilities in Math and Science |
| SPED 4483 | Teaching Literacy Skills to Students with Disabilities |
| SPED 4493 | Introduction to Students with High Incidence Disabilities |
| Senior Internship Year |  |
| SPED 4538 | Special Education Internship - Kindergarten through 6th Grade |
| SPED 4543 | Special Education Seminar - Kindergarten through 6th Grade |
| SPED 4553 | Special Education Research - Kindergarten through 6th Grade |
| SPED 4568 | Special Education Teaching Internship - 7th through 12th Grade |
| SPED 4573 | Special Education Seminar - 7th through 12th Grade |
| SPED 4583 | Special Education Research - 7th through 12th Grade |
| Electives | 10-9 |
| Total Hours | 120 |

## Dismissal Based on Unethical or Unprofessional Behaviors from Special Education Programs

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA
Code of Ethics (https://nam11.safelinks.protection.outlook.com/? url=http\%3A\%2F\%2Fwww.nea.org\%2Fhome \%2F30442.htm\&data=04\%7C01\%7Cjgbeasle\%40uark.edu
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e. Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure.

More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website (https://nam11.safelinks.protection.outlook.com/? url=https\%3A\%2F\%2Foccupationaltherapy.uark.edu \%2F\&data=04\%7C01\%7Cjgbeasle\%40uark.edu \%7C418b639d5fcc4412bdc308d87b720a68\%7C79c742c4e61c4fa5be89a3cb566a8 \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1haWwiL
\%7C1000\&sdata=xXhYBUYOER9hIXzBrjW9cNr4eqG18kb5mU1qvW3zs2U
\%3D\&reserved=0) or the Teacher Education Support page (https://
teacher-education.uark.edu/support/).
Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog \%2Facademicregulations\%2Fstudentacademicappeals \%2F\&data=04\%7C01\%7Cagriffin\%40uark.edu
\%7C0274d2f2d5cc414f412908d87b85f2b5\%7C79c742c4e61c4fa5be89a3cb56,
 \%7C1000\&sdata=D1rH8UNV8LIImytDPAznXBZTz \%7C1000\&sdata=HJfCw \%2BrSDbxjsJ9VZBXzgas\%3D\&reserved=0), Arkansas Division
\%2BlavTFgx5n3xFWS0XdeBVvInxmiEAaQ1prgywk\%3D\&reserved=0). of Elementary and Secondary Education Code of Ethics (https://nam11.safelinks.protection.outlook.com/?url=http\%3A \%2F\%2Fdese.ade.arkansas.gov\%2Fdivisions\%2Feducator \%2520effectiveness\%2Fplsb-professional-ethics-discipline\%2Fcode-of-ethics-for-arkansas-educators\&data=04\%7C01\%7Cjgbeasle\%40uark.edu

## Special Education B.S.E. Eight-Semester Plan

Students wishing to follow the eight-semester degree plan in Education Studies should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. \%7C0274d2f2d5cc414f412908d87b85f2b5\%7C79c742c4e61c4fa5be89a3cb566a80d1\%7C0\%7C0\%7C637395162525442411\%7CUnknown \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1h

| ENirst Year | Units <br> Spring |  |
| :--- | ---: | ---: |
| ENGL 1013 Composition I (ACTS Equivalency | 3 |  | \%2FGZbgqls\%3D\&reserved=0), as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:

1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
= ENGL 1013) (Satisfies General Education
3

Outcome 1.1)
Math State Minimum Core (Satisfies General 3 Education Outcome 2.1)
Science State Minimum Core with lab (Satisfies 4
General Education Outcome 3.4) ${ }^{1}$
U.S. History or Government State Minimum Core

3
Fine Arts State Minimum Core (Satisfies General 3 Education Outcome 3.1) ${ }^{1}$
ENGL 1023 Composition II (ACTS Equivalency
= ENGL 1023) (Satisfies General Education Outcome 1.1)
MATH 2213 Survey of Mathematical Structures I

| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ |  | 3 |
| :---: | :---: | :---: |
| Science State Minimum Core with lab (Satisfies General Education Outcome 3.4) ${ }^{1}$ |  | 4 |
| HDFS 2413 Family Relations (Satisfies General Education Outcomes 3.3, 4.1, and 4.2) |  | 3 |
| Year Total: | 16 | 16 |
| Second Year |  | Units |
|  | Fall | Spring |
| Application must be made for admission to Professional Education Courses for beginning of spring semester |  |  |
| MATH 2223 Survey of Mathematical Structures II | 3 |  |
| Social Sciences State Minimum Core (Satisfies General Education Outcome 3.3) ${ }^{1}$ | 3 |  |
| CIED 3033 Classroom Learning Theory | 3 |  |
| CIED 3023 Survey of Exceptionalities | 3 |  |
| Humanities State Minimum Core (Satisfies General Education Outcome 3.2) ${ }^{1}$ | 3 |  |
| COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) |  | 3 |
| CIED 3262 <br> or CDIS 2253 Introduction to Communicative <br> Disorders |  | 2-3 |
| General Elective (if taking CIED 3262) |  | 0-1 |
| CIED, STEM, or SPED elective |  | 9 |
| Year Total: | 15 | 15 |
| Third Year |  | Units |
|  | Fall | Spring |
| SPED 4423 Technology for the Inclusive Classroom | 3 |  |
| SPED 4443 Career Development and Transition Planning for Students with Disabilities | 3 |  |
| SPED 4453 Assessment of Students with Disabilities | 3 |  |
| SPED 4493 Introduction to Students with High Incidence Disabilities | 3 |  |
| SPED 4483 Teaching Literacy Skills to Students with Disabilities | 3 |  |
| SPED 4433 Curriculum Development and Instructional Planning |  | 3 |
| SPED 4413 ABA and Classroom Management for Teachers |  | 3 |
| SPED 4173 Introduction to Dyslexia: Literacy Development and Structure of Language |  | 3 |
| SPED 4463 Teaching Students with Extensive Support Needs |  | 3 |
| SPED 4473 Teaching Students with Disabilities in Math and Science |  | 3 |
| Year Total: | 15 | 15 |


| Fourth Year | Fall | Units <br> Spring |
| :--- | ---: | ---: |
| SPED 4538 Special Education Internship - <br> Kindergarten through 6th Grade | 8 |  |
| SPED 4543 Special Education Seminar - <br> Kindergarten through 6th Grade | 3 |  |
| SPED 4553 Special Education Research - <br> Kindergarten through 6th Grade <br> SPED 4568 Special Education Teaching Internship <br> -7 th through 12th Grade | 3 |  |

SPED 4573 Special Education Seminar - 7th through 12th Grade (Satisfies General Education Outcome 6.1)
SPED 4583 Special Education Research - 7th 3
through 12th Grade
Year Total: 14
14

Total Units in Sequence:
${ }^{1}$ Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3cb566a \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.

## Courses

SPED 3863. Applications of Behavior Change Procedures. 3 Hours.
Course content includes (a) information on behavior change procedures; (b) activities designed to acquire skill in developing and evaluating behavioral change programs; and (c) information and activities designed to acquire skills in providing and monitoring persons and systems providing support. Legal and ethical standards will be reviewed and applied to the course content. Prerequisite: SPED 3843. (Typically offered: Spring)

SPED 4173. Introduction to Dyslexia: Literacy Development and Structure of Language. 3 Hours.
This course focuses on the assessment of students with disabilities, literacy development, skills \& intervention. Students will utilize foundational concepts of oral and written language including the structure of language to assess student's difficulties and plan appropriate instruction. Techniques discussed include informal observation, miscue analysis, multisensory teaching, and portfolio assessment. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Childhood Education Bachelor of Science in Education (CHEDBS), or departmental consent. (Typically offered: Spring)

SPED 4413. ABA and Classroom Management for Teachers. 3 Hours. Students in this course will develop an understanding of the basic principles of Applied Behavior Analysis (ABA) and learn how to implement these principles across a Positive Behavior Support Model. Intervention plans include development of individual supports, classroom management supports, and whole school behavior supports. Field experience required. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Birth through Kindergarten Bachelor of Science in Human Environmental Science (BRKDBS), or departmental consent. (Typically offered: Spring)
SPED 4413H. Honors ABA and Classroom Management for Teachers. 3 Hours. Students in this course will develop an understanding of the basic principles of Applied Behavior Analysis (ABA) and learn how to implement these principles across a Positive Behavior Support Model. Intervention plans include development of individual supports, classroom management supports, and whole school behavior supports. Field experience required. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to SPED 4413.
SPED 4423. Technology for the Inclusive Classroom. 3 Hours.
A study of the use of instructional and assistive/augmentative technology for students with learning differences and special learning needs. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS) or departmental consent. (Typically offered: Fall)
SPED 4433. Curriculum Development and Instructional Planning. 3 Hours. Study of the research base for the design and adaptation of curriculum and instructional strategies for students with disabilities in general and special classrooms. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS) or departmental consent. (Typically offered: Spring)

SPED 4443. Career Development and Transition Planning for Students with Disabilities. 3 Hours.
A study of career development theory and the research-based strategies for evaluating, planning, and implementing transition programs for students with disabilities. Prerequisite: Admission into Special Education Bachelor of Science Education (SPEDBS) or departmental consent. (Typically offered: Fall)
SPED 4453. Assessment of Students with Disabilities. 3 Hours.
A study of the methods and techniques of the assessment of children in all areas of exceptionality with emphasis on diagnosis, classification, and tracking progress. Field experience required. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS) or departmental consent. (Typically offered: Fall)
SPED 4453H. Honors Assessment of Students with Disabilities. 3 Hours.
A study of the methods and techniques of the assessment of children in all areas of exceptionality with emphasis on diagnosis, classification, and tracking progress. Field experience required. (Typically offered: Fall)
This course is equivalent to SPED 4453.

SPED 4463. Teaching Students with Extensive Support Needs. 3 Hours. A study of methods and materials for teaching students (K-12) with extensive support needs, including those with intellectual disability, autism, other health impairments, and multiple disabilities. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Birth through Kindergarten Bachelor of Science Human Environmental Sciences (BRKDBS), or departmental consent. (Typically offered: Spring)
SPED 4473. Teaching Students with Disabilities in Math and Science. 3 Hours. A study of content, methods, and materials for teaching mathematics and science to students with diverse learning needs and how to adapt curriculum to meet diverse needs. Field experience required. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS) or departmental consent. (Typically offered: Spring)

SPED 4483. Teaching Literacy Skills to Students with Disabilities. 3 Hours. This course will offer a detailed study of how to systematically and explicitly teach essential reading skills to students with disabilities or those at-risk for learning difficulties. Field experience required. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Childhood Education Bachelor of Science in Education (CHEDBS), or departmental consent. (Typically offered: Fall)
SPED 4493. Introduction to Students with High Incidence Disabilities. 3 Hours. The purpose of this course is to develop an understanding of high incidence disabilities, understand the unique characteristics as they apply to the context of the K-12 classroom, be able to design an appropriate classroom setting, and use evidence-based teaching practices for students with high incidence disabilities. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Birth through Kindergarten Bachelor of Science Human Environmental Science (BRKDBS), or departmental consent. (Typically offered: Fall)
SPED 4538. Special Education Internship - Kindergarten through 6th Grade. 8 Hours.
Provides the opportunity to focus demonstrating and refining teaching skills through a teaching internship in special education grades K-6 grades while simultaneously developing a professional portfolio. Must be taken concurrently with SPED 4543. Corequisite: SPED 4543. (Typically offered: Fall)

SPED 4543. Special Education Seminar - Kindergarten through 6th Grade. 3 Hours.
Provides the opportunity to focus on issues encountered in the teaching internship in special education grades kindergarten through sixth grades while simultaneously developing a professional portfolio. Must be taken concurrently with SPED 4538. Corequisite: SPED 4538. (Typically offered: Fall)
SPED 4553. Special Education Research - Kindergarten through 6th Grade. 3 Hours.
Designing, conducting and applying research to improve classroom instruction in special education (K-6). (Typically offered: Fall)

SPED 4568. Special Education Teaching Internship - 7th through 12th Grade. 8 Hours.
Provides the opportunity to focus demonstrating and refining teaching skills through a teaching internship in special education grades 7-12 grades while simultaneously developing a professional portfolio. Must be taken concurrently with SPED 4573. Corequisite: SPED 4573. (Typically offered: Spring)
SPED 4573. Special Education Seminar - 7th through 12th Grade. 3 Hours. Provides the opportunity to focus on issues encountered in the teaching internship in special education grades seventh through twelfth grades while simultaneously developing a professional portfolio. Must be taken concurrently with SPED 4568. Corequisite: SPED 4568. (Typically offered: Spring)
SPED 4583. Special Education Research - 7th through 12th Grade. 3 Hours.
Designing, conducting and applying research to improve classroom instruction in special education (7-12). (Typically offered: Spring)

# STEM Education (STEM) 

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Department Head
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STEM Education Website (https://STEM.uark.edu/)
The Department of Curriculum and Education offers a minor in STEM Education and a Certificate of Proficiency in STEM Education, both of which are open to students majoring in the STEM fields - science, technology, engineering and mathematics - and who are interested in acquiring valuable communication skills in these complex subject areas, in developing a deeper understanding of how people learn science, mathematics, and computer science, and in applying research-based strategies to engage others in understanding these subjects.

The certificate and minor in STEM Education are also initial pathways into the undergraduate teacher licensure program that prepares secondary teachers in the following subjects: mathematics, biology, chemistry, physics, or computer science.

## Requirements for Minor in STEM Education

A minimum GPA of 3.0 required to earn the minor. Of the 15 credit hours, a minimum of 9 credit hours must be STEM, CIED, SEED, or CATE courses.

The 15 -credit-hour minor in STEM Education is not a teacher licensure program. However, these courses can be applied to the undergraduate teacher licensure program that prepares students for secondary licensure in the following subjects: Mathematics, Biology, Chemistry, Physics, or Computer Science. For questions about teacher licensure, please visit the Office of Teacher Education (https://teacher-education.uark.edu/). Students may also consider the one-year Master of Arts in Teaching program as a path to teacher licensure.

## Course Requirements

| STEM 2003 | The Art of STEM Communication | 3 |
| :---: | :---: | :---: |
| or ARSC 1201 | Introduction to Teaching STEM Subjects |  |
| \& ARSC 1212 | and Inquiry Approach to Teaching STEM Subjects |  |
| STEM 2103 | Knowing and Learning in Science and Mathematics | 3 |
| STEM 3203 | Classroom Interactions | 3 |
| Electives chosen f |  | 6 |
| ARSC 1201 | Introduction to Teaching STEM Subjects ${ }^{1}$ |  |
| ARSC 1212 | Inquiry Approach to Teaching STEM Subjects ${ }^{1}$ |  |
| STEM 2003 | The Art of STEM Communication ${ }^{1}$ |  |
| STEM 4333 | History and Philosophy of Science for Science Teachers |  |
| $\text { BIOL } 3273$ <br> or CHEM 32 <br> or PHYS 32 | Inquiry and Modeling in Science Education $278 q u i r y$ and Modeling in Science Education 7 Bquiry and Modeling in Science Education |  |
| MATH 2903 | Functions, Foundations and Models |  |
| CATE 4073 | Introduction to Teaching Programming in the Secondary Schools |  |
| SEED 4003 | Teaching Secondary Science |  |
| STEM 4303 | Teaching Secondary Mathematics I |  |
| STEM 4313 | Teaching Secondary Mathematics II |  |

Total Hours
${ }^{1}$ Can be used only once for the minor.

## Certificate of Proficiency in STEM Education

The Certificate in STEM Education is for STEM majors interested in acquiring valuable communication skills in these complex subject areas, developing a deeper understanding of how people think about and learn these subjects, and applying research-based strategies to engage others in understanding these subjects.

The 9 credit hour Certificate in STEM Education is not a minor or teacher licensure program. However, these courses can be applied to the undergraduate Minor in STEM Education and also the teacher licensure program that prepares students for secondary licensure in the following subjects: mathematics, biology, chemistry, physics, or computer science. Contact a STEM Education faculty adviser at teach@uark.edu.

| STEM 2003 | The Art of STEM Communication | 3 |
| :--- | :--- | :--- |
| Electives chosen from: (3 hrs must be 3000/4000 level) | 6 |  |
| ARSC 1201 | Introduction to Teaching STEM Subjects |  |
| \& ARSC 1212 | and Inquiry Approach to Teaching STEM Subjects |  |
| STEM 2103 | Knowing and Learning in Science and Mathematics |  |
| STEM 4333 | History and Philosophy of Science for Science <br> Teachers |  |
| CATE 4073 | Introduction to Teaching Programming in the <br> Secondary Schools |  |
| BIOL 3273 | Inquiry and Modeling in Science Education |  |
| CHEM 3273 | Inquiry and Modeling in Science Education |  |
| PHYS 3273 | Inquiry and Modeling in Science Education |  |
| MATH 2903 | Functions, Foundations and Models |  |
| EDST 4113 | Teaching and Funding Outdoor \& Informal |  |

Total Hours

## Teaching K-12 Physical Education and Health (PHED)

The major leading to a B.S.E. in Teaching K-12 Physical Education and Health provides students wit the knowledge and skills to design quality physical education and health lessons and programs for K-12 school children. Graduates will learn to effectively work as a teacher or coach in the K-12 school environment and have the skills needed to establish a class environment that promotes learning and engage students.

The program leads to licensure in teaching of K-12 physical education and health.

## Requirements for B.S.E. in Teaching K-12 Physical Education and Health

Admission to the Teaching K-12 Physical Education and Health, which prepares a student to teach in the public schools, begins as a PreTeaching K-12 Physical Education and Health major. For admission to the major, the following is required:

1. Complete the Pre-Teaching K-12 Physical Education and Health requirements (see course list below).
2. Have a 2.5 or higher University of Arkansas GPA. ${ }^{1}$
3. Register with the Office of Teacher Education (see the Teacher Education Application Fee) in the fall of the sophomore year and complete an Arkansas State Police and Arkansas Child Maltreatment Registry background check. Students will be emailed a certification letter from the Office of Teacher Education once they have successfully completed these steps. The certification letter must be emailed by the student to the Teaching K-12 Physical Education and Health program coordinator to formally complete the admission process to the Teaching K-12 Physical Education and Health program.

## Pre-Teaching K-12 Physical Education and Health

| PHED 1003 or CIED 1013 | The Physical Education Profession: An Overview Introduction to Education | 3 |
| :---: | :---: | :---: |
| PHED 2023 or PHED 2373 | Sport Skills <br> Elementary Physical Education | 3 |
| PBHL 1103 | Personal Health and Safety | 3 |
| Total Hours |  | 9 |

1 All students, including transfer students must complete at least 12 credit hours at the University of Arkansas with a minimum of 2.5 GPA.

Deadlines to submit the information for the Teaching K-12 Physical Education and Health Program above are May 1 (typically spring sophomore year) for fall admission and Nov. 1 (typically fall junior year) for spring admission. Appeals must be made to the PHED Program Coordinator for admission after these deadlines.

- To enroll in PHED 3003 and PHED 3043, students are required to be admitted to the Teaching K-12 Physical Education and Health major.
- To enroll in PHED 4703, PHED 4743, and PHED 432V, students are required to have a cumulative grade point average of 2.7 or above and be admitted to the Teaching K-12 Physical Education and Health major.

To be eligible to enroll in the Senior Block Internship semester (PHED 4023, PHED 407V, PHED 4733), students are required to:

- Be admitted to the Teaching K-12 Physical Education and Health major.
- Have a cumulative grade point average of 2.7.
- Take the Praxis II exams required by the Arkansas Department of Education licensure area of K-12 Physical Education, Wellness and Leisure by December 1st.

In order to complete the Teaching K-12 Physical Education and Health major, students must complete all University and PHED program requirements for graduation.

Students interested in obtaining an endorsement in coaching should contact the Director of Teacher Licensure in the Office of Teacher Education. (https://teacher-education.uark.edu/licensure/)

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Pre-PHED

State Minimum Core \({ }^{1}\)
PSYC \(2003 \begin{aligned} & \text { General Psychology (ACTS Equivalency = PSYC } \\ & \text { 1103) }\end{aligned}\)
Additional Requirements for Teaching K-12 Physical Education and Health (55-56 hours)
\begin{tabular}{|c|c|c|}
\hline COMM 1313 & Public Speaking (ACTS Equivalency = SPCH 1003) & 3 \\
\hline PHED 2023 or PHED 2373 & \begin{tabular}{l}
Sport Skills \({ }^{2}\) \\
Elementary Physical Education
\end{tabular} & 3 \\
\hline PHED 3163 & Applied Kinesiology & 3 \\
\hline PHED 3203 & Principles and Problems of Coaching & 3 \\
\hline PHED 3223 & Motor Development & 3 \\
\hline PHED 3573 & The School Health Program & 3 \\
\hline PHED 3623 & Sport Sociology & 3 \\
\hline PHED 3903 & Physical Education for Special Populations & 3 \\
\hline CIED 3033 & Classroom Learning Theory & 3 \\
\hline CNED 4003 or CNED 3053 & Classroom Human Relations Skills The Helping Relationship & 3 \\
\hline \multicolumn{3}{|l|}{PHED Pedagogical Courses \({ }^{3}\)} \\
\hline PHED 3003 & Outdoor Education & 3 \\
\hline PHED 3043 & Teaching Fitness & 3 \\
\hline \multicolumn{3}{|l|}{Senior PHED Courses \({ }^{3}\)} \\
\hline PHED 432V & Teaching Practicum (1 or 2 hours) & 1-2 \\
\hline PHED 4743 & Secondary Physical Education & 3 \\
\hline PHED 4703 & Assessment in Physical Education & 3 \\
\hline \multicolumn{3}{|l|}{Internship Semester \({ }^{3}\)} \\
\hline PHED 4023 & Class Management & 3 \\
\hline PHED 407V & Physical Education Teaching Internship & 6 \\
\hline PHED 4733 & Senior Seminar & 3 \\
\hline
\end{tabular}

General Electives 20-21
As needed for total hours based on waivers, exemptions and transfer inequalities
Total Hours
\({ }^{1}\) In addition to PSYC 2003 listed under State Minimum Core, students must also choose other courses to fulfill the State Minimum Core (p. 81).

2 Student must choose one course to take as part of the additional requirements and one course as part of the Pre-PHED.
\({ }^{3}\) Courses open to PHED majors only.

All students seeking licensure in the state of Arkansas are subject to a criminal background check. Forms for this procedure may be obtained at the office of the Teacher Certification Officer, at the State Department, or any police station, including the campus police. These background checks take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities six months in advance of actually applying for a license. Arkansas will not certify anyone who has been convicted of a felony. Although not required for the Kinesiology concentration in Physical Education, Wellness and Leisure, students seeking coaching endorsement will need to take PHED 4001, take the appropriate standardized exams (ACT, SAT, GRE, or PRAXIS core) as designated by the Arkansas State Department of Education, and make a "C" or better in all courses required by the University of Arkansas for the Coaching Endorsement. Please see the College of Education and Health Professions PDF (http://coehp.uark.edu/CoachingALP.pdf) for these specific course numbers.

\section*{Student Dismissal Policy based on Unethical/Unprofessional Behavior}

The University of Arkansas' teacher preparation programs adhere to the Code of Ethics of the Education Profession as established by the National Education Association as described in NEA Code of Ethics, Arkansas Division of Elementary and Secondary Education Code of Ethics, as well as discipline specific codes of ethics and standards found in program handbooks. Violation of these principles may result in probation, suspension, or dismissal of the internship as described:
1. Any incident of ethical misconduct or concern will be documented by the faculty member(s), discussed directly with the student and their mentor, and referred to the program's coordinator or supervising faculty. It may also be reported to the Teacher Candidate Professional Review Committee.
2. The Teacher Candidate Professional Review Committee evaluates the concerns and recommends a course of action, which may range from a zero score on the academic and/or internship work, a failing grade for the course, probation, up to dismissal from a teacher education program.
3. Any candidate may be suspended by a Teacher Education Program Coordinator for extreme, unforeseen circumstances such as endangerment of students or others, disruption of schools or classes, felonious behaviors, or ethical violations (i.e., Arkansas Code of Ethics, Code of Student Life). Such suspensions will be referred to the Teacher Candidate Professional Review Committee for review and may become permanent.

The Program Coordinator, in consultation with the Teacher Education Professional Review Committee and the Dean's Office for Academic and Student Affairs in the College of Education and Health Professions, has the authority and responsibility to dismiss a student from the teacher education program for unethical or unprofessional behavior and/or not recommend the student for licensure. More detailed guidelines about the policies, supports, and other requirements are provided in the program's handbook, as well as on the Office of Teacher Education website or the Teacher Education Support page.

Students who have been dismissed on the basis of unethical or unprofessional conduct may appeal the decision following the procedures outlined under the Student Grievances and Appeals section of the Undergraduate Catalog of Studies (https://nam11.safelinks.protection.outlook.com/?url=http \%3A\%2F\%2Fcatalog.uark.edu\%2Fundergraduatecatalog \%2Facademicregulations\%2Fstudentacademicappeals \%2F\&data=04\%7C01\%7Cagriffin\%40uark.edu \%7C2ce8b829e8e040a2614108d8b32229d4\%7C79c742c4e61c4fa5be89a3c \%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQljoiV2luMzliLCJBTil6Ik1h \%7C1000\&sdata=HJfCw \%2BlavTFgx5n3xFWS0XdeBVvInxmiEAaQ1prgywk\%3D\&reserved=0).

\section*{Teaching K-12 Physical Education \& Health Eight-Semester Degree Program}

The teacher education program for Teaching K-12 Physical Education \& Health does not qualify for the eight semester degree plan due to the cumulative GPA requirements for progression. However, the following 8semester sample plan shows how a first-year student could select their courses to finish in four years.
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{First Year} & \multicolumn{2}{|r|}{Units} \\
\hline & Fall & Spring \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) & 3 & \\
\hline Social Sciences State Minimum Core (except PSYC 2003) (Satisfies General Education Outcome 3.3) \({ }^{1,2}\) & 3 & \\
\hline Science State Minimum Core (Satisfies General Education Outcome 3.4) \({ }^{1}\) & 4 & \\
\hline PBHL 1103 Personal Health and Safety & 3 & \\
\hline PHED 1003 The Physical Education Profession: An Overview & 3 & \\
\hline ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1) & & 3 \\
\hline MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1) & & 3 \\
\hline COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education Outcomes 1.2 and 5.1) & & 3 \\
\hline U.S. History or Government State Minimum Core (Satisfies General Education Outcome 4.2) \({ }^{1}\) & & 3 \\
\hline PHED 2023 Sport Skills & & 3 \\
\hline Year Total: & 16 & 15 \\
\hline \multirow[t]{2}{*}{Second Year} & \multicolumn{2}{|r|}{Units} \\
\hline & Fall & Spring \\
\hline PHED 3223 Motor Development & 3 & \\
\hline PSYC 2003 General Psychology (ACTS Equivalency = PSYC 1103) (Satisfies General Education Outcome 3.3) & 3 & \\
\hline General Elective & 3 & \\
\hline Fine Arts or Humanities State Minimum Core (Satisfies General Education Outcome 3.1 or 3.2) 2 & 3 & \\
\hline Science State Minimum Core (Satisfies General Education Outcome 3.4) \({ }^{1}\) & 4 & \\
\hline \begin{tabular}{l}
Social Sciences State Minimum Core (except \\
 \\

\end{tabular} & nnown & 3 \\
\hline Humanities or Fine Arts State Minimum Core (Satisfies General Education Outcome 3.2 or 3.1) 2 & & 3 \\
\hline General Elective & & 6 \\
\hline PHED 2373 Elementary Physical Education & & 3 \\
\hline Year Total: & 16 & 15 \\
\hline \multirow[t]{2}{*}{Third Year} & \multicolumn{2}{|l|}{\multirow[t]{2}{*}{\[
\begin{array}{rr} 
& \text { Units } \\
\text { Fall } & \text { Spring }
\end{array}
\]}} \\
\hline & & \\
\hline PHED 3003 Outdoor Education & 3 & \\
\hline CIED 3033 Classroom Learning Theory & 3 & \\
\hline PHED 3203 Principles and Problems of Coaching & 3 & \\
\hline PHED 3903 Physical Education for Special & 3 & \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline PHED 3163 Applied Kinesiology & \multirow[t]{2}{*}{3} & \\
\hline PHED 3043 Teaching Fitness & & 3 \\
\hline PHED 3623 Sport Sociology (Satisfies General Education Outcome 4.1) & & 3 \\
\hline General elective & & 9 \\
\hline Year Total: & 15 & 15 \\
\hline Fourth Year & & Units \\
\hline & Fall & Spring \\
\hline PHED 3573 The School Health Program & 3 & \\
\hline CNED 4003 Classroom Human Relations Skills & 3 & \\
\hline PHED 432V Teaching Practicum & 1 & \\
\hline General Elective & 3 & \\
\hline PHED 4703 Assessment in Physical Education & 3 & \\
\hline PHED 4743 Secondary Physical Education & 3 & \\
\hline PHED 4023 Class Management & & 3 \\
\hline PHED 407V Physical Education Teaching Internship & & 6 \\
\hline PHED 4733 Senior Seminar (Satisfies General Education Outcome 6.1) & & 3 \\
\hline Year Total: & 16 & 12 \\
\hline
\end{tabular}

\section*{Total Units in Sequence:}
\({ }^{1}\) Core areas must be completed as outlined in State Minimum Core (p. 81).

2 Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3 \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3c \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.

\section*{Courses}

PHED 1003. The Physical Education Profession: An Overview. 3 Hours. An introduction to the teaching of physical education. (Typically offered: Fall and Spring) May be repeated for degree credit.

PHED 2023. Sport Skills. 3 Hours.
This course is designed to prepare the student to teach sport skills, primarily those taught in grades 5-8. (Typically offered: Fall)
PHED 2373. Elementary Physical Education. 3 Hours.
Program planning and techniques of teaching physical education activities to children; for early childhood, elementary and physical education teachers, supervisors, and principals. (Typically offered: Spring)

\section*{PHED 3003. Outdoor Education. 3 Hours.}

PHED 3043. Teaching Fitness. 3 Hours.
Instructional strategies for teaching public school students about fitness concepts. Prerequisite: Admission into PHED BSE program is required. (Typically offered: Spring)

\section*{PHED 3163. Applied Kinesiology. 3 Hours.}

Examination of the physiological responses and biomechanical principles of movement. The exploration includes the study of the maturation of the body's functional capacities as it relates to exercise and the fundamental principles of mechanical analysis of movement. (Typically offered: Fall)

PHED 3203. Principles and Problems of Coaching. 3 Hours.
A focus on the various aspects of coaching the athletes in contemporary society through an examination of research findings related to factors affecting performance. Attention to be given to principles, problems and understanding essential to the management of athletic contests. (Typically offered: Fall)

\section*{PHED 3223. Motor Development. 3 Hours.}

An overview of contemporary motor development and movement theory, developmental hierarchies, and physiological aspects of development throughout the lifespan. (Typically offered: Fall and Spring)
PHED 3413. Administration in Physical Education. 3 Hours.
An examination of the administrative duties of the physical education teacher. (Typically offered: Spring)

PHED 3573. The School Health Program. 3 Hours.
 well as the teacher's potential role in each. Prerequisite: PBHL 1103. (Typically offered: Fall)
PHED 3623. Sport Sociology. 3 Hours.
An investigation of the impact of physical education and sport on society. (Typically offered: Spring)

Provides fundamental concepts and skills essential to physical education
programming for students with disabilities. Deals with definitions, disabling conditions, developmental and remedial activities, games, and sports. Prerequisite: Junior standing. (Typically offered: Fall)
PHED 391V. Special Topics in PHED. 1-3 Hour.
Designed to cover specialized topics not presented in physical education coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{PHED 3991H. Physical Education Honors Thesis Tutorial. 1 Hour.}

Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and PHEDBS major. (Typically offered: Fall, Spring and Summer)

\section*{PHED 4001. Coaching Practicum. 1 Hour.}

Designed for students who want to add the Coaching Endorsement to the state teaching license. Student serves as a coaching assistant with a local school, University or recreational sports team. Students who serves as a coaching assistant with a local school must successfully complete a criminal background check prior to beginning coaching practicum. Prerequisite: PHED 3203 and proof of current First Aid/CPR/AED certification submitted to instructor of record. (Typically offered: Fall and Spring)

\section*{PHED 4023. Class Management. 3 Hours.}

This course is designed to provide opportunities for the student to acquire an understanding that emphasizes class management; and includes professional ethics, and school policies related to students, faculty, and programs. Corequisite: PHED 407V and PHED 4733. Prerequisite: Admission into PHED BSE program, earn a cumulative grade point average of 2.7, and take the Praxis II exams required by the Arkansas Department of Education licensure area of K-12 Physical Education, Wellness and Leisure by December 1st. (Typically offered: Spring)

\section*{PHED 407V. Physical Education Teaching Internship. 1-9 Hour.}

This internship involves supervised teaching experience in a P-12 setting. Students will be placed under the guidance of a mentor teacher at specific school sites within NW Arkansas. Internship will be done at both the elementary and secondary levels. Successful completion of a criminal background check is required before beginning internship. Corequisite: PHED 4023 and PHED 4733. Prerequisite: Admission into PHED BSE program, earn a cumulative grade point average of 2.7, and take the Praxis II exams required by the Arkansas Department of Education licensure area of K-12 Physical Education, Wellness and Leisure by December 1st. (Typically offered: Spring)
PHED 432V. Teaching Practicum. 1-2 Hour.
K-12 Kinesiology majors serve as a teaching assistant with a local school physical education teacher. This course should be taken the semester before PHED 407V Internship. Prerequisite: Admission into PHED BSE program and a cumulative grade point average of 2.7 are required. (Typically offered: Fall)

PHED 4703. Assessment in Physical Education. 3 Hours.
An examination of the assessment duties required of a physical education teacher. The use of authentic assessment and various grading strategies will be investigated. Prerequisite: Admission into PHED BSE program and a cumulative grade point average of 2.7 are required. (Typically offered: Fall)

\section*{PHED 4733. Senior Seminar. 3 Hours.}

This capstone class will cover special topics for the Kinesiology P-12 students in preparation for entry into the profession. Resumes, cover letters, teaching philosophy, references, and interview preparation will be included. Students will also review contemporary issues relevant to the physical education teacher. Corequisite: PHED 4023. Prerequisite: Admission into PHED BSE program, earn a cumulative grade point average of 2.7, and take the Praxis II exams required by the Arkansas Department of Education licensure area of K-12 Physical Education, Wellness and Leisure by December 1st. (Typically offered: Spring)

PHED 4743. Secondary Physical Education. 3 Hours.
Strategies and curriculum for physical education, grades 7-12. Prerequisite:
Admission into PHED BSE program and a cumulative grade point average of 2.7 are required. (Typically offered: Fall)
PHED 480V. Workshop. 3-6 Hour.
Physical education workshop. Prerequisite: Instructor consent. (Typically offered: Summer)

\section*{College of Engineering Mission and Objectives}

Ever since people first began to use tools and manipulate their surroundings, engineering has been a vital aspect of human life, and these days, engineering is as important as it ever was. Society turns
to engineers to solve a range of social, economic and environmental problems, and an engineering degree can prepare students to work as managers and leaders, in the public or private spheres. Engineering education combines math and science with creativity, innovation and a passion to change the world.

The College of Engineering adds personal, social and economic value to the region, the state, the nation, and the world through engineering education and cutting-edge research in emerging technologies.

Recognizing that the University of Arkansas, Fayetteville, is a land-grant institution with consequent responsibilities in teaching, research, and service, and realizing that these are mutually dependent and necessary responsibilities, the College of Engineering adopts and seeks to fulfill the following statements of purpose.

Undergraduate Education - Offer a high-quality and fully accredited course of instruction involving classroom, laboratory, and extracurricular activities that will result in professionals qualified to begin careers in the field of engineering and prepared to assume responsible places of leadership in society.

Graduate Education and Research — Offer state-of-the-art coursework and research experiences that result in all graduates being capable of independent analysis and design, and all Ph.D. graduates capable of extending the state-of-the-art in their areas of expertise.

Continuing Education - Provide local, regional, national, and international seminars, symposia, short courses, and credit courses to engineers and others in the technical community to help them further their formal education and keep abreast of new developments in technology.

Technology Development and Job Creation - Assist actively and vigorously in the growth and development of the state of Arkansas and the nation by performing research and developing innovative new technology, by updating the existing technology within industrial circles, by providing educational support services, and by attracting and creating new industry.

The College of Engineering focuses on research, teaching and outreach in the following areas:
- Health care and healthcare systems
- Cyber and Homeland Security
- Big Data and Data Analytics
- Sustainability and the built environment
- Electric power systems and advanced power electronics
- Electronics manufacturing
- Environmental and ecosystems analysis
- Mixed signal electric systems
- Materials and manufacturing
- Nanotechnologies
- Transportation, logistics and infrastructure

More information about the College of Engineering can be found at the College of Engineering website (http://www.engr.uark.edu/).

\section*{College of Engineering Strategic Plan "Preparing You for Your Tomorrow"}

For more than 100 years, the College of Engineering has successfully fulfilled its primary mission: to provide an excellent engineering education to undergraduate and graduate students at the University of Arkansas.

The College of Engineering faculty, staff, alumni and students decided to accept the challenge to become one of the best. Specifically, the college's collective goal is:

To become and be recognized as one of the top tier graduate and undergraduate engineering programs in the U.S.

The College's strategic plan encompasses seven main goals. By successfully accomplishing these objectives, the College of Engineering will contribute to the University of Arkansas becoming a nationally competitive, student-centered research institution serving Arkansas and the world, effectively fulfilling its purpose.

\section*{Strategic Goals}
1. Provide a student-centered educational experience that attracts diverse, high-quality students, helps them to realize their potential, inspires them to pursue excellence at all degree levels and grooms them to become leaders in their profession.
2. Create a supportive research environment that enhances and recognizes scholarship while stimulating entrepreneurship and economic development within Arkansas, the nation and world.
3. Recruit, mentor and retain high-quality and diverse faculty members who value and promote world-class scholarship.
4. Attract, develop and retain well-qualified, diverse and skilled staff members who are equipped to support the growth and potential of the College of Engineering.
5. Implement service and outreach to enhance the impact of the College of Engineering both within and outside the university through service and outreach.
6. Become a catalyst for economic development to achieve the longterm economic goals of Arkansas through entrepreneurship, research and collaboration with industry and government.
7. Cultivate corporate and alumni relationships to improve educational opportunities and assist in providing a high quality educational infrastructure.

\section*{College Admission Requirements Undergraduate Students}

Freshmen admitted to the University of Arkansas, Fayetteville, are eligible to enroll in the College of Engineering. The freshman curriculum stresses a basic foundation in mathematics, physics, and chemistry, which will be required in later years. The sophomore, junior, and senior years are spent in a strong concentration on the student's chosen field, with emphasis on industrial applications of classroom and laboratory work. By the selection of electives, a student can concentrate in depth in a particular subject, have the flexibility to study several subjects, and minor in an area of interest. Provisions are made for electives in the humanities and social sciences as a means of providing a well-rounded education.

\section*{International Students}

Before being admitted all computer engineering applicants must submit a Test of Spoken English (TSE) score of at least 5.0, or a 7.0 on the spoken
section of the IELTS, and an ACT score of 25 (or SAT score of 1140(R)) or above, to be eligible for admission.

\section*{Transfer Students}

In addition to the university policies controlling the granting of credit for course work taken at other institutions, the College of Engineering specifies that advanced ( 3000 - and 4000-level at the University of Arkansas) engineering courses may not normally be transferred from institutions that do not have engineering programs accredited by the Engineering Accreditation Commission or the Computing Accreditation Commission of ABET.

\section*{Laptop Requirement}

The College of Engineering requires that entering first-year students have a laptop computer and strongly recommends that entering students obtain a computer that meets or exceeds the college's requirements.
The most up-to-date engineering specifications for laptops can be found on the Computer Recommendation page (https://its.uark.edu/ software-equipment/tech-store/student-recommendations.php\#college-of-engineering). The minimum requirements for the entering fall class are updated annually in the spring. The College of Engineering recommends that you wait until the summer to purchase a new computer to get the most up-to-date system.

An adjustment to your financial aid for the purchase of a computer may be available by completing a Budget Adjustment Form (https:// finaid.uark.edu/office_information/forms.php) through the University Financial Aid Office (https://finaid.uark.edu/financial_aid_information/).

\section*{College Scholarships}

The College of Engineering awards numerous scholarships, and most are based primarily on academic performance. However, scholarships may also be awarded on the basis of financial need and diversity. Scholarships are available from both the college and its individual departments. College scholarships are available to any engineering student, and departmental scholarships are meant for students enrolled in a particular discipline of engineering. College and departmental scholarships are not available for entering freshmen. Students must be admitted to the University of Arkansas and enrolled in the College of Engineering to qualify and receive either a college or departmental scholarship. The college has a one-step application process that allows a student to be considered for all collegelevel and departmental scholarships.

For more information concerning scholarship and diversity opportunities, contact the Engineering Student Affairs Office at 575-3051 or e-mail engrdean@uark.edu.

\section*{Facilities and Resources \\ Instructional, Computer, and Laboratory Facilities}

Undergraduate instruction in engineering takes place in Bell Engineering Center, John H. White Jr. Engineering Hall, J.B. Hunt Center for Academic Excellence, and the Mechanical Engineering building. These facilities contain state-of-the-art classrooms and instructional equipment. Undergraduate laboratories are located both on the main campus as well as at the Engineering Research Center. Laboratories offer students hands-on experience relating to the subject matter addressed in the classroom.

The College of Engineering utilizes a wide variety of computing equipment to assist in engineering education. Students have easy access to
computers through general computer laboratories or computer facilities located in specialized laboratories within the college. The computers are networked so that all the computing power of the university, including the mainframe computers, can be accessed from the PCs or workstations provided for engineering students. Owning a personal computer is not required; however, it is beneficial.

\section*{Laboratory Fee}

In order to maintain the college's state-of-the-art instructional and computer laboratories, each student enrolled in an engineering course is assessed a laboratory fee for that term. This fee is used only to purchase and maintain equipment and staff the engineering laboratories and classrooms to assist students.

\section*{Library}

The books and references used by engineering students and faculty are housed principally in the University of Arkansas Mullins Library. This collection is the most useful and comprehensive engineering library in the state. Many publications pertinent to the engineering profession are being added continuously. Mullins Library is the depository for water resources papers, geological survey materials, and NASA publications, as well as other governmental and industrial series.

\section*{Engineering Research Center}

The 178,000-square-foot Engineering Research Center is located approximately two miles south of the main campus. The center provides the facilities and support services for a wide variety of research activities. It houses the Engineering Experiment Station through which the research of individual departments in the college is administered. Centers and laboratories located at the Engineering Research Center include GENESIS, the High Density Electronics Center, the Center for Training Transportation Professionals, and the Chemical Hazards Research Center.

\section*{Distance Learning}

A Master of Science in Engineering (M.S.E.) degree is available for students who wish to take a broad range of engineering courses. See the Graduate School Catalog for details.

Professional development and continuing education credits can be earned through the College of Engineering's Center for Distance Learning. These courses provide ongoing training on technical and engineering topics for professional engineers, land surveyors, and others in the technical and engineering professions.

The Master of Science in Operations Management (M.S.O.M.) degree program at the University of Arkansas offers students the philosophy, concepts, and techniques needed to manage available resources to achieve maximum efficiency and effectiveness in meeting operational goals. It provides the tools needed for successful management in industrial and/or military settings. Geared toward the working student, classes meet in the evenings in five 8-week terms per year. The program is offered at military installations at Little Rock Air Force Base (Jacksonville, Ark.), Naval Support Activity Mid-South (Millington, Tenn.), Hurlburt Field, Fla., and at in-state sites at Fayetteville, Bentonville, Camden, and Blytheville. Students in remote locations may also earn the MSOM degree by taking video courses. This is a non-engineering degree that is open to students from all undergraduate backgrounds. See the Graduate School catalog for details.

\author{
Cooperative Education \\ GNEG 3801 Parallel Cooperative Education (1 Hour)
}

Part-time supervised experience in industry where students apply classroom skills to problems specific to their discipline in a professional workplace setting. Credit may not be applicable to all degree programs in engineering. Offered Fall, Spring, and Summer. Prerequisites: must have completed 30 hours towards engineering degree requirements; must have a minimum 2.50 cumulative GPA; must be working part-time (fewer than 25 hours) at co-op; transfer students (transferring 24 or more hours) must have completed 12 credit hours in the College of Engineering; U.S. citizens must be enrolled at least half-time ( 6 hours; spring and fall terms only); International F-1 visa students must have completed at least 30 weeks of study in the USA and must be enrolled full-time (12 hours; spring and fall terms only, per immigration regulations). These requirements are accurate for international students as of February 2021 and are subject to change based on immigration requirement changes within the law; for the most up-to-date requirements, please visit the Cooperative Education Overview page (https://engineering.uark.edu/career-services/students/ cooperative-education-overview.php).

\section*{GNEG 3811 Alternating Cooperative Education (1 Hour)}

Full-time supervised experience in industry where students apply classroom skills to problems specific to their discipline in a professional workplace setting. Application of credit to a degree program is at the discretion of the department owning the degree program. Offered Fall, Spring, and Summer. Prerequisites: must have completed 30 hours toward engineering degree requirements; must have a minimum of 2.50 cumulative GPA; must have at least 12 hours of required coursework in their major remaining upon return to campus; must be working full-time (40-plus hours); must not be enrolled in more than 3 credit hours; transfer students (transferring 24 or more hours) must have completed 12 credit hours in the College of Engineering; International F-1 visa must have completed at least 30 weeks of study in the USA and students may only enroll during summer per immigration and College of Engineering regulations. These requirements are accurate for international students as of February 2021 and are subject to change based on immigration requirement changes within the law; for the most up-to-date requirements, please visit Cooperative Education Overview page (https://engineering.uark.edu/career-services/students/cooperative-education-overview.php).

\section*{GNEG 5801 Parallel Cooperative Education (1 Hour)}

Part-time supervised experience in industry where students apply focused, discipline specific, classroom and research skills to problems directly related to their area of study in a professional workplace setting. A combination of GNEG 5801 or GNEG 5811 may be repeated for up to 3 hours of non-degree credit. Offered Fall, Spring, and Summer. Prerequisites: must have completed at least 6 hours of graduate level engineering courses meeting degree requirements at the University of Arkansas; must have a minimum of 3.0 cumulative GPA; must be working part-time (fewer than 25 hours) at co-op; must have approval of graduate committee chair prior to interviewing for co-op; must not hold a TA, GA, or RA position during the work experience; must have at least 3 required hours (Master's students) or 6 required hours (Ph.D. students) of course work remaining upon return to campus; U.S. Citizens must be enrolled at least half-time (5 hours, spring and fall terms only); International F-1 visa students must have completed 30 weeks of study in the USA and must be enrolled full-time ( 9 hours; spring and fall terms only, per immigration regulations); M.S.O.M. students must have completed OMGT 5003 Introduction to Operations Management (with a
grade of \(B\) or better) and one OMGT graduate elective directly applicable to the proposed internship experience. These requirements are accurate for international students as of February 2021 and are subject to change based on immigration requirement changes within the law; for the most up-to-date requirements, please visit Cooperative Education Overview page (https://engineering.uark.edu/career-services/students/cooperative-education-overview.php).

\section*{GNEG 5811 Alternating Cooperative Education (1 Hour)}

Full-time supervised experience in industry where students apply focused, discipline specific, classroom and research skills to problems directly related to their area of study in a professional workplace setting. A combination of GNEG 5801 or GNEG 5811 may be repeated for up to 3 hours of non-degree credit. Offered Fall, Spring, and Summer. Prerequisites: must have completed at least 6 hours of graduate level engineering courses meeting degree requirements at the University of Arkansas; must have a minimum 3.0 cumulative GPA; must be working full-time (40+ hours) at co-op; must have approval of graduate committee chair prior to interviewing for co-op; must not hold a TA, GA, or RA position during the work experience; must have at least 3 required hours (Master's students) or 6 required hours (Ph.D. students) of course work remaining upon return to campus; must not be enrolled in more than 3 credit hours; International F-1 visa students must have completed at least 30 weeks of study in the USA and may only enroll during summer per immigration and College of Engineering regulations; M.S.O.M. students must have completed OMGT 5003 Introduction to Operations Management (with a grade of B or better) and one OMGT graduate elective directly applicable to the proposed internship experience. These requirements are accurate for international students as of February 2021 and are subject to change based on immigration requirement changes within the law; for the most up-to-date requirements, please visit Cooperative Education Overview page (https://engineering.uark.edu/ career-services/students/cooperative-education-overview.php).

\section*{Student Organizations}

The following are honor societies, social organizations and professional societies to which engineering students at the University of Arkansas may aspire:
- Alpha Chi Sigma (a professional chemistry fraternity)
- Alpha Epsilon (Biological/Agricultural Engineering)
- Alpha Pi Mu (Industrial Engineering)
- Chi Epsilon (Civil Engineering)
- Eta Kappa Nu (Electrical Engineering)
- Omega Chi Epsilon (Chemical Engineering)
- Order of the Engineer (professional engineering society)
- Phi Eta Sigma (freshmen)
- Phi Kappa Phi (juniors and seniors)
- Phi Sigma Rho, (professional engineering sorority)
- Pi Mu Epsilon (Mathematics)
- Pi Tau Sigma (Mechanical Engineering)
- Tau Beta Pi (Engineering)
- Theta Tau, (A professional engineering fraternity, it maintains a chapter house on the campus and is active in university and college affairs.)

Several national engineering societies are listed below that maintain student branches in the College of Engineering, each under the auspices of a professor in a related department.
- American Chemical Society
- American Concrete Institute
- American Ecological Engineering Society
- American Indian Science and Engineering Society
- American Institute of Aeronautics and Astronautics
- American Institute of Chemical Engineers
- American Nuclear Society
- Amateur Radio Club of the University of Arkansas
- American Society of Agricultural and Biological Engineers
- American Society of Civil Engineers
- American Society of Heating, Refrigeration, and Air-Conditioning
- American Society of Mechanical Engineers
- Association for Computing Machinery
- Biomedical Engineering Society
- Engineers Without Borders
- Institute of Biological Engineering
- Institute of Electrical and Electronics Engineers
- Institute of Electrical and Electronics Engineers, Components, Packaging, and Manufacturing Technology Society
- Institute of Electrical and Electronics Engineers, Power Electronics Society
- Institute of Industrial Engineers
- Institute of Transportation Engineers
- International Microelectronics and Packaging Society
- Materials Research Society
- National Society of Professional Engineers
- National Society of Black Engineers
- Society of Automotive Engineers Assoc. for Computing Machinery
- Society of Hispanic Professional Engineers
- Society of Manufacturing Engineers
- Society of Women Engineers
- Transportation and Logistics Association

\section*{College Academic Regulations}

Students are expected to keep themselves informed concerning current regulations, policies, and program requirements in their fields of study and must meet all requirements of the degree programs in which they are enrolled. Courses that are modified or added to a curriculum and that are incorporated into the curriculum at a level beyond that at which a student is enrolled may become graduation requirements for that student. Courses that are incorporated into the curriculum at a level lower than the one at which the student is enrolled are not required for that student.

\section*{Eligibility}

Only students enrolled in the College of Engineering or enrolled in programs in which curricula require engineering courses will be allowed to take engineering courses. Exceptions to this requirement must be approved by the dean of engineering. This does not apply to graduate students.

\section*{Code of Ethics}

Students in the College of Engineering are obligated to comply with pertinent provisions of the Code of Ethics applicable to professional practice following graduation. The Code requires "honesty, impartiality, fairness, and equity," and "adherence to the highest principles of ethical conduct." Most particularly, it states that engineers shall:
1. Be objective and truthful in professional reports, statements, or testimony;
2. Not falsify or permit misrepresentation of their academic or professional qualifications;
3. Give credit for engineering work to those whom credit is due;
4. Not compete unfairly with other engineers by attempting to obtain employment or advancement by improper or questionable methods;
5. Avoid any act tending to promote their own interest at the expense of the dignity and integrity of the profession.

\section*{Degree Requirements}

The basic requirement for a Bachelor of Science degree in engineering is \(124-128\) semester hours of academic work, depending on the career field chosen. Students coming from high school with adequate preparation will be able to satisfy this requirement in eight semesters; however, some students require preparatory courses, and others choose to enroll in slightly lighter loads and graduate in nine or ten semesters. Students enrolled in ROTC require an additional 19 semester hours to meet all graduation requirements and graduate in ten semesters (five years).

Engineering is a rapidly changing profession, and the departmental curricula are updated continuously to keep pace with these changes. Students entering under this catalog will be required to comply with such curriculum changes to earn their degree. However, the total number of semester hours required for the degree may not be increased, and all work completed in accordance with this catalog prior to the curriculum change will be applied toward the student's degree requirements. Former students of the college must meet the curriculum requirements in effect at the time of their readmission.

\section*{Graduation Requirements}

In addition to university requirements for enrollment and graduation, the College of Engineering has these additional requirements. Individual departments may have additional requirements.
1. Grade-Point Average - A candidate for a degree from the College of Engineering must have earned a grade-point average of no less than 2.00 on all courses in the student's major area of study.
2. Courses That Do Not Count Toward a Degree - The following courses, which may be required, do not count toward degree credit for bachelor degrees in the College of Engineering: MATH 1203, MATH 1213, and MATH 1284C or their equivalents.
3. "D" Rule - No student will be allowed to graduate if the student has "D" grades in more than 8 hours presented to meet the requirements for a degree.
4. Transfer of Courses - Advanced (3000- and 4000-level at the University of Arkansas) engineering courses may not normally be transferred from institutions that do not have programs accredited by the Engineering Accreditation Commission.
5. Resident Requirements - A candidate must earn a minimum of 20 credit hours at the 3000 level and above in the College of Engineering from the University of Arkansas.
6. State Minimum Core - The University of Arkansas has adopted the state's minimum requirements of 35 semester-credit-hours of general education courses that are required of all baccalaureate degree candidates. This is in compliance with Arkansas Act 98 of 1989 and the subsequent action of the Arkansas State Board of Higher Education. Beginning in the fall semester of 1991, all state institutions of higher education in Arkansas have a 35 -hour minimum core requirement with specified hours in each of six academic areas. The university and the College of Engineering have identified those courses that meet the minimum requirement, and they are listed in the chart below.
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|l|}{Specific State Minimum Core Requirements for Engineering Students} \\
\hline \multicolumn{3}{|l|}{English} \\
\hline ENGL 1013 & Composition I (ACTS Equivalency = ENGL 1013) & 3 \\
\hline ENGL 1033 & Technical Composition II (ACTS Equivalency = ENGL 1023) & 3 \\
\hline \multicolumn{3}{|l|}{Mathematics} \\
\hline MATH 2554 & Calculus I (ACTS Equivalency = MATH 2405) & 4 \\
\hline \multicolumn{3}{|l|}{Science} \\
\hline PHYS 2054 & University Physics I (ACTS Equivalency \(=\) PHYS 2034) & 4 \\
\hline
\end{tabular}

Select one of the following:
PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture)
CHEM 1123 University Chemistry II (ACTS Equivalency =
\& CHEM 1121LCHEM 1424 Lecture)
and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
BIOL 1543 Principles of Biology (ACTS Equivalency \(=\) BIOL
\& BIOL 1541L 1014 Lecture)
and Principles of Biology Laboratory (ACTS Equivalency \(=\) BIOL 1014 Lab)

\section*{U.S. History or Government}

Select one of the following:
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency \(=\) HIST 2123)
PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)
Fine Arts, Humanities and Social Sciences
Fine Arts * 3
Humanities * 3
Social Sciences * 9

Total Hours
* Must be selected from the university-approved list of lower level Humanities, Fine Arts and Social Science courses found in the main State Minimum Core (http://catalog.uark.edu/undergraduatecatalog/ gened/stateminimum/) list.

\section*{Minors in Other Colleges and Schools}

Students in the College of Engineering may pursue an academic minor in other colleges. For example, a minor in business is popular among engineering students. For requirements regarding minors, check the
catalog listing for the department offering the minor. Students must notify the College of Engineering dean's office of their intent to pursue a minor.

\section*{Requirements to Graduate with Honors}

Students who have demonstrated exceptional academic performance in baccalaureate degree programs will be recognized at graduation by the honors designation of cum laude, magna cum laude, or summa cum laude. To earn this designation, the student must meet the following criteria:
1. Must have completed at least one-half of his or her degree work at the University of Arkansas;
2. Must have at least a 3.50 GPA on University of Arkansas course work, computed at graduation (students with grade-point averages lower than 3.50 do not receive honors designation at graduation);
3. Must successfully complete the Engineering Honors Program, which includes a minimum of 12 hours of honors courses (at least 6 of these hours in engineering), an undergraduate research experience and thesis, and any additional departmental requirements;
4. Research and thesis material shall be evaluated by each department;
5. For cum laude, the student must achieve a GPA of 3.50 or higher and have good or better performance on the undergraduate research and thesis;
6. For magna cum laude, the student must achieve a GPA of 3.75 or higher and have good or better performance on the undergraduate research and thesis;
7. For summa cum laude, the student must achieve a GPA of 3.90 or higher and have outstanding performance on the undergraduate research and thesis.

The criteria may be evaluated and changed periodically by the College of Engineering.

\section*{Requirements to Graduate with Distinction}

Students who have not completed the Engineering Honors Program but have demonstrated excellent academic performance in baccalaureate degree programs will be recognized at graduation by the designation of "with distinction," "with high distinction," or "with highest distinction." To earn these designations, the student must meet the following criteria on his or her University of Arkansas course work:
1. Must have completed at least one-half of his or her degree work at the University of Arkansas;
2. For "with distinction," the student must achieve a GPA of 3.60 or higher;
3. For "with high distinction," the student must achieve a GPA of 3.75 or higher;
4. For "with highest distinction," the student must achieve a GPA of 3.90 or higher.

The criteria may be evaluated and changed periodically by the College of Engineering.

\section*{Graduate Studies}

The College of Engineering, in cooperation with the UA Graduate School, offers programs leading to the following graduate degrees:
- Master of Science in Biological Engineering (M.S.B.E.)
- Master of Science in Biomedical Engineering (M.S.Bm.E.)
- Master of Science in Chemical Engineering (M.S.Ch.E.)
- Master of Science in Civil Engineering (M.S.C.E.)
- Master of Science in Computer Engineering (M.S.Cmp.E.)
- Master of Science in Computer Science (M.S.)
- Master of Science in Electrical Engineering (M.S.E.E.)
- Master of Science in Engineering (M.S.E.)
- Master of Science in Environmental Engineering (M.S.En.E.)
- Master of Science in Industrial Engineering (M.S.I.E.)
- Master of Science in Mechanical Engineering (M.S.M.E.)
- Master of Science in Operations Management (M.S.O.M.)
- Doctor of Philosophy in Computer Science (Ph.D.)
- Doctor of Philosophy in Engineering (Ph.D.)

In addition, the College of Engineering supports the following interdisciplinary graduate programs:
- Master of Science in Cellular and Molecular Biology (M.S.)
- Master of Science in Microelectronics-Photonics (M.S.)
- Master of Science in Space and Planetary Sciences (M.S.)
- Doctor of Philosophy in Cellular and Molecular Biology (Ph.D.)
- Doctor of Philosophy in Microelectronics-Photonics (Ph.D.)
- Doctor of Philosophy in Space and Planetary Sciences (Ph.D.)

Further information concerning these programs may be found in the Graduate School Catalog or in the office of the dean of the Graduate School.

\section*{Accreditations}

As the only comprehensive engineering program in Arkansas, the College of Engineering offers undergraduate, graduate, and doctoral degrees through eight academic departments.

The College of Engineering offers the following programs accredited by the Engineering Accreditation Commission of ABET, www.abet.org (http:// www.abet.org).
- Bachelor of Science in Biological Engineering (B.S.B.E.)
- Bachelor of Science in Biomedical Engineering (B.S.Bm. E)
- Bachelor of Science in Chemical Engineering (B.S.Ch.E.)
- Bachelor of Science in Civil Engineering (B.S.C.E.)
- Bachelor of Science in Computer Engineering (B.S.Cmp.E.)
- Bachelor of Science in Electrical Engineering (B.S.E.E.)
- Bachelor of Science in Industrial Engineering (B.S.I.E.)
- Bachelor of Science in Mechanical Engineering (B.S.M.E.)

The College Engineering offers the following program accredited by the Computing Accreditation Commission of ABET, www.abet.org (http:// www.abet.org).
- Bachelor of Science in Computer Science (B.S.)

\section*{Office of the Dean of the College}

4183 Bell Engineering Center, 479-575-6012

\section*{Dean}

Kim Needy
Associate Dean
Kevin Hall

\section*{Associate Dean for Research}

Heather Nachtmann

\section*{Associate Dean for Student Success}

Bryan Hill
Assistant Dean for Finance
Larry Esch
Assistant Dean for Student Affairs
Thomas Carter, III

\section*{Academic Programs Office}

3189 Bell Engineering, 479-575-3052
Website: engineering.uark.edu (http://engineering.uark.edu)

\section*{Email: engrinfo@uark.edu}

\section*{Degrees Offered}

The College of Engineering offers programs leading to the following eight undergraduate degrees:
- Bachelor of Science in Biological Engineering (p. 834) (B.S.B.E.)
- Bachelor of Science in Biomedical Engineering (p. 839) (B.S.Bm.E.)
- Bachelor of Science in Chemical Engineering (p. 881) (B.S.Ch.E.)
- Bachelor of Science in Civil Engineering (p. 844) (B.S.C.E.)
- Bachelor of Science in Computer Engineering (p. 849) (B.S.Cmp.E.)
- Bachelor of Science in Computer Science (p. 849) (B.S.)
- Bachelor of Arts in Computer Science (p. 849) (B.A.)
- Bachelor of Science in Data Science (p. 95) (B.S.) (interdisciplinary program)
- Bachelor of Science in Electrical Engineering (p. 860) (B.S.E.E.)
- Bachelor of Science in Industrial Engineering (p. 867) (B.S.I.E.)
- Bachelor of Science in Mechanical Engineering (p. 874) (B.S.M.E.)

\section*{Minors}
- Data Analytics (p. 860)
- Engineering Management (p. 870)

\section*{Other Programs \\ Off-Campus Programs}

The College of Engineering at the University of Arkansas (UofA) is offering the Bachelor of Science degrees in Electrical Engineering and Mechanical Engineering at the University of Arkansas at Fort Smith (UAFS). Upper-division courses are taught in person or through distancelearning technology by UAF faculty, and lower-division courses are taught by UAFS faculty. The degree is awarded by University of Arkansas (UofA), but all classes are offered at the UAFS campus.

\section*{Cooperative Education}

Kelsey Lavigne
Career Development Center, College of Engineering, Bell 3158
(479) 575-6201, Fax: (479) 575-7744, klavigne@uark.edu

Cooperative education (co-op) is an academic program that allows students to gain practical work experience prior to graduation. Over the years thousands of engineering students have participated in the coop program at the University of Arkansas, gaining experience related to their major locally, within the state, across the nation, and internationally. Students work either full- or part-time in paid, degree-related jobs, and the skills they acquire allow them to step into their first full-time positions
ready to contribute in ways that other students cannot. The material below will give more information about the co-op program.

\section*{Forms of Cooperative Education: Alternating and Parallel}

In an alternating plan, students alternate between semesters of oncampus study and semesters off-campus at their co-op work site. Students can take a maximum of 3 credit hours of course work during the off-campus co-op periods. In a parallel co-op, students work part-time for a local company (less than 25 hours each week) and attend school at least half-time ( 6 credit hours). In either plan the student is considered a full-time student.

By participating in Cooperative Education, students have the chance to:
- Gain hands-on experience in a real world setting
- Confirm the choice of their major
- Make valuable industry contacts
- Enhance their communication skills
- Make money while also taking classes
- Lay the foundations for a future full-time job

\section*{Requirements and Conditions}
- GNEG 3801 (undergraduate students working part-time):
- Must have completed 30 hours towards engineering degree.
- Must have a minimum of 2.25 cumulative GPA.
- Must be enrolled at least half-time and must be working part-time at co-op.
- GNEG 3811 (undergraduate students working full-time):
- Must have completed 30 hours toward engineering degree.
- Must have a minimum of a 2.25 cumulative GPA.
- Must be working full-time and must not be enrolled in more than 3 credit hours.
- Must have at least 12 hours of coursework in their major remaining upon return to campus.
- GNEG 5801 (graduate students working part-time):
- Completed at least 6 hours towards engineering degree.
- Have a minimum of a 3.0 cumulative GPA.
- Must be enrolled at least half-time and must be working part-time at co-op.
- Must have approval of their thesis/dissertation advisor prior to interviewing for co-op positions.
- GNEG 5811 (graduate students working full-time):
- Completed at least 6 hours towards engineering degree.
- Have a minimum of a 3.0 cumulative GPA.
- Must be working full-time and must not be enrolled in more than 3 credit hours.
- Must have at least 3 hours of non-thesis, -dissertation, or research hours remaining upon return to campus.
- Must have approval of their thesis/dissertation advisor prior to interviewing for co-op positions.
- Students who are TA's, GA's, or RA's in the term of their work experience are not eligible for this course.
- Transfer Students
- Must have completed one semester of full-time study in the College of Engineering.
- Must meet all other co-op requirements.

\section*{- F-1 Students}
- Must have completed nine months of study in the United States.
- Must meet all other co-op requirements.

Full-time co-op assignments consist of the following scenarios:
- One semester away from campus (Spring, Summer, or Fall).
- One summer and one semester away from campus (Spring \& Summer OR Summer \& Fall).
- Alternating Semesters between Spring, Summer, and Fall.

Students who are away from campus for 2 semesters in one year, are eligible for only one semester away the following year with no more than three co-op semesters in a 24-month period. (Exceptions to this must be approved in advance by their departmental co-op representative.) Students who are going to be away from campus for the Fall and Spring semester in the same academic must receive prior approval from their departmental co-op representative.

\section*{Study Abroad Programs}

The College of Engineering actively encourages engineering students to obtain an international experience while pursuing an engineering degree. Students have several opportunities to join engineering facultyled programs in India, Belize and Spain as well as opportunities within the Southeastern Conference Academic Consortium (SECAC). For more information on study abroad opportunities, contact the Assistant Dean for International Programs, 479-575-7236.

\section*{Dual-Degree Transfer Programs}

The College of Engineering recognizes that a graduate engineer, to be of full service to community, must be educated in the social sciences and humanities as well as in technical subjects. The practice of industry to elevate engineers to managerial and administrative positions elevates the desirability of a broad educational background. Likewise, most universities within Arkansas do not offer a degree in engineering. Accordingly, the College of Engineering of the University of Arkansas has entered into a cooperative program with several Arkansas "partner" universities to provide for dual-degree programs that lead to a Bachelor of Science degree from the partner university and an engineering degree from the University of Arkansas. Typically, a student spends two to three years at the partner university and then completes an engineering curriculum in two to three years at the University of Arkansas. The student is awarded the Bachelor of Art/Bachelor of Science degree by the partner university and the Bachelor of Science in an engineering discipline by the University of Arkansas. More information is available at www.engr.uark.edu/transfer (http://www.engr.uark.edu/transfer.php)

\section*{Honors Program}

The College of Engineering has established an honors program to challenge superior students with a more in-depth academic program and research experience and to provide a structure for working more closely with faculty members and other students in a team environment. An honors program is highly recommended for individuals planning academic or research related careers that require considerable critical and original independent thinking. Admission requirements for the college's Honors Program are as follows: entering freshmen must have at least a 3.5 high school GPA and at least a 28 composite score on the ACT or SAT equivalent; entering transfer students must have at least a 3.5 GPA on their transfer work. Students not initially qualifying for the Engineering Honors Program are eligible if they earn a 3.500 cumulative GPA at the University of Arkansas.

Students must formally apply for admission to the Honors Program by completing the online application. The application is available at Honors College website (https://honors-application.uark.edu/). Once accepted into the program, Honors students take a minimum of 12 hours of Honors courses (a minimum of 6 of these 12 hours must be in engineering), participate in undergraduate research and write an undergraduate thesis, and must fulfill any additional departmental requirements. To receive Latin honors distinction at graduation, a student must hold a cumulative GPA of 3.500 or better (for all course work, computed at graduation).

Deadlines related to the Honors Program are as follows:
1. A Honors Advising Form is to be completed prior to a student earning 100 semester hours.
2. Honors College Graduation Certification is to be completed prior to one week before the last day of classes of the student's last semester.

\section*{First-Year Requirements and Eight-Semester Plan}

All freshman enrolling in the College of Engineering may participate in an Eight-Semester Degree Completion Program (p. 67).

All students who want to pursue an engineering degree or a Bachelor of Science in Computer Science should follow the plan below for the first two semesters, at the end of which they may finish an eight-semester plan in Computer Science (p. 849) (B.S.) or choose from among any of the engineering fields: Biological Engineering (p. 834), Biomedical Engineering (p. 839), Chemical Engineering (p. 881), Civil Engineering (p. 844), Computer Engineering (p. 849), Electrical Engineering
(p. 860), Industrial Engineering (p. 867), or Mechanical Engineering (p. 874).
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Specific State Minimum Core Requirements for Engineering Students
English (6 hours)
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) 3
ENGL 1033 Technical Composition II (ACTS Equivalency = 3 ENGL 1023)

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Mathematics (4 hours)
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) 4
Science (8 hours)
Engineering students are required to take additional science courses with matching labs beyond the minimum 8 hours required by the state minimum core.
CHEM 1103 University Chemistry I (ACTS Equivalency \(=\quad 3\) CHEM 1414 Lecture)
PHYS \(2054 \quad\) University Physics I (ACTS Equivalency = PHYS 4 2034)
U.S. History or Government (6 houurs)
\begin{tabular}{lll} 
HIST 2003 & \begin{tabular}{l} 
History of the American People to 1877 (ACTS \\
Equivalency \(=\) HIST 2113)
\end{tabular} & 3 \\
HIST 2013 & \begin{tabular}{l} 
History of the American People, 1877 to Present \\
(ACTS Equivalency \(=\) HIST 2123)
\end{tabular} & 3
\end{tabular}

Fine Arts 3
Humanities 3
Social Sciences 9

\section*{First-Year Semester Plan}
\begin{tabular}{lrr} 
First Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
GNEG 1111 Introduction to Engineering I & 1 & \\
MATH 2554 Calculus I (ACTS Equivalency = & 4 & \\
MATH 2405) & 3 & \\
CHEM 1103 University Chemistry I (ACTS & & \\
Equivalency = CHEM 1414 Lecture) & 3 & \\
\begin{tabular}{l} 
U.S. History/Government \\
ENGL 1013 Composition I (ACTS Equivalency =
\end{tabular} & 3 & \\
\begin{tabular}{l} 
ENGL 1013)
\end{tabular} & & 1 \\
GNEG 1121 Introduction to Engineering II & & 4 \\
MATH 2564 Calculus II (ACTS Equivalency = & & 4 \\
MATH 2505) & & 3 \\
\begin{tabular}{l} 
PHYS 2054 University Physics I (ACTS \\
Equivalency = PHYS 2034)
\end{tabular} \\
\begin{tabular}{l} 
ENGL 1033 Technical Composition II (ACTS \\
Equivalency = ENGL 1023)
\end{tabular} & & 4 \\
\begin{tabular}{l} 
Freshman Science Elective (See specific major for \\
requirements) \\
Year Total:
\end{tabular} & & 14
\end{tabular}

\section*{Total Units in Sequence:}

\section*{Biological and Agricultural Engineering (BAEG)}

\author{
Lalit Verma
}

Head of the Department
203 Engineering Hall
479-575-2351
Biological and Agricultural Engineering Website (https://bio-agengineering.uark.edu/)

Healthy Planet, Healthy People: this is the aspiration for the Biological Engineering program at the University of Arkansas. We improve people's lives today and help assure a prosperous world for tomorrow by designing sustainable water, food, and energy systems. Where challenges exist, we create solutions by optimizing the living systems of our world (the interactions of human, plant, animal, environment, food, and microbes) using the tools of engineering and biotechnology. Biological engineers contribute significantly to human health and prosperity by ensuring a safe and readily available water supply, a safe and nutritious food supply, and a healthy ecosystem upon which both water and food depend.

The faculty of the Biological Engineering program seeks to provide a challenging technical education in a safe, secure and inclusive learning environment that promotes a desire for service and prepares graduates to:
1. Successfully practice engineering involving the design and management of sustainable water, food, energy and related biological systems,
2. Make ethical, valuable and sustained contributions that benefit employers, communities, Arkansas and the world, and
3. Succeed in graduate education or continuing professional development, as needed for professional growth and licensure.

A Bachelor of Science degree in Biological Engineering is a job-ready degree with opportunities in a variety of industries, government agencies, and consulting firms. It is also excellent preparation for graduate studies (M.S. or Ph.D.) in engineering and related fields, as well as entry into other professional schools (e.g., medical, veterinary, dental, pharmacy, etc.).

The B.S. in Biological Engineering degree can lead immediately to careers in:
- Ecological engineering, such as water quality and watershed management, water resources and irrigation, low impact development in urban watersheds, stream and habitat restoration, and air quality remediation.
- Food and bio-product process engineering, such as food processing, forest products, biotechnology, biofuels, waste treatment and byproduct utilization.
- Sustainable resource engineering, such as sustainable agriculture to expand the food supply for a growing population; renewable and bio-energy development; life cycle analysis to assess, design and manage complex biological systems; efficient utilization of organic residues and by-products; conservation of Earth's finite resources.

Completion of degree requirements provides graduates with the following learning outcomes:
- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- An ability to communicate effectively with a range of audiences
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

\section*{Requirements for B.S. in Biological Engineering}

The undergraduate program in biological engineering, leading to a Bachelor of Science degree in Biological Engineering, is accredited by the Engineering Accreditation Commission of ABET, www.abet.org (https:// www.abet.org/). The B.S. in Biological Engineering degree is conferred by the College of Engineering and is granted after the successful completion of 128 hours of approved course work.

Diverse applications of biological engineering can be pursued through elective coursework. Each student is required to complete 12 semester hours of biological/engineering/technical electives that are relevant to their career goals. At least 3 hours must be selected from a list of acceptable biological electives. At least 3 hours must be engineering courses within

BENG or other engineering programs. The remaining hours can be selected from engineering, math, biology, agriculture, sustainability, and other science/technical areas. A list of suggested electives is maintained by the department. Students may petition their adviser to seek approval of other electives that are not on this list. Courses must provide engineering or technical content that is value-added (i.e. not duplicating or remedial) and meets the career goals of the student. Students who choose electives meeting the Environmental Concentration requirements, can earn the concentration, see the 8-Semester Plan for the B.S. in Biological Engineering with an Environmental Concentration.

Students are required to complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

\section*{Biological Engineering B.S.B.E. EightSemester Degree Program}

The Bachelor of Science in Biological Engineering program is eligible for students who want to participate in an Eight Semester Degree Program. See the Eight-Semester Degree Policy (p. 67) for more details. The plan below lists a semester-by-semester sequence of courses to finish the degree in eight semesters. State minimum core courses for engineering are listed at the bottom of this page. Students may submit a maximum of four (4) hours of "D" in BENG Courses for their degree.

Some courses are not offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course pre-requisites.


MATH 2564 Calculus II (ACTS Equivalency = 4 MATH 2505)
PHYS 2054 University Physics I (ACTS 4
Equivalency = PHYS 2034)
Year Total:
14
Second Year
BENG 2632 Biological Engineering Design Studio \begin{tabular}{r} 
Units \\
Spring
\end{tabular}
\begin{tabular}{lrr} 
Third Year & Fall \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
BENG 3653 Global Bio-Energy Engineering & 3 & \\
BENG 3733 Transport Phenomena in Biological & 3 & \\
Systems & & \\
BENG 3663 Biological Engineering Methods II & 3 \\
Choose one: & 4
\end{tabular}

CHEM 3603 Organic Chemistry I
\& CHEM 3601L Organic Chemistry I Laboratory
CHEM 2613 Organic Physiological Chemistry
(ACTS Equivalency = CHEM 1224 Lecture)
\& CHEM 2611L Organic Physiological
Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)
CVEG 3213 Hydraulics
or MEEG 3503 Mechanics of Fluids
or CHEG 2133 Fluid Mechanics
BENG 3723 Unit Operations in Biological

Engineering

BENG 3113 Measurement and Control for
Biological Systems tems
CVEG 3223 Hydrology
Biological Elective
Technical Elective
Year Total:
16
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{Fourth Year} & \multicolumn{2}{|r|}{Units} \\
\hline & Fall & Spring \\
\hline BENG 4812 Senior Biological Engineering Design I & 2 & \\
\hline BENG 4831 Biological Engineering Professionalism & 1 & \\
\hline BENG 4743 Food and Bio-Product Systems Engineering & 3 & \\
\hline BENG 4933 Sustainable Watershed Engineering & 3 & \\
\hline Humanities Elective - Choose one course from the list below (Satisfies General Education Outcomes 3.2 and 5.1\()^{2}\) & 3 & \\
\hline Social Science Elective-choose any course listed on the State Minimum Core. & 3 & \\
\hline BENG 4823 Senior Biological Engineering Design II (Satisfies General Education Outcome 6.1) & & 3 \\
\hline BENG 4663 Sustainable Biosystems Designs & & 3 \\
\hline Technical Elective (Engineering) & & 3 \\
\hline Fine Arts Elective - Choose one course from the list below (Satisfies General Education Outcome \(3.1)^{3}\) & & 3 \\
\hline Social Science Elective - choose any course listed on the State Minimum Core. & & 3 \\
\hline Technical Elective & & 3 \\
\hline Year Total: & 15 & 18 \\
\hline
\end{tabular}

\section*{Total Units in Sequence:}
\({ }^{1}\) This Social Science Elective should be selected from the following courses in order to meet State Minimum Core and the General Education Outcome 4.1: ANTH 1023, COMM 1023, GEOS 2003, GEOS 2003H, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, PLSC 2013, or RESM 2853.
\({ }^{2}\) The Humanities Elective should be selected from the following courses in order to meet State Minimum Core and the General Education Outcomes 3.2 and 5.1: CLST 1003, CLST 1013, PHIL 2003, PHIL 2003H, PHIL 2003C, PHIL 2103, or PHIL 2103C.
\({ }^{3}\) The Fine Arts Elective should be selected from the following courses in order to meet State Minimum Core and the General Education Outcome 3.1: ARHS 1003, COMM 1003, DANC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, or THTR 1013.

\section*{Requirements for B.S. in Biological Engineering with Environmental Concentration}

The undergraduate program in biological engineering, leading to a Bachelor of Science degree in Biological Engineering, is accredited by the Engineering Accreditation Commission of ABET, www.abet.org (https:// www.abet.org/). The B.S. in Biological Engineering degree is conferred by other science/technical areas. A list of suggested electives is maintained by the department. Students may petition their adviser to seek approval of other electives that are not on this list. Courses must provide engineering or technical content that is value-added (i.e. not duplicating or remedial) and meets the career goals of the student. Students who choose electives meeting the Environmental Concentration requirements, can earn the concentration, see the 8-Semester Plan for the B.S. in Biological Engineering with an Environmental Concentration.

Students are required to complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their academic adviser when making course selections.

\section*{Requirements for Environmental Concentration}

Complete 12 hours from the following courses:
\begin{tabular}{lll} 
CVEG 3243 & Environmental Engineering & 3 \\
CVEG 4243 & Environmental Engineering Design & 3 \\
\hline Biological Electives \({ }^{1}\) & 3 \\
\hline Technical Electives \({ }^{1}\) & 3 \\
\({ }^{1}\) A list of Environmental Concentration electives is maintained by the & \\
\begin{tabular}{l} 
department.
\end{tabular} &
\end{tabular}

\section*{Biological Engineering B.S. with Environmental Concentration \\ Eight-Semester Degree Program}

The Bachelor of Science in Biological Engineering program with Environmental Concentration is eligible for students who want to participate in an Eight Semester Degree Program. See the EightSemester Degree Policy for more details. The plan below lists a semester-by-semester sequence of courses to finish the degree in eight semesters. University core courses for engineering are listed at the bottom of this page. Students may submit a maximum of 4 hours of " \(D\) " in BENG Courses for their degree.

Some courses are not offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course pre-requisites.
\begin{tabular}{lrr} 
First Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
GNEG 1111 Introduction to Engineering I & 1 & \\
ENGL 1013 Composition I (ACTS Equivalency = & 3 & \\
ENGL 1013) & & 3 \\
\begin{tabular}{l} 
CHEM 1103 University Chemistry I (ACTS
\end{tabular} & \\
Equivalency = CHEM 1414 Lecture) & 4 \\
MATH 2554 Calculus I (ACTS Equivalency = &
\end{tabular}


Haggard, Brian Edward, Ph.D. (Oklahoma State University), M.S. (University of Arkansas), B.S. (Missouri University of Science and Technology), Professor, 2006, 2011.
Henry, Christopher Garrett, Ph.D. (University of Nebraska-Lincoln), M.S., B.S. (Kansas State University), Associate Professor, 2011, 2018.

Kim, Jin-Woo, Ph.D. (Texas A\&M University), M.S. (University of Wisconsin-La Crosse), B.S. (University of lowa), Professor, 2001, 2011. Li, Yanbin, Ph.D. (Pennsylvania State University), M.S. (University of Nebraska-Lincoln), B.S. (Shenyang Agricultural University), Distinguished Professor, Tyson Endowed Chair in Biosensing Engineering, 1989, 2003.
Liang, Yi, Ph.D. (University of Alberta, Canada), M.S., B.S. (China Agricultural University, Beijing, China), Associate Professor, 2007, 2014.
Matlock, Marty D., Ph.D., M.S., B.S. (Oklahoma State University), Professor, 2001, 2009.
McVey, Thomas Matthew, M.S. (Penn State University), B.S. (University of Arkansas), Instructor, 2022.
Osborn, G. Scott, Ph.D. (North Carolina State University), M.S., Ag.E., B.S. (University of Kentucky), Associate Professor, 2001, 2007.

Runkle, Benjamin R.K., Ph.D., M.S. (University of California-Berkeley), B.S. (Princeton University), Assistant Professor, 2014.

VanDevender, Karl, Ph.D. (University of Arkansas), M.S., B.S.
(Mississippi State University), Professor, 1995, 2004.
Verma, Lalit R., Ph.D. (University of Nebraska-Lincoln), M.S. (University of Montana), B. Tech. (J.N. Agricultural University, Jabalpub, India),

\section*{Professor, 2000.}

Wang, Dongyi, Ph.D. (University of Maryland), B.S. (Fundan University, Shanghai, China), Assistant Professor, 2021.
Zhu, Jun, Ph.D. (University of Illinois at Urbana-Champaign), M.S., B.S. (Zhejiang University, Hangzhou, China), Professor, 2013.

\section*{Courses}

BENG 2632. Biological Engineering Design Studio. 2 Hours.
Application of the engineering design process to projects involving living systems. Projects are team-based open-ended design with hands-on construction and testing of design prototypes. Emphasis is placed on understanding, quantifying and controlling complex interacting living systems involving humans, animals, plants and microbes with the goal of creating economically and ecologically sustainable systems. 4 hours of design studio per week. Pre- or Corequisite: PHYS 2054 and BIOL 1543 and BIOL 1541L, and (GNEG 1111 or GNEG 1103). (Typically offered: Fall)

\section*{BENG 2643. Biological Engineering Methods I. 3 Hours.}

Introduction to software techniques for the graphical and geo-spatial representation of processes, structures, devices, landscapes and watersheds in biological engineering. Process layout and process flow diagrams. Two-dimensional and three-dimensional scale drawings and models. Elements of engineering drawings and plans. Mapping and introduction to geographic information systems. Surface topography, digital elevation modeling, spatial land use, soils and other GIS data sources. Stream networks, watershed delineation, grade planning and introductory runoff modeling. Introductory land surveying. Geo-referencing and integrating designed hydrologic structures with GIS-based site maps. Communicating complex designed systems. Two hours of lecture plus one 3-hour lab per week. Corequisite: Lab component. Prerequisite: PHYS 2054. (Typically offered: Spring)
BENG 3113. Measurement and Control for Biological Systems. 3 Hours.
Principles of sensors, instruments, measurements, controls, and data acquisition systems, with emphasis on applications for biological systems; including basic circuit analysis, sensor calibration and hardware selection. Basic process monitoring and control methods, including hardware and software. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: PHYS 2074. (Typically offered: Spring)

BENG 3113H. Honors Measurement and Control for Biological Systems. 3 Hours.
Principles of sensors, instruments, measurements, controls, and data acquisition systems, with emphasis on applications for biological systems; including basic circuit analysis, sensor calibration and hardware selection. Basic process monitoring and control methods, including hardware and software. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: PHYS 2074 and honors candidacy. (Typically offered: Spring)
This course is equivalent to BENG 3113.
BENG 3653. Global Bio-Energy Engineering. 3 Hours.
Global energy sources with a focus on renewable energy, solar and biomass derived fuels. Biomass energy production from crops and organic residues or waste products. Conversion of biomass to usable fuels. Utilization of renewable energy in society. Includes detailed systems analyses to examine inputs, efficiencies, usable outputs and by-products. Systems design to select and integrate components which meet client needs while maximizing sustainable global impacts. Three hours of lecture per week. Pre- or Corequisite: MEEG 2403 or CHEG 2313. (Typically offered: Fall)

\section*{BENG 3663. Biological Engineering Methods II. 3 Hours.}

Modeling biological processes to predict system behavior as part of the design process. Development and use of spreadsheets and script programming code to represent biological phenomena and processes. Introduction to experimental design as applied to biological processes, including data collection and analysis, and elementary statistics. Use of engineering economics to aid comparisons of alternatives. Analysis of engineering designs and management practices to best meet the needs of society and the client in areas of sustainable water, food and energy systems. Lecture 2 hours and lab 3 hours per week. Corequisite: Lab component. Prerequisite: PHYS 2054 and MATH 2564. (Typically offered: Fall)

BENG 3723. Unit Operations in Biological Engineering. 3 Hours.
Design of basic unit operations typical of biological engineering practice; unit operations include pump-pipe, fan-duct, moist air (psychrometric) processes (cool/ heater/humidifier/dryer), air mixing, aeration, and refrigeration; unit operations design will account for unique constraints imposed by biological systems. Lecture 2 hours and lab 3 hours per week. Corequisite: Lab component. Prerequisite: (MEEG 2403 or CHEG 2313) and (CVEG 3213 or CHEG 2133 or MEEG 3503). (Typically offered: Spring)
BENG 3733. Transport Phenomena in Biological Systems. 3 Hours.
Basic principles governing transport of energy and mass. Estimating transfer of energy (heat) through solid bodies and liquid/gas boundary layers through conduction, convection, and radiation. Modeling the rates at which biological reactions occur (kinetics). Estimating the transfer of diffusing mass (gas or liquid) through solid bodies and liquid/gas boundary layers, including processes such as drying and oxygen diffusion. Three hours lecture per week. Pre- or Corequisite: (CVEG 3213 or MEEG 3503 or CHEG 2133) and MATH 2584. Prerequisite: (MEEG 2403 or CHEG 2313). (Typically offered: Fall)

\section*{BENG 4123. Biosensors \& Bioinstrumentation. 3 Hours.}

Principles of biologically based sensing elements and interfacing techniques. Design and analysis methods of biosensing and transducing components in bioinstrumentation. Applications of biosensors and bioinstrumentation in bioprocessing, bioenvironmental, biomechanical and biomedical engineering. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2013 or BIOL 2533 and BENG 3113. (Typically offered: Spring Odd Years)

BENG 450V. Special Problems. 1-4 Hour.
Selected problems in biological engineering are pursued in detail. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 4 hours of degree credit.

\section*{BENG 451VH. Honors Thesis. 1-6 Hour.}

Honors thesis. Prerequisite: Honors candidacy. (Typically offered: Fall, Spring and Summer)

BENG 452V. Special Topics in Biological Engineering. 1-6 Hour.
Special topics in biological engineering not covered in other courses. Prerequisite: Engineering student. (Typically offered: Irregular) May be repeated for up to 8 hours of degree credit.

\section*{BENG 4663. Sustainable Biosystems Designs. 3 Hours.}

Process and methodologies associated with measuring, assessing, and designing sustainable systems in water, energy and food. Quantitatively rigorous methodology for life cycle analysis (LCA) for inventory, assessment and impact analyses. Use of other systems analyses and process control theory to evaluate and design sustainable systems. Application of the methods to a project to gain experience in defining, quantifying and utilizing sustainable metrics. Three hours of lecture per week. Prerequisite: BENG 3653. (Typically offered: Spring)

BENG 4743. Food and Bio-Product Systems Engineering. 3 Hours.
Sustainable bio-product engineering through biosystem design, analysis, modeling, control, and optimization. Life cycle phases for bio-products (food, fiber, feed, and fuel). System analysis of inputs and outputs of energy, water and mass for the purpose of producing and processing biomass for human uses. Advanced bioprocess design topics to utilize enzymes, cells, tissues and organisms to create bio-products and methods for deactivating biological agents to preserve the quality and safety of food and other bio-products. Three hours lecture per week. Pre- or corequisite: BENG 3733. Prerequisite: BENG 3723. (Typically offered: Fall)

BENG 4812. Senior Biological Engineering Design I. 2 Hours.
Initiation of comprehensive two-semester team-design projects to design processes, devices and systems to meet needs of clients in sustainable water, food and energy. Practice in following the design process, including the definition of design objectives and constraints, establishing functions and performance criteria, generating alternatives and evaluating alternatives through analysis, modeling and prototype testing; exploring relevant design considerations including performance, efficiency, costs, environmental impacts, sustainability and stewardship, safety and ethics. Developing analytic capability; and practicing design optimization to find best alternative for the client. Lecture 1 hour, laboratory 3 hours per week. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Fall)
BENG 4823. Senior Biological Engineering Design II. 3 Hours.
Completion of comprehensive two-semester team-design projects to design processes, devices and systems to meet needs of clients in sustainable water, food and energy. Focus on building of prototypes or models, system optimization, evaluation and improvement. Final design details packaged to meet the needs of the client. Interaction with appropriate persons from other disciplines. Written and oral reporting. Communications with peers, supervisor, clients and the public. Lecture 1 hour per week, two 2-hour lab periods per week. Prerequisite: BENG 4812. Corequisite: Lab component. (Typically offered: Spring)

BENG 4831. Biological Engineering Professionalism. 1 Hour.
Preparation to be job-ready, employable and successful in transition to a professional career and further study in Biological Engineering. Introduction to job and graduate study searches. Professional and ethical responsibilities; professional registration. Conflict, change and project management. Effective communications and interactions with supervisors, peers, clients, and stakeholders. Two hour discussion section per week. Prerequisite: Senior standing. (Typically offered: Fall)

BENG 4933. Sustainable Watershed Engineering. 3 Hours.
Provides students with expertise in using advanced tools in watershed monitoring, assessment, and design. Builds on core competencies in hydrology and hydraulics to allow student to evaluate water used by sector in water management regions; evaluate and quantify water demands by sector with emphasis on irrigation; develop risk-based simulations of hydrologic processes, including precipitation, evapotransportation, infiltration, runoff, and stream flow; quantify and simulate constituent loading to watersheds using GIS-based models, and understand the applications of these methods in water resource management policy. Three hours lecture per week. Prerequisite: CVEG 3223. (Typically offered: Fall)

BENG 4963. Modeling Environmental Biophysics. 3 Hours.
Interactions between the biosphere and the atmosphere. Connecting the physical environment of solar energy, wind, soil, and hydrology to the biosphere through plant ecophysiology. Boundary layer meteorology, photosynthesis and boundary layer modeling strategies, and the soil-plant-atmosphere continuum. Instrumentation, measurement and modeling strategies for understanding leaf-, landscape- and regional behaviors; and, the transfer, kinetics, and balance of momentum, energy, water vapor, CO 2 , and other atmospheric trace gases between the landscape (vegetation and soil) and the atmosphere. Applications in sustainable agriculture, irrigation, land and water resources, and modeling plant water use and carbon uptake strategies. Three hours of lecture per week. Prerequisite: MATH 2564 and (BENG 4933 or CVEG 3223). (Typically offered: Spring Even Years)
BENG 4973. Practice in Water Quality Monitoring and Analysis. 3 Hours. Application of water quality principles to a real world problem. Team project experience developing quality assurance project plans, designing monitoring systems, selecting chemical analysis methods, estimating loads, performing trend analysis, basic model calibration and validation, and technical report writing and oral presentations. Working with various clientele to analyze water quality data in the context of evaluating real-world problems and issues. Technical course intended for students in engineering, environmental sciences, agriculture and biology. Three hours of lecture per week. Prerequisite: CVEG 3213 or instructor's consent to allow interdisciplinary student teams. (Typically offered: Spring Odd Years)

\section*{Biomedical Engineering (BMEG)}

Raj Rao
Department Head
120 John A. White Jr. Engineering Hall
479-575-8610

\section*{Biomedical Engineering Website (http://biomedical-engineering.uark.edu/)}

Biomedical engineering encompasses the creation, design, and operation, of processes / technology related to the broad field of human healthcare. The profession traditionally has focused on applications related to the development of instrumentation and diagnostic equipment, discovery of novel treatment options, production of new therapeutics, and the elucidation of underlying biophysical phenomena. Newer applications of bioengineering take advantage of the ever deepening understanding of human physiology and molecular genetics, as related to prevention, detection, and treatment of medical conditions. The program objectives of the Biomedical Engineering undergraduate program are to produce graduates who are capable of:
- Succeeding in practice at the interface between life science and engineering, in other professional activities, or in post-baccalaureate studies, and
- Utilizing their engineering education/experience in creating new knowledge or enabling technologies for improvement of human health and healthcare, and
- Conducting themselves with high standards of professional ethics and integrity, and
- Being aware of the limits of their knowledge and initiate self-directed learning to create future professional opportunities for themselves in biomedical engineering.

Completion of the degree requirements provides for the following educational outcomes and ability to:
- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- Communicate effectively with a range of audiences
- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusion
- Acquire and apply new knowledge as needed, using appropriate learning strategies.

These educational outcomes are experienced within the context of biology and physiology appropriate to solving problems at the interface of engineering and biology.

\section*{Requirements for B.S. in Biomedical Engineering}

Technical Options in Biomedical Engineering
Each student in biomedical engineering is required to complete nine semester hours of biomedical engineering technical electives. Biomedical engineering technical elective courses must be selected from a facultyapproved list of courses found in the department's Undergraduate Advising Handbook, which is available on the department's website (http:// biomedical-engineering.uark.edu/). Elective courses are chosen with the aid of an academic adviser to better prepare for employment or further study in areas such as:
- Bioengineering
- Pharmaceutical manufacturing or pharmacology
- Biomedical device design
- Medicine
- Business
- Law

\section*{Technical Elective Course}

Each student in biomedical engineering is required to complete three semester hours of upper level science electives. Upper level (3000 and above) science electives will be chosen from courses in mathematics, engineering, and the sciences with the approval of their adviser. The department maintains a list of approved upper level science electives that may be found in the department's Undergraduate Advising Handbook, which is available on the department's website (http://biomedicalengineering.uark.edu/).

\section*{Biomedical Engineering B.S.Bm.E. Eight-Semester Degree Program}

The following section contains the list of courses required for the Bachelor of Science in Biomedical Engineering degree and a suggested sequence for students who enter the College through the Freshman Engineering Program. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eightsemester degree plan should see the Eight-Semester Degree Policy
(p. 67) in the Academic Regulations chapter for university requirements of the program.
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{First Year} & \multicolumn{2}{|l|}{} \\
\hline & Fall & Spring \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) & 3 & \\
\hline MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\) & 4 & \\
\hline CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & 3 & \\
\hline GNEG 1111 Introduction to Engineering I Select one of the following to satisfy General Education Outcome 4.2: & 1 & \\
\hline HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) or HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency \(=\) HIST 2123) or PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) & 3 & \\
\hline ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) & & 3 \\
\hline Freshman Science Elective with lab \({ }^{2}\) & & 4 \\
\hline MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) & & 4 \\
\hline PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) & & 4 \\
\hline GNEG 1121 Introduction to Engineering II & & 1 \\
\hline Year Total: & 14 & 16 \\
\hline \multirow[t]{2}{*}{Second Year} & & Units \\
\hline & Fall & Spring \\
\hline Sophomore Science Elective with lab \({ }^{3}\) & 4 & \\
\hline BMEG 2614 Introduction to Biomedical Engineering & 4 & \\
\hline MATH 3083 Linear Algebra & 3 & \\
\hline \multicolumn{3}{|l|}{Satisfies General Education Outcome 3.4:} \\
\hline BIOL 1543 Principles of Biology (ACTS & 4 & \\
\hline \multicolumn{3}{|l|}{\& BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)} \\
\hline BMEG 2813 Biomechanical Engineering & & 3 \\
\hline BMEG 2904 Biomedical Instrumentation (with Lab) & & 4 \\
\hline MATH 2584 Elementary Differential Equations & & 4 \\
\hline
\end{tabular}

\section*{BIOL 2533 Cell Biology}

Fine Arts State Minimum Core Elective (Satisfies
General Education Outcome 3.1) \({ }^{4}\)
Year Total:
Third Year
BMEG 3634 Biomaterials (with lab)
BMEG 3124 Biomedical Signals and Systems (
lab)
CHEG 2313 Thermodynamics of Single-
Component Systems
or MEEG 2403 Thermodynamics
CHEM 3603 Organic Chemistry I
\& CHEM 3601 L Organic Chemistry I Laboratory
Social Sciences State Minimum Core Elective
(Satisfies General Education Outcomes 3.3 and \(4.1)^{5}\)
BMEG 3653 Biomedical Modeling and Numerical

\section*{Methods}

BMEG 3824 Biomolecular Engineering (with lab)
BMEG 3801 Clinical Observations and Needs Finding
CHEG 2133 Fluid Mechanics
or MEEG 3503 Mechanics of Fluids
BIOL 2213 Human Physiology (ACTS Equivalency = BIOL 2414 Lecture)
\& BIOL 2211L Human Physiology Laboratory
(ACTS Equivalency = BIOL 2414 Lab)
STAT 2823 Biostatistics
Year Total: 18
\begin{tabular}{lrr} 
Fourth Year & Fall \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
BMEG 4813 Biomedical Engineering Design I & 3 & \\
BMEG 4623 Biomedical Transport Phenomena & 3 & \\
BMEG Elective & 3 & \\
Science Elective & 3 \\
Social Sciences State Minimum Core Elective & 3
\end{tabular}
(Satisfies General Education Outcome 3.3) \({ }^{6}\)
BMEG 4823 Biomedical Engineering Design II
(Satisfies General Education Outcome 6.1)
BMEG Elective

\section*{BMEG Elective}

Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3) \({ }^{6}\)
Humanities State Minimum Core Elective (Satisfies
General Education Outcomes 3.2 and 5.1) \({ }^{7}\)
Year Total:
15

\section*{Total Units in Sequence:}
\({ }^{1}\) Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.

Units
Fall Spring
\begin{tabular}{llr} 
BMEG 4103L & & 3 \\
BMEG 4213 & Tissue Mechanics & 3 \\
BMEG 4243 & Advanced Biomaterials and Biocompatibility & 3 \\
BMEG 4403 & Biomedical Microscopy & 3 \\
BMEG 4413 & Tissue Engineering & 3 \\
BMEG 450VH & Honors Thesis & \(1-4\) \\
BMEG 460V & Individual Study & \(1-3\) \\
BMEG 460VH & Honors Individual Study & \(1-3\) \\
BMEG 4873 & & 3 \\
BMEG 4973 & Regenerative Medicine & 3 \\
BMEG 470V & Special Topics in Biomedical Engineering & \(1-4\)
\end{tabular}
\begin{tabular}{llr} 
BMEG 4103L & & 3 \\
BMEG 4213 & Tissue Mechanics & 3 \\
BMEG 4243 & Advanced Biomaterials and Biocompatibility & 3 \\
BMEG 4403 & Biomedical Microscopy & 3 \\
BMEG 4413 & Tissue Engineering & 3 \\
BMEG 450VH & Honors Thesis & \(1-4\) \\
BMEG 460V & Individual Study & \(1-3\) \\
BMEG 460VH & Honors Individual Study & \(1-3\) \\
BMEG 4873 & & 3 \\
BMEG 4973 & Regenerative Medicine & 3 \\
BMEG 470V & Special Topics in Biomedical Engineering & \(1-4\)
\end{tabular}
\begin{tabular}{llr} 
BMEG 4103L & & 3 \\
BMEG 4213 & Tissue Mechanics & 3 \\
BMEG 4243 & Advanced Biomaterials and Biocompatibility & 3 \\
BMEG 4403 & Biomedical Microscopy & 3 \\
BMEG 4413 & Tissue Engineering & 3 \\
BMEG 450VH & Honors Thesis & \(1-4\) \\
BMEG 460V & Individual Study & \(1-3\) \\
BMEG 460VH & Honors Individual Study & \(1-3\) \\
BMEG 4873 & & 3 \\
BMEG 4973 & Regenerative Medicine & 3 \\
BMEG 470V & Special Topics in Biomedical Engineering & \(1-4\)
\end{tabular}
\begin{tabular}{llr} 
BMEG 4103L & & 3 \\
BMEG 4213 & Tissue Mechanics & 3 \\
BMEG 4243 & Advanced Biomaterials and Biocompatibility & 3 \\
BMEG 4403 & Biomedical Microscopy & 3 \\
BMEG 4413 & Tissue Engineering & 3 \\
BMEG 450VH & Honors Thesis & \(1-4\) \\
BMEG 460V & Individual Study & \(1-3\) \\
BMEG 460VH & Honors Individual Study & \(1-3\) \\
BMEG 4873 & & 3 \\
BMEG 4973 & Regenerative Medicine & 3 \\
BMEG 470V & Special Topics in Biomedical Engineering & \(1-4\)
\end{tabular}
\begin{tabular}{llr} 
BMEG 4103L & & 3 \\
BMEG 4213 & Tissue Mechanics & 3 \\
BMEG 4243 & Advanced Biomaterials and Biocompatibility & 3 \\
BMEG 4403 & Biomedical Microscopy & 3 \\
BMEG 4413 & Tissue Engineering & 3 \\
BMEG 450VH & Honors Thesis & \(1-4\) \\
BMEG 460V & Individual Study & \(1-3\) \\
BMEG 460VH & Honors Individual Study & \(1-3\) \\
BMEG 4873 & & 3 \\
BMEG 4973 & Regenerative Medicine & 3 \\
BMEG 470V & Special Topics in Biomedical Engineering & \(1-4\)
\end{tabular}

\section*{Honors Program Requirements}

Students enrolled in the Honors College who are to receive the Bachelor of Science in Biomedical Engineering must complete a minimum of 12 hours of honors credit. At least 6 hours must be completed within the Biomedical Engineering program including at least 3 hours resulting in an Honors Thesis. The BMEG honors courses are acceptable as engineering electives and in some cases may be substituted for required courses.
2 The Freshman Science Elective must be chosen from either CHEM 1123/CHEM 1121L or PHYS 2074.
3 The Sophomore Science Elective must be either PHYS 2074 or CHEM 1123/CHEM 1121L. (Whichever was not chosen as the Freshman Engineering Science Elective).
4 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
5 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1123, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
6 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123,HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033. Note, courses cannot be counted twice in degree requirements.
7 The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.

\section*{Biomedical Engineering Technical Electives}

Abbas, James, Ph.D., M.S. (Case Western Reserve University), Sc.B. (Brown University), Professor, 2021.
Balachandran, Kartik, Ph.D., M.S. (Georgia Institute of Technology), B.S. (National University of Singapore), Associate Professor, 2012, 2018.

Elsaadany, Mostafa, Ph.D. (University of Toledo), Teaching Assistant Professor, 2019.
Harris, Leonard, Ph.D. (Cornell University), B.S. (University of Colorado, Boulder), Assistant Professor, 2020.
Jensen, Hanna Katariina, Ph.D. (University of Oulu, Finland), Research Assistant Professor, 2015.

Jensen, Morten O., Ph.D. (University of Aarhus, Denmark), M.Sc. (Georgia Institute of Technology), Associate Professor, 2014.
Muldoon, Timothy J., M.D. (Baylor College of Medicine), Ph.D. (Rice University), B.S. (Johns Hopkins University), Associate Professor, 2012, 2018.

Nelson, Christopher, Ph.D. (Vanderbilt University), Assistant Professor, 2019.

Puvanakrishnan, Priyaveena, Ph.D. (University of Texas at Austin), Instructor, 2015.
Qian, Xianghong, Ph.D., M.Phil. (George Washington University), B.S. (Nanjing University, P.R. China), Professor, 2011, 2016.
Quinn, Kyle P., Ph.D. (University of Pennsylvania), B.S. (University of Wisconsin), Assistant Professor, 2014.
Rajaram, Narasimhan, Ph.D. (University of Texas, Austin), B.E. (Anna University, India), Assistant Professor, 2014.
Rao, Raj R., Ph.D. (University of Georgia), M.S. (University of Texas), M.Sc., B.E. (Birla Institute of Technology and Sciences, India), Professor, 2016.

Samsonraj, Rebekah M., Ph.D. (Cornell University), B.S. (University of Colorado, Boulder), Assistant Professor, 2020.
Song, Young Hye, Ph.D. (Cornell University), Assistant Professor, 2019.
Wolchok, Jeffrey Collins, Ph.D. (University of Utah), M.S., B.S.
(University of California at Davis), Associate Professor, 2011, 2017.

\section*{Courses}

BMEG 2614. Introduction to Biomedical Engineering. 4 Hours.
An introductory course for undergraduate biomedical engineering students. It covers topics such as recombinant DNA technologies, cell and tissue engineering, stem cell and organ regeneration, the biomechanics, bioinstrumentation, engineering of immunity, and bio- and medical imaging, etc. The application of nano-biotechnology in developing clinical products such as tissue engineered products, drug delivery systems, etc. will be emphasized in the course. Prerequisite: (GNEG 1321H, or GNEG 1121, or GNEG 1103), and CHEM 1103, with a grade of \(C\) or better, MATH 2554 and PHYS 2054. (Typically offered: Fall and Summer)

\section*{BMEG 2813. Biomechanical Engineering. 3 Hours.}

This course introduces basic concepts and principles of biomechanics to biomedical and other engineering students. The course topics include mechanics and materials, viscoelastic properties, bone, cartilage, ligament, tendon, muscle, cardiovascular dynamics, clinical gait analysis, etc. After taking this course, students are expected to understand the application of engineering kinetics to describe motions of human body and mechanic properties of tissues. MATLAB will be used to write and solve biomechanical static and dynamic equations. Lecture 3 hours per week. Prerequisite: BMEG 2614, CHEM 1123, MATH 2564, and PHYS 2074. (Typically offered: Spring)

BMEG 2904. Biomedical Instrumentation. 4 Hours.
This course is designed for biomedical engineering undergraduate students to learn both theoretical and practical concepts of bioinstrumentation and their applications in modern life science and medicine. Analytical experiments will be practiced in the laboratory along with the lecture section. This course covers basic topics in circuits such as charge current, voltage, resistance, power energy, linear network analysis, inductors, capacitors, operational amplifier, time-varying signals, active analog filters, bioinstrumentation design etc. The application of these principles and theories in bioinstrumentation design and development is particularly emphasized in this course. The lab section requires team work, planning, and data sharing. Corequisite: Lab component. Prerequisite: BMEG 2614, MATH 2564 and PHYS 2074. (Typically offered: Spring)

BMEG 3124. Biomedical Signals and Systems. 4 Hours.
This course will introduce students to the basics of signals - continuous and digital signals, and signal processing tools, such as filters, Laplace and Fourier transforms. The 'systems' aspect of the course will focus on physiological systems and methods to model such systems. The course will also focus on the biomedical applications of these methods through lab components. Prerequisite: BMEG 2904. (Typically offered: Fall)

\section*{BMEG 3634. Biomaterials. 4 Hours.}

Introduction to the engineering properties of materials used in biomedical devices and applications. Topics include: atomic properties, structure-property-processing relationships, bulk engineering properties, surface and interfacial properties and applications of materials in biology and medicine. All topics will be reviewed in the context of specific biomedical devices and the engineering principles involved in their design. Corequisite: Lab component. Prerequisite: BMEG 2813, CHEM 1123, and BIOL 1543 and BIOL 1541L. (Typically offered: Fall)

\section*{BMEG 3653. Biomedical Modeling and Numerical Methods. 3 Hours.}

Application of mathematical techniques to physiological systems. The emphasis will be on cellular physiology and cardiovascular system. Cellular physiology topics include models of cellular metabolism, membrane dynamics, membrane potential, excitability, wave propagation and cellular function regulation. Cardiovascular system topics include models of blood cells, oxygen transport, cardiac output, cardiac regulation, and circulation. Pre- or Corequisite: MATH 2584. Prerequisite: BMEG 2614, and (MATH 2574 or MATH 3083). (Typically offered: Spring)
BMEG 3653H. Honors Biomedical Modeling and Numerical Methods. 3 Hours. Application of mathematical techniques to physiological systems. The emphasis will be on cellular physiology and cardiovascular system. Cellular physiology topics include models of cellular metabolism, membrane dynamics, membrane potential, excitability, wave propagation and cellular function regulation. Cardiovascular system topics include models of blood cells, oxygen transport, cardiac output, cardiac regulation, and circulation. Pre- or Corequisite: MATH 2584. Prerequisite: BMEG 2614, and (MATH 2574 or MATH 3083). (Typically offered: Spring) This course is equivalent to BMEG 3653.
BMEG 3801. Clinical Observations and Needs Finding. 1 Hour.
This course involves the introduction of clinical procedures and biomedical devices and technology to biomedical engineering students. Students will tour medical facilities, clinics and hospitals and will participate in medical seminars, workshops and medical rounds. The course prepares students to successfully select and complete a project in the senior capstone course. Prerequisite: The prerequisites for BMEG students are BMEG 2813 or BMEG 2904; prerequisites for DASC students: BMEG 2614 and DASC 2594. (Typically offered: Fall and Spring)

\section*{BMEG 3824. Biomolecular Engineering. 4 Hours.}

Biomolecular Engineering is to design and produce biomolecules, especially proteins, for uses ranging from pharmaceuticals, materials, sensors, transducers, to functional interfaces with conventional engineering materials. The course begins with an introduction to the tools and techniques of molecular biology that are used for protein engineering. Additional topics include recombinant DNA techniques, biochemical kinetics, cell growth reaction and kinetics, bioreactors, membrane processes, and bioproduct purification. There is an associated laboratory with exercises related to lecture topics. Corequisite: Lab component. Prerequisite: BMEG 3634, CHEM 1123, and BIOL 2533. (Typically offered: Spring)

\section*{BMEG 3824H. Honors Biomolecular Engineering. 4 Hours.}

Biomolecular Engineering is to design and produce biomolecules, especially proteins, for uses ranging from pharmaceuticals, materials, sensors, transducers, to functional interfaces with conventional engineering materials. The course begins with an introduction to the tools and techniques of molecular biology that are used for protein engineering. Additional topics include recombinant DNA techniques, biochemical kinetics, cell growth reaction and kinetics, bioreactors, membrane processes, and bioproduct purification. There is an associated laboratory with exercises related to lecture topics. Corequisite: Lab component. Prerequisite: BMEG 3634, CHEM 1123, and BIOL 2533. (Typically offered: Spring) This course is equivalent to BMEG 3824.

\section*{BMEG 3913. Biofluid Mechanics. 3 Hours.}

Introduction to fundamental concepts and applications of fluid dynamics from a biological and physiological perspective. Topics include physical properties of fluids, fluid statics, manometers, streamlines and the Bernoulli relation, velocity and acceleration fields, viscous flow and the Navier-Stokes equations, flows in pipes and over submerged surfaces, properties of blood and other physiological fluids, transport models in the lungs, lymph, blood, and artificial organs, and computational fluid dynamics (CFD) simulations. Prerequisite: MATH 2584, PHYS 2074, and BMEG 2614. (Typically offered: Fall)

\section*{BMEG 4213. Tissue Mechanics. 3 Hours.}

The purpose of this course is to introduce students to non-linear biomechanics of soft tissues such as skin, bladder, blood vessels, and the brain. Topics covered: Tissue mechanics: continuum biomechanics, tensor analysis, kinematics of continua, balance laws. Governing physics of mechanics as applied to soft tissues. Various constitutive relations will be discussed: linear elastic, hyperelastic, viscoelastic, poroelastic, and inelastic materials with internal variables. Cannot receive credit for both BMEG 4213 and BMEG 5213. Prerequisite: BMEG 2813, BMEG major and Senior standing. (Typically offered: Irregular)

BMEG 4243. Advanced Biomaterials and Biocompatibility. 3 Hours.
From Absorbable sutures to Zirconium alloy hip implants, biomaterials science influences nearly every aspect of medicine. This course focuses on the study of different classes of biomaterials and their interactions with human tissues. Topics include: biocompatibility; biofouling; hemocompatibility; wound healing response; foreign body response; design of orthopedic, dental and cardiovascular implants; opthalmological and dermatological materials; degradable polymers for drug delivery; nanobiomaterials; smart biomaterials and the regulation of devices and materials by the FDA. Pre- or Corequisite: BMEG 4623. Prerequisite: BMEG 3634. (Typically offered: Irregular)

BMEG 4253. Biologics: Next Generation Therapeutics and Their Purification. 3 Hours.
The course focuses on the production and purification of biologics including monoclonal antibodies, viral vectors, nucleic acids and other biotherapeutics. In particular, the course will focus on the fundamental thermodynamics principles as well as kinetic limitations involved in upstream harvesting and downstream purification. Applications of PCR, mass spectroscopy, electrophoresis, imaging and modeling tools during the production and purification of biologics will be discussed. (Typically offered: Irregular)

\section*{BMEG 4403. Biomedical Microscopy. 3 Hours.}

An advanced course covering light microscopy techniques, conjugate image planes, principles of contrast, fluorescence imaging, confocal and multi-photon microscopy, electron microscopy, atomic force microscopy, image reconstruction and digital image processing with supporting units in tissue culture and histology. Prerequisite: The prerequisites for BMEG students are BMEG 2904, PHYS 2074, BMEG major and Senior standing; prerequisites for DASC students: BMEG 2614, PHYS 2054 and DASC 2113. (Typically offered: Irregular)

\section*{BMEG 4413. Tissue Engineering. 3 Hours.}

This course introduces Tissue Engineering approaches at genetic and molecular, cellular, tissue, and organ levels. Topics include cell and tissue in vitro expansion, tissue organization, signaling molecules, stem cell and stem cell differentiation, organ regeneration, biomaterial and matrix for tissue engineering, bioreactor design for cell and tissue culture, dynamic and transportation in cell and tissue cultures, clinical implementation of tissue engineered products, and tissue-engineered devices. Prerequisite: BMEG 3824 and BIOL 2533. (Typically offered: Irregular)

\section*{BMEG 450VH. Honors Thesis. 1-4 Hour.}

Provides Biomedical Engineering students an opportunity to explore a topic in depth through an independent research or design project. Prerequisite: Honors standing. (Typically offered: Spring and Summer) May be repeated for degree credit.

\section*{BMEG 4513. Biomedical Optics and Imaging. 3 Hours.}

This course will provide students with a fundamental understanding of various biomedical imaging modalities. Topics will include: Basics of light-tissue interaction - absorption, fluorescence, elastic and inelastic scattering; Computational and analytical models of light propagation to quantify tissue optical properties; Optical imaging techniques spectroscopy, tomography, and laser speckle with potential clinical applications; and Clinical imaging modalities and recent advances Xray, Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET), Computed Tomography (CT), Ultrasound imaging, and Photoacoustic imaging. At the end of this course, students should have a good understanding of optical imaging, spectroscopy, and non-optical imaging modalities, specific anatomical sites that they are best suited for, and the trade-offs between imaging depth and resolution. Students may not receive credit for both BMEG 4513 and BMEG 5513. Prerequisite: The prerequisites for BMEG students are BMEG 2904 and senior standing; prerequisites for DASC students: BMEG 2614, PHYS 2054 and DASC 2113 and senior standing. (Typically offered: Irregular)

BMEG 4523. Biomedical Data and Image Analysis. 3 Hours.
This course focuses on an introduction to image processing and analysis for applications in biomedical research. After a review of basic MATLAB usage, students will learn fundamental tools for processing and analyzing data from a variety of subdisciplines within biomedical engineering. Topics include: filtering, thresholding, segmentation, morphological processing, and image registration. Through exercises involving 1D, 2D, and 3D data, students will develop problemsolving skills and a knowledge base in MATLAB required for customized quantitative data analysis. Students may not receive credit for both BMEG 4523 and BMEG 5523. Prerequisite: The prerequisites for BMEG students are BMEG 3124 and BMEG 3653; prerequisites for DASC students: BMEG 2614, PHYS 2054 and DASC 3203. (Typically offered: Irregular)

BMEG 4593. Biomedical Innovations for Global Impact. 3 Hours.
This course focuses on specific problems triggered or exacerbated by selected global health care challenges. Acknowledging the interdependence of our world, where the well-being of one individual is intrinsically connected to the well-being of the entire ecosystem, the course connects participating students with a global and local network of students, faculty, community partners, and mentors, and invite them to develop solutions to some of these health care challenges. Pre- or corequisite: Junior Level Standing. (Typically offered: Fall)
This course is cross-listed with SEVI 4333.
BMEG 460V. Individual Study. 1-6 Hour.
Individual study and research of a topic mutually agreeable to the student and faculty member. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

BMEG 460VH. Honors Individual Study. 1-6 Hour.
Individual study and research of a topic mutually agreeable to the student and faculty member. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to BMEG 460V.

\section*{BMEG 4623. Biomedical Transport Phenomena. 3 Hours.}

An introduction to the modeling of complex biological systems using principles of transport phenomena and biochemical kinetics. This course will cover molecular transport due to velocity, concentration and thermal gradients. Topics include the conservation relations; rheology of Newtonian and non-Newtonian physiological fluids; regulation of blood flow; steady and transient diffusion in reacting systems; dimensional analysis; transport processes in disease pathology. Prerequisite: BMEG 3653, CHEG 2133 or MEEG 3503, CHEG 2313 or MEEG 2403, and MATH 2584. (Typically offered: Fall)

\section*{BMEG 4623H. Honors Biomedical Transport Phenomena. 3 Hours.}

An introduction to the modeling of complex biological systems using principles of transport phenomena and biochemical kinetics. This course will cover molecular transport due to velocity, concentration and thermal gradients. Topics include the conservation relations; rheology of Newtonian and non-Newtonian physiological fluids; regulation of blood flow; steady and transient diffusion in reacting systems; dimensional analysis; transport processes in disease pathology. Prerequisite: BMEG 3653, CHEG 2133 or MEEG 3503, CHEG 2313 or MEEG 2403, and MATH 2584. (Typically offered: Fall)
This course is equivalent to BMEG 4623.
BMEG 470V. Special Topics in Biomedical Engineering. 1-4 Hour.
Consideration of current biomedical engineering topics not covered in other courses. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{BMEG 4713. Cardiovascular Physiology and Devices. 3 Hours.}

Understanding etymology of disease while creating solutions and dedicated devices is the primary focus of biomedical engineering. This course describes an interdisciplinary approach of the clinical and engineering worlds to develop devices for treating cardiovascular disease. The first part of the course will be a thorough review of the relevant anatomic and physiological considerations important for developing devices. Understanding these considerations from an engineering perspective to inform device development will be the second part of the course. Students may not receive credit for both BMEG 4713 and BMEG 5713. Prerequisite: CHEG 2133 or MEEG 3503, and BIOL 2213. (Typically offered: Irregular)

\section*{BMEG 4813. Biomedical Engineering Design I. 3 Hours.}

This is part one of a two-semester course that introduces students to the basic concepts of design from a biomedical engineering perspective. Groups are organized into teams of 4-5 members. The students put together a development plan and complete an initial prototype. Students will design what is to be fabricated and tested as a medical device or software following design process and product design specification guidelines. Corequisite: Lab component. Pre- or Corequisite: BMEG 4623 and BMEG 2904. (Typically offered: Fall)

\section*{BMEG 4823. Biomedical Engineering Design II. 3 Hours.}

This is part two of a two-semester course that introduces students to the basic concepts of design from a biomedical engineering perspective. Groups are organized into teams of 4-5 members. The students put together a development plan and complete an initial prototype. Students will design what is to be fabricated and tested as a medical device or software following design process and product design specification guidelines. Corequisite: Lab component. Prerequisite: BMEG 4813. (Typically offered: Spring)

BMEG 4903. Entrepreneurial Bioengineering. 3 Hours.
The course introduces entrepreneurship, business model canvas, and lean startup principles to the students with a focus on medical device customer discovery and technology commercialization. Degree credit will not be awarded for both BMEG 4903 and BMEG 5903. Prerequisite: The prerequisite for BMEG students is BMEG 2904; prerequisites for DASC students: BMEG 2614 and DASC 2594. (Typically offered: Irregular)

\section*{BMEG 4973. Regenerative Medicine. 3 Hours.}

This is an advanced course focusing on tissue engineering and regenerative medicine. Topics include stem cell tissue engineering, cell signaling, transport and kinetics, biomaterials and scaffolds, surface interactions, viral and nonviral-based gene delivery, tissue engineered organs, organ transplantation, nanomedicine, cell replacement therapy, and organ regenerative therapy. Technologies used to grow clinical relevant cells and tissues in lab will also be discussed in this course. Pre- or Corequisite: Senior standing. (Typically offered: Irregular)
BMEG 4983. Genome Engineering and Synthetic Biology. 3 Hours. Genome Engineering and Synthetic Biology examines contemporary topics in genome engineering and synthetic biology and will be taught using a "journal club" style lecture format. This course covers a broad range of topics in synthetic biology and genome engineering using recently published literature and publicly available data and software and includes an ethics discussion at course end. Prerequisite: BMEG 3653 or DASC 3213. (Typically offered: Fall and Spring)

\section*{Civil Engineering (CVEG)}

Micah Hale
Head of the Department
4190 Bell Engineering Center
479-575-4954
Department of Civil Engineering Website (https://civilengineering.uark.edu/)

Civil engineering is the oldest of all engineering fields, yet it is as contemporary as the need to provide solutions to today's environmental, geotechnical, structural and transportation problems. The civil engineer plans, designs, builds, and operates projects for the advancement and well-being of society while coordinating and conserving human and natural resources. Civil engineering projects range from small to monumental and include public water systems, buildings, bridges, rail and highway networks, water and wastewater treatment plants, solid and hazardous waste disposal facilities, airports, and soil conservation and flood diversion controls.

The civil engineering profession offers a vast array of opportunities. Civil engineers may work in private employment or with public agencies. They may work indoors in activities such as planning and design, or outdoors in areas such as construction supervision. Employment is possible anywhere in the world.

The objective of the Civil Engineering undergraduate program is to produce graduates who are prepared to pursue:
- Careers in the broad field of civil engineering
- Licensure as a professional engineer
- Advanced education

To fulfill this objective, all students must take courses in geotechnical, environmental, transportation, and structural engineering. Courses are designed to present "real world" applications without sacrificing conceptual and theoretical basics. Students complete design problems in each of these areas; and, as part of the senior year, they participate in two major design projects.

Completion of degree requirements provides graduates with the following learning outcomes:
- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- An ability to communicate effectively with a range of audiences
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

\section*{Requirements for B.S. in Civil Engineering Elective Courses}

Students must select three 3-hour civil engineering elective courses in conference with their adviser. Normally, the civil engineering courses are selected from among the 4000-level elective CVEG courses. Exceptional students may be allowed to choose from the 5000 (graduate-level) course series.

Students must also choose one elective course in science, engineering, technology, or math (STEM) field.

Humanities and social science electives are selected from courses approved by the university which satisfy the University General Education Curriculum and the Arkansas State Minimum Core requirements.

Students are required to complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.

\section*{Civil Engineering Design Electives}

Students must complete two of the following four CVEG design project electives: CVEG 4812 Environmental Design Project, CVEG 4822 Geotechnical Design Project, CVEG 4832 Structural Design Project, and CVEG 4842 Transportation Design Project. Each design project elective is associated with a specific design-oriented course. The associated course must be taken at the same time as the design project elective. The associated courses may be taken alone but the design electives cannot.

\section*{STEM Electives}

Students must also choose one elective course in science, engineering, technology, or math (STEM) from among the following:
\begin{tabular}{lll} 
CSCE 2004 & Programming Foundations I & 4 \\
ELEG 3903 & Electric Circuits and Machines & 3 \\
GNEG 3113 & Special Topics-Study Abroad & 3 \\
GNEG 3811 & Alternating Cooperative Education (must get 3 & 1 \\
MEEG 2013 & Deparate rotations) & 3 \\
MEEG 2403 & Thermodynamics & 3 \\
MEEG 2703 & Computer Methods in Mechanical Engineering & 3 \\
GEOS 3023 & Introduction to Cartography & 3
\end{tabular}
\begin{tabular}{lll} 
GEOS 3543 & Geospatial Applications and Information Science & 3 \\
GEOS 4533 & Introduction to Petroleum Geophysics & 3 \\
MATH 3083 & Linear Algebra & 3 \\
MATH 4363 & Numerical Analysis & 3 \\
Any 3000-level or above science, technology, engineering or math & 3
\end{tabular}
course. (It is recommended that students consult with their adviser when making this selection.)

\section*{Civil Engineering B.S.C.E. Eight-Semester Degree Program}

The Civil Engineering B.S.C.E. program is eligible for freshman students who want to participate in an Eight-Semester Degree Program. See the Eight-Semester Degree Policy (p. 67) for details of the program.

The following section contains the list of courses required for the Bachelor of Science in Civil Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites.

See the list of state minimum core (p. 81) courses available for engineering students.
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{First Year} & \multicolumn{2}{|l|}{} \\
\hline & Fall & Spring \\
\hline MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\) & 4 & \\
\hline GNEG 1111 Introduction to Engineering I & 1 & \\
\hline Satisfies General Education Outcome 3.4: & & \\
\hline \begin{tabular}{l}
GEOS 1113 Physical Geology (ACTS Equivalency \\
= GEOL 1114 Lecture) \\
\& GEOS 1111L Physical Geology Laboratory \\
(ACTS Equivalency = GEOL 1114 Lab)
\end{tabular} & 4 & \\
\hline CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & 3 & \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) & 3 & \\
\hline MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) & & 4 \\
\hline GNEG 1121 Introduction to Engineering II & & 1 \\
\hline ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) & & 3 \\
\hline Select one of the following to satisfy General Education Outcome 4.2: & & 3 \\
\hline PLSC 2003 American National Government (ACTS Equivalency \(=\) PLSC 2003) & & \\
\hline HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) & & \\
\hline HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) & & \\
\hline Satisfies General Education Outcome 3.4: & & \\
\hline PHYS 2054 University Physics I (ACTS & & 4 \\
\hline Equivalency = PHYS 2034) & & \\
\hline Year Total: & 15 & 15 \\
\hline
\end{tabular}
\begin{tabular}{lr} 
Second Year & Fall \\
MATH 2574 Calculus III (ACTS Equivalency = & 4 \\
MATH 2603) & \\
CVEG 2013 Civil Engineering Mechanics I & 3 \\
CVEG 2002 Introduction to Civil Engineering Plans & 2 \\
and CADD & \\
CVEG 2053 Surveying Systems & 4 \\
\& CVEG 2051L Surveying Systems Laboratory & \\
Fine Arts Elective (Select a course to satisfy & 3 \\
General Education Outcome 3.1)
\end{tabular}
\begin{tabular}{lrr} 
Third Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
INEG 2413 Engineering Economic Analysis & 3 & \\
CVEG 3303 Structural Analysis & 3 & \\
CVEG 3213 Hydraulics & 3 & 3 \\
STEM Elective & 3 & \\
CVEG 3413 Transportation Systems Engineering & 1 &
\end{tabular}

\section*{Issues}

CVEG 4303 Reinforced Concrete Design I
CVEG 3243 Environmental Engineering
CVEG 3132 Soil Mechanics
\& CVEG 3131L Soil Mechanics Laboratory
CVEG 3223 Hydrology
Social Sciences Elective (select one course to satisfy General Education Outcomes 3.3 and 4.1\()^{3}\)
Year Total:
Fourth Year \(\quad\) Fall

Civil Engineering Elective \({ }^{4}\)
Civil Engineering Design Elective (Satisfies
General Education Outcome 6.1)
CVEG 4143 Foundation Engineering
CVEG 4423 Transportation Infrastructure 3
CVEG 4890 Fundamentals of Engineering Seminar
Humanities Elective (select one course to satisfy
General Education Outcomes 3.2 and 5.1) \({ }^{5}\)
Social Sciences Elective (select one course to
satisfy General Education Outcome 3.3) \({ }^{6}\)
CVEG 4513 Construction Management
Civil Engineering Design Elective (Satisfies
General Education Outcome 6.1)
CVEG 4243 Environmental Engineering Design Civil Engineering Electives \({ }^{4}\)

Social Sciences Elective (select one course to satisfy General Education Outcome 3.3) \({ }^{6}\) Year Total: 17 17

\section*{Total Units in Sequence:}
\({ }^{1}\) Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
\({ }^{3}\) The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1123, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
\({ }^{4}\) See the elective list among the program requirements.
5 The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
\({ }^{6}\) The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, SOCI 2033. Note, courses cannot be counted twice in degree requirements.
\({ }^{7}\) Chose one from the list below:
PHYS 2074, GEOS 3514, BIOL 1543 and BIOL 1541L, BIOL 2013 and BIOL 2011L, or
CHEM 1123 and CHEM 1121L.

\section*{Honors Program Requirements}

Students enrolled in the Honors College who are to receive the Bachelor of Science in Civil Engineering must complete a minimum of 12 hours of honors credit. At least 6 hours must be completed within the Civil Engineering program including at least 3 hours resulting in an Honors Thesis. The CVEG honors courses are acceptable as engineering electives and in some cases may be substituted for required courses. The following Civil Engineering courses are offered for honors credit: CVEG 491VH Honors Studies in Geotechnical Engineering, CVEG 492VH , CVEG 493VH Honors Studies in Structural Engineering, CVEG 494VH Honors Studies in Transportation Engineering, and CVEG 4983H Honors Undergraduate Thesis.

\section*{Faculty}

Barry, Michelle, Ph.D., M.S.C.E., B.S.C.E. (Texas A\&M University), Associate Professor, 2019.
Becknell, Natalie K., M.S.C.E., B.S.C.E. (University of Arkansas), Instructor, 2012.
Bernhardt-Barry, Michelle, Ph.D., M.S.C.E., B.S.C.E. (Texas A\&M University), Associate Professor, 2013, 2019.
3 Braham, Andrew F., Ph.D. (University of Illinois-Urbana-Champaign), M.S., B.S. (University of Wisconsin-Madison), Professor, 2010, 2022.

Clark, Suzanne G., J.D. (University of Arkansas), B.S. (University of Connecticut), Instructor, 2023.
Coffman, Rick, Ph.D. (University of Missouri-Columbia), M.S. (University of Texas at Austin), B.S. (University of Wyoming), Professor, 2009, 2021. Fairey, Julian, Ph.D., M.S.C.E. (University of Texas at Austin), B.S.C.E. (University of Alberta, Canada), Associate Professor, 2008, 2014. Fernstrom, Eric, Ph.D. (University of Arkansas), Teaching Assistant Professor, 2014, 2021.
Guo, Lei, Ph.D. (University of California, Berkeley), B.S. (Lanzhou University, China), Assistant Professor, 2022.
Guo, Lei, Ph.D. (University of California, Berkeley), B.S. (Lanzhou University, China), Assistant Professor, 2022.
Hale, Micah, Ph.D., M.S.C.E., B.S.C.E. (University of Oklahoma), Professor, 21st Century Leadership Chair in Civil Engineering, 2002, 2013.

Hall, Kevin D., Ph.D. (University of Illinois-Urbana-Champaign), M.S.C.E., B.S.C.E. (University of Arkansas), University Professor, 1993, 2020.

Hernandez, Sarah, Ph.D., M.S. (University of California, Irvine), B.S. (University of Florida), Associate Professor, Walter E. Hicks and Blossom Russel Hicks Professorship for Infrastructure Engineering, 2015, 2021.
Heymsfield, Ernie, Ph.D. (City University of New York), M.S.C.E. (Polytechnic University), Associate Professor, 2001, 2007.
Jones, Phillip, M.B.A., B.S. (University of Arkansas), Instructor, 2013, 2022.

Lee, Seungtaek, Ph.D. (Arizona State University), M.S. (Chung-Ang University), Instructor, 2021.
Lloyd, Larry, M.B.A., B.S.C.E. (University of Arkansas), Instructor, 2020.
Mitra, Suman, Ph.D. (University of California, Irvine), M.S., B.S.
(Bangladesh University of Engineering and Technology), Assistant Professor, 2019.
Morrow, Tommy K., Ph.D. (University of Texas at Austin), M.S. (North Carolina State University), B.S. (University of Arkansas), Instructor, 2019.
Murray, Cameron, Ph.D. (University of Oklahoma), M.S.C.E, B.S.C.E.
(University of Arkansas), Assistant Professor, 2017.
Power, Daniel, B.S.M.E., (University of Arkansas), Instructor, 2022.
Prinz, Gary S., Ph.D, M.S., B.S. (Brigham Young University), Associate
Professor, James T. Womble Professor of Computational Mechanics and Nanotechnology Modeling, 2014, 2019.
Sasidharan, Lekshmi, Ph.D. (Pennsylvania State University), M.S.
(National Institute of Technology), B.S. (University of Kerala), Teaching Assistant Professor, 2022.
Selvam, R. Panneer, Ph.D. (Texas Tech University), M.S.C.E. (South Dakota School of Mines and Technology), M.E., B.E. (University of Madras, India), University Professor, 1986, 2010.
Tayeh, Ralph, Ph.D., M.S. (University of Florida), B.S. (Lebanese American University, Byblos, Lebanon), Instructor, 2021.
Thompson, Graham W., M.S., (New Mexico State University), B.S. (University of Arkansas), Instructor, 2021.
Thompson, Rick, Ph.D., M.S., (Catholic University of America), M.B.A. (Cornell University), M.Arch. (New School of Architecture and Design), B.S. (Arizona State University), Instructor, 2021.

Welcher, Richard, M.S.C.E., B.S.C.E. (University of Arkansas), Instructor, 2011.
Williams, Rodney D., Ph.D., M.S., B.S.C.E. (University of Arkansas), Instructor, 1998.
Williams, Stacy Goad, Ph.D., M.S.C.E., B.S.C.E. (University of Arkansas), Associate Professor, 1997.
Wood, Clinton M., Ph.D. (University of Texas at Austin), M.S.C.E., B.S.C.E. (University of Arkansas), Associate Professor, 2013, 2019.

Zhang, Wen, Ph.D. (Purdue University), M.S. (University of Kansas), B.S. (Tongji University, China), Associate Professor, 2011, 2018.

\section*{Adjunct Faculty}

Circo, Carl J., J.D., B.A. (University of Nebraska), Professor, School of Law, 2003, 2010.

\section*{Courses}

CVEG 2002. Introduction to Civil Engineering Plans and CADD. 2 Hours.
Development and preparation of design and construction plans; plan terminology and features; introduction to computer-aided drafting and design (CADD) software. Corequisite: Drill component. Prerequisite: Civil Engineering major or departmental consent. (Typically offered: Fall, Spring and Summer)
CVEG 2013. Civil Engineering Mechanics I. 3 Hours.
CVEG 2013 provides the student with a foundation in the theory and principles of statics for use in subsequent civil engineering courses. The course applies mathematics and physics to solve practical problems of structural systems. Corequisite: MATH 2574. Prerequisite: MATH 2564 and PHYS 2054. (Typically offered: Fall and Spring)

\section*{CVEG 2023. Civil Engineering Mechanics II. 3 Hours.}

CVEG 2023 provides the student with a foundation in the theory and principles of mechanics of materials for use in subsequent civil engineering courses. This course applies mathematics and physics to solve problems in mechanics. Prerequisite: CVEG 2013 or MEEG 2003. (Typically offered: Fall and Spring)
CVEG 2051L. Surveying Systems Laboratory. 1 Hour.
Laboratory exercises demonstrating the principles and practices of surveying systems. Corequisite: CVEG 2053. (Typically offered: Fall)

\section*{CVEG 2053. Surveying Systems. 3 Hours.}

Coordinate geometry, measurements, and total integrated surveying systems; total stations, electronic data collection, and reduction; error analysis; applications to civil engineering and surveying practice. Corequisite: CVEG 2051L. Prerequisite: MATH 2554 or MATH 2445. (Typically offered: Fall)
CVEG 2113. Structural Materials. 3 Hours.
Production, properties, behavior, and structural applications of concrete, steel, timber, masonry, and plastic. Statistical analysis methods for quality control are also covered. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MEEG 2003 or CVEG 2013. Pre- or Corequisite: MEEG 3013 or CVEG 2023. (Typically offered: Fall and Spring)

CVEG 2851. Engineering Professional Practice Issues. 1 Hour.
Study of various issues related to the professional practice of engineering including ethics, professionalism, professional licensure, project procurement, social and political issues, globalism, and other legal issues. (Typically offered: Fall and Spring)
CVEG 3131L. Soil Mechanics Laboratory. 1 Hour.
Index, strength, and consolidation properties of soils; test methods and specifications for soil sampling and testing. Corequisite: CVEG 3132. (Typically offered: Fall and Spring)
CVEG 3132. Soil Mechanics. 2 Hours.
Introduction to geotechnical engineering. Properties of soils related to foundations, retaining walls, earth structures, and highways. Lecture 2 hours, laboratory 3 hours per week. Corequisite: CVEG 3131L. Pre- or Corequisite: CVEG 3213 and MATH 2584. Prerequisite: (MEEG 3013 or CVEG 2023) and GEOS 1113 and CVEG 2002. (Typically offered: Fall and Spring)
CVEG 3213. Hydraulics. 3 Hours.
Study of incompressible fluids. Topics include fluid properties, fluid statics, continuity, energy and hydraulic gradients, fundamentals of flow in pipes and open channels, flow measurement devices, pump selection and analysis. Corequisite: Lab component. Prerequisite: CVEG 2013 or MEEG 2003. (Typically offered: Fall and Spring)

\section*{CVEG 3223. Hydrology. 3 Hours.}

Flood routing procedures in storage reservoirs and channels. Hydrologic planning including storage reservoir design, frequency duration analysis, and related techniques. Prerequisite: (CVEG 2053 or BENG 2643), (CVEG 3213 or MEEG 3503 or CHEG 2133). (Typically offered: Fall and Spring)

\section*{CVEG 3243. Environmental Engineering. 3 Hours.}

Introduction to theories and fundamentals of physical, chemical, and biological processes with emphasis on water supply and wastewater collection, transportation, and treatment. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 2584 and CHEM 1103. (Typically offered: Fall and Spring)
CVEG 3303. Structural Analysis. 3 Hours.
Truss analysis, influence lines for beams and frames, and effects of moving loads. Deformation of beams, frames, and trusses. Analysis of indeterminate structures by moment area, slope deflection, and moment distribution methods; approximate methods of analysis. Lecture 3 hours, drill 3 hours per week. Corequisite: Drill component. Prerequisite: MEEG 3013 or CVEG 2023. (Typically offered: Fall and Spring)

\section*{CVEG 3413. Transportation Systems Engineering. 3 Hours.}

Transportation Systems Engineering: Introduction to transportation systems engineering and planning. Includes the following topics: transportation governance, financing, and the effect on the environment; traffic flow theory; safety; traffic operations and control; capacity; and travel demand modeling. Prerequisite: CVEG 2053 and (INEG 2314 or INEG 3313). (Typically offered: Fall)

CVEG 4143. Foundation Engineering. 3 Hours.
Analysis and design of retaining walls, footings, sheet piles, and piles. Determination of foundation settlements in sand and clay. Prerequisite: CVEG 3132 and INEG 2413. (Typically offered: Fall and Spring)
CVEG 4203. Environmental Regulations and Permits. 3 Hours.
Topics include federal and state environmental regulations, the permitting process, permit requirements and related issues. Prerequisite: CVEG 3243 and senior standing. (Typically offered: Fall)

CVEG 4243. Environmental Engineering Design. 3 Hours.
Application of physical, biological, and chemical operations and processes to the design of water supply and wastewater treatment systems. Prerequisite: CVEG 3243 and INEG 2413. (Typically offered: Spring)
CVEG 4263. Air Pollution Control. 3 Hours.
Fundamentals of air pollution causes, effects, and measurements; as well as, control methods with application to current industrial problems. Prerequisite: CVEG 3213 or MEEG 3503. (Typically offered: Spring)
CVEG 4273. Open Channel Flow. 3 Hours.
Open Channel Flow includes advanced open channel hydraulics, flow measurement techniques, a hydrology review, culvert and storm drainage design, natural channel classification (fluvial geomorphology) and rehabilitation, computer methods and environmental issues. Prerequisite: CVEG 3213 and CVEG 3223. (Typically offered: Spring)

\section*{CVEG 4303. Reinforced Concrete Design I. 3 Hours.}

Design of reinforced concrete elements with emphasis on ultimate strength design supplemented by working stress design for deflection and crack analysis. Prerequisite: CVEG 2113 and CVEG 3303. (Typically offered: Fall and Spring)

\section*{CVEG 4313. Structural Steel Design I. 3 Hours.}

Design of structural steel elements by elastic design the Load and Resistance Factor Design method. Intensive treatment of tension members, beams, columns, and connections. Pre- or Corequisite: CVEG 2113. Prerequisite: CVEG 3303. (Typically offered: Fall and Spring)

CVEG 4323. Structural Loadings. 3 Hours.
Theoretical background to and practical code requirements for various structural loadings. These include dead loads, occupancy loads, roof loads and ponding, snow loads, granular loads, vehicular loads, wind loading, and seismic loads. Prerequisite: CVEG 3303, INEG 2413 and (CVEG 4303 or CVEG 4313). (Typically offered: Spring)

CVEG 4343. Reinforced Masonry Design. 3 Hours.
Properties of masonry materials and assemblages. Masonry workmanship and quality control. Design of reinforced masonry elements against gravity and lateral loads. Design of masonry connections and joints. Application to 1- and 2-story buildings. Prerequisite: CVEG 4303. (Typically offered: Irregular)

\section*{CVEG 4353. Timber Design. 3 Hours.}

Selection of timber beams, columns, and beam-columns. Physical properties of wood, analysis and design of timber connections. Truss design, glulam members, timber bridge design, treatment for decay, and fire protection. Pre- or Corequisite: CVEG 2113. Prerequisite: CVEG 3303. (Typically offered: Irregular)
CVEG 4413. Pavement Evaluation and Rehabilitation. 3 Hours.
Introduction of concepts and procedures for pavement condition surveys; evaluation by nondestructive and destructive testing; maintenance strategies; rehabilitation of pavement systems for highway and airfields; pavement management systems. Prerequisite: CVEG 4433. (Typically offered: Irregular)
CVEG 4423. Transportation Infrastructure. 3 Hours.
Transportation infrastructure includes discussion on the geometric design of roadways, roadway drainage, roadway materials, roadway structural design, and an economic analysis of roadways. This includes the design of horizontal and vertical alignment, cross section, intersections, pavement materials, and structural capacity. Prerequisite: CVEG 3413 and INEG 2413. (Typically offered: Fall and Spring)

\section*{CVEG 4433. Transportation Pavements and Materials. 3 Hours.}

Study of the engineering properties and behavior of materials commonly used in transportation facilities as they relate to the design and performance of flexible and rigid pavement systems. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CVEG 3132, CVEG 3413, and (INEG 2314 or INEG 3313). (Typically offered: Irregular)

\section*{CVEG 4513. Construction Management. 3 Hours.}

Introduction to methods and procedures for management of civil engineering construction projects including organization, plans and specs, cost estimating and bidding, project planning and finance, quality control/ assurance, construction safety, cost management, labor issues, change orders, and subcontractor issues. Prerequisite: Senior standing and Civil Engineering majors only. (Typically offered: Fall and Spring)

\section*{CVEG 4812. Environmental Design Project. 2 Hours.}

Comprehensive engineering design project primarily related to environmental issues. Corequisite: CVEG 4243. (Typically offered: Spring)

\section*{CVEG 4822. Geotechnical Design Project. 2 Hours.}

Comprehensive engineering design project primarily related to geotechnical issues. Corequisite: CVEG 4143. Prerequisite: CVEG 4303. (Typically offered: Fall)

\section*{CVEG 4832. Structural Design Project. 2 Hours.}

Comprehensive engineering design project primarily related to structural issues. Corequisite: CVEG 4323. Prerequisite: CVEG 4303 and CVEG 4313. (Typically offered: Spring)

CVEG 4842. Transportation Design Project. 2 Hours.
Comprehensive engineering design project primarily related to transportation issues. Corequisite: CVEG 4423. Prerequisite: CVEG 2002. (Typically offered: Fall)

\section*{CVEG 4863. Sustainability in Civil Engineering. 3 Hours.}

Qualify and quantify the economic, environmental, societal, and engineering drivers behind sustainability in Civil Engineering. Justification of the feasibility and benefits of sustainability in environmental, geotechnical, structural, and transportation engineering through verbal and written communications. Prerequisite: Senior standing. (Typically offered: Irregular)

CVEG 488V. Special Problems. 1-6 Hour.
Special problems. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

CVEG 4890. Fundamentals of Engineering Seminar. 0 Hours.
Preparation for students taking the Fundamentals of Engineering (FE) examination, administered by the National Council of Examiners for Engineering and Surveying (NCEES). Concept review and problem-solving drills for topics covered on the FE-Civil examination. Prerequisite: Civil Engineering major and senior standing. (Typically offered: Fall and Spring)

CVEG 491VH. Honors Studies in Geotechnical Engineering. 1-6 Hour.
The study of advanced topics in the geotechnical engineering field. May include participation in geotechnical engineering courses normally available only to graduate students. Prerequisite: CVEG 3132 with a grade of C or better. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
CVEG 493VH. Honors Studies in Structural Engineering. 1-6 Hour.
The study of advanced topics in the structural engineering field. May include participation in structural engineering courses normally available only to graduate students. Prerequisite: CVEG 3303 with a grade of C or better. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

CVEG 494VH. Honors Studies in Transportation Engineering. 1-6 Hour.
The study of advanced topics in the transportation engineering field. May include participation in transportation engineering courses normally available only to graduate students. Prerequisite: CVEG 3413 with a grade of \(C\) or better. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
CVEG 4983H. Honors Undergraduate Thesis. 3 Hours.
Thesis research for civil engineering students enrolled in the honors college. Prerequisite: Honors College. (Typically offered: Irregular)

\section*{Computer Science and Computer Engineering (CSCE)}

\section*{Jia Di}

Head of the Department
504 J.B. Hunt Center for Academic Excellence
479-575-5728
Department of Computer Science and Computer Engineering Website (https://computer-science-and-computer-engineering.uark.edu/)

The faculty of the Computer Science and Computer Engineering Department is engaged in multidisciplinary academic research, course offerings, and student projects in areas such as: networking, data security, low power chip design, Web search, embedded systems, and graphics.

The educational objectives of the department are to produce graduates who are recruited in a competitive market and make valuable contributions to a wide variety of industries, particularly in computer and information technology; succeed in graduate or professional studies; pursue life-long learning and continued professional development; and undertake leadership roles in their profession, in their communities, and in the global society.

\section*{Accreditations}

The B.S. in Computer Engineering is accredited by the Engineering Accreditation Commission of ABET, www. abet.org (https:// www.abet.org/). The B.S. in Computer Science is accredited by the Computing Accreditation Commission of ABET, www.abet.org (https:// www.abet.org/).

\section*{Requirements for B.S. in Computer Engineering}

The computer engineering degree has required sequences of courses in both hardware and software aspects of computer applications and design. Since almost all of today's complex systems encompass hardware and software elements, computer engineering graduates must acquire the skills required to design, build, and test complex digital systems. At the advanced level, students are exposed to hands-on experience with openended problems with opportunities for research and design.

The Bachelor of Science in Computer Engineering program culminates in a capstone project completed in two consecutive semesters. In the first semester, students form teams and develop a project proposal. In the second semester, students develop, implement, and present the final project.

\section*{Computer Engineering B.S.Cmp.E. EightSemester Degree Program}

The following sections contain the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) with a suggested sequence below.

Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.
\begin{tabular}{|c|c|c|}
\hline First Year & & Units \\
\hline & Fall & Spring \\
\hline GNEG 1111 Introduction to Engineering I & 1 & \\
\hline MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\) & 4 & \\
\hline CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & 3 & \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) & 3 & \\
\hline \begin{tabular}{l}
U.S. History Elective (Satisfies General Education Outcomes 3.2 and 4.2) Choose from one of the following courses: \\
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) \\
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)
\end{tabular} & 3 & \\
\hline GNEG 1121 Introduction to Engineering II & & 1 \\
\hline MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) & & 4 \\
\hline \begin{tabular}{l}
PHYS 2054 University Physics I (ACTS \\
Equivalency = PHYS 2034) (Satisfies General \\
Education Outcome 3.4)
\end{tabular} & & 4 \\
\hline
\end{tabular}

Freshman Science Elective (Satisfies General
Education Outcome 3.4) Choose one of the following science and corresponding lab options:

BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture)
BIOL 1541L Principles of Biology Laboratory
(ACTS Equivalency = BIOL 1014 Lab)
CHEM 1123 University Chemistry II (ACTS
Equivalency = CHEM 1424 Lecture)
CHEM 1121L University Chemistry II Laboratory
(ACTS Equivalency = CHEM 1424 Lab)
GEOS 1113 Physical Geology (ACTS
Equivalency = GEOL 1114 Lecture)
GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)
Year Total: 14
\begin{tabular}{lr} 
Second Year & Fall \\
CSCE 2004 Programming Foundations I & 4 \\
CSCE 2114 Digital Design & 4 \\
MATH 2574 Calculus III (ACTS Equivalency = & 4 \\
MATH 2603) & \\
PHYS 2074 University Physics II (ACTS & 4 \\
Equivalency = PHYS 2044 Lecture) (Satisfies & \\
General Education Outcome 3.4) & \\
CSCE 2014 Programming Foundations II & \\
CSCE 2214 Computer Organization & \\
MATH 2584 Elementary Differential Equations & \\
MATH 2603 Discrete Mathematics & \\
Social Sciences Elective (Satisfies General & \\
Education Outcomes 3.3 and 4.1) & \\
Year Total:
\end{tabular}
\begin{tabular}{lrr} 
Third Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
CSCE 3193 Programming Paradigms & 3 & \\
CSCE 3613 Operating Systems & 3 & \\
CSCE 3953 System Synthesis and Modeling & 3 & \\
Social Sciences Elective (Satisfies General & 3 & \\
Education Outcome 3.3) & \\
INEG 3313 Engineering Probability and Statistics
\end{tabular}

CSCE 3513 Software Engineering (Satisfies
General Education Outcome 6.1)
CSCE Elective ( 4000 level)
ELEG 3933 Circuits \& Electronics
PHIL 3103 Ethics and the Professions (Satisfies
General Education Outcome 5.1)
COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003)
Year Total:
\begin{tabular}{lrr} 
Fourth Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
CSCE 4561 Capstone I & 1 & \\
CSCE 4114 Embedded Systems & 4 & \\
CSCE Elective (4000 level) & 3 & \\
CSCE Elective (4000 level) & 3 & \\
Fine Arts Elective (Satisfies General Education & 3 & \\
Outcome 3.1) & \\
General Elective & 3 & \\
CSCE 4213 Computer Architecture & & 3 \\
CSCE 4963 Capstone II & & 3 \\
CSCE Elective (4000 level) & & 3 \\
Social Sciences Elective (Satisfies General & & 3 \\
Education Outcome 3.3) & \\
General elective & & 3 \\
Year Total: & 17 & 15
\end{tabular}
\({ }^{1}\) Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
\({ }^{3}\) The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, SOCI 2033. Note, courses cannot be counted twice in degree requirements.
\({ }^{4}\) Student may petition to take the two-course sequence, STAT 3013 and STAT 3113, instead of INEG 3313.
\({ }^{5}\) The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.

\section*{Program Educational Objectives}

For the B.S. degree program in computer engineering, the following set of program educational objectives describe what graduates are expected to attain within a few years after graduation.
Computer Engineering graduates will:
1. Be able to practice their profession in a competitive market. The competitive market includes being recruited by industrial firms, government agencies and graduate schools.
2. Make a significant contribution to society, including improving the standard of living particularly for the taxpayers of the state of Arkansas.
3. Understand the need for life-long learning and continued professional development for a successful and rewarding career.
4. Accept responsibility for leadership roles, in their profession, communities, and society.

\section*{Student Learning Outcomes}
- CE1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- CE2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- CE3. An ability to communicate effectively with a range of audiences.
- CE4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- CE5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- CE6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- CE7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

\section*{Requirements for B.S.Cmp.E. with Cybersecurity Concentration}

The computer engineering degree has required sequences of courses in both hardware and software aspects of computer applications and design. Since almost all of today's complex systems encompass hardware and software elements, computer engineering graduates must acquire the skills required to design, build, and test complex digital systems. At the advanced level, students are exposed to hands-on experience with openended problems with opportunities for research and design.

The Bachelor of Science in Computer Engineering program culminates in a capstone project completed in two consecutive semesters. In the first semester, students form teams and develop a project proposal. In the second semester, students develop, implement, and present the final project.

\section*{Additional Requirements for the Cybersecurity Concentration:}

The requirements for the Computer Engineering degree with Cybersecurity Concentration include completing the B.S. in Computer Engineering requirements and 9 semester credit hours in the area of cybersecurity. Courses satisfying the cybersecurity topics are listed below.

Choose three courses from the following list of CSCE Cybersecurity 9 Electives:
\begin{tabular}{ll} 
CSCE 4433 & Cryptography \\
CSCE 4753 & Computer Networks \\
CSCE 4783 & Cloud Computing and Security \\
CSCE 4853 & Information Security
\end{tabular}

\section*{Computer Engineering with Cybersecurity Concentration}

\section*{Eight-Semester Degree Program}

The following sections contain the list of courses required for the Bachelor of Science in Computer Engineering: Cybersecurity Concentration with a suggested sequence below.

Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{First Year} & \multicolumn{2}{|r|}{Units} \\
\hline & Fall & Spring \\
\hline GNEG 1111 Introduction to Engineering I & 1 & \\
\hline MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\) & 4 & \\
\hline CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & 3 & \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) & 3 & \\
\hline U.S. History Elective (Satisfies General Education Outcomes 3.2 and 4.2) Choose from one of the following courses: & 3 & \\
\hline HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) & & \\
\hline HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency \(=\) HIST 2123) & & \\
\hline GNEG 1121 Introduction to Engineering II & & 1 \\
\hline MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) & & 4 \\
\hline PHYS 2054 University Physics I (ACTS Equivalency \(=\) PHYS 2034) (Satisfies General Education Outcome 3.4) & & 4 \\
\hline Freshman Science Elective (Satisfies General Education Outcome 3.4) Choose one of the following science and corresponding lab options: & & 4 \\
\hline BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & & \\
\hline BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) & & \\
\hline \begin{tabular}{l}
CHEM 1123 University Chemistry II (ACTS \\
Equivalency = CHEM 1424 Lecture)
\end{tabular} & & \\
\hline CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) & & \\
\hline \begin{tabular}{l}
GEOS 1113 Physical Geology (ACTS \\
Equivalency = GEOL 1114 Lecture)
\end{tabular} & & \\
\hline GEOS 1111L Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab) & & \\
\hline ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 2.1) & & 3 \\
\hline Year Total: & 14 & 16 \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{Second Year} & \multicolumn{2}{|r|}{Units} \\
\hline & Fall & Spring \\
\hline CSCE 2004 Programming Foundations I & 4 & \\
\hline CSCE 2114 Digital Design & 4 & \\
\hline MATH 2574 Calculus III (ACTS Equivalency = MATH 2603) & 4 & \\
\hline PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture) (Satisfies General Education Outcome 3.4) & 4 & \\
\hline CSCE 2014 Programming Foundations II & & 4 \\
\hline CSCE 2214 Computer Organization & & 4 \\
\hline MATH 2584 Elementary Differential Equations & & 4 \\
\hline MATH 2603 Discrete Mathematics & & 3 \\
\hline Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1) \({ }^{2}\) & & 3 \\
\hline Year Total: & 16 & 18 \\
\hline \multirow[t]{2}{*}{Third Year} & & Units \\
\hline & Fall & Spring \\
\hline CSCE 3193 Programming Paradigms & 3 & \\
\hline CSCE 3613 Operating Systems & 3 & \\
\hline CSCE 3953 System Synthesis and Modeling & 3 & \\
\hline Social Sciences Elective (Satisfies General Education Outcome 3.3) \({ }^{3}\) & 3 & \\
\hline INEG 3313 Engineering Probability and Statistics \({ }^{4}\) & 3 & \\
\hline CSCE 3513 Software Engineering (Satisfies General Education Outcome 6.1) & & 3 \\
\hline CSCE Cybersecurity Elective (4000 level) & & 3 \\
\hline ELEG 3933 Circuits \& Electronics & & 3 \\
\hline PHIL 3103 Ethics and the Professions (Satisfies General Education Outcome 5.1) & & 3 \\
\hline COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) & & 3 \\
\hline Year Total: & 15 & 15 \\
\hline \multirow[t]{2}{*}{Fourth Year} & & Units \\
\hline & Fall & Spring \\
\hline CSCE 4561 Capstone I & 1 & \\
\hline CSCE 4114 Embedded Systems & 4 & \\
\hline CSCE Cybersecurity Elective (4000 level) & 3 & \\
\hline CSCE Elective (4000 level) & 3 & \\
\hline Fine Arts Elective (Satisfies General Education Outcome 3.1) \({ }^{5}\) & 3 & \\
\hline General Elective & 3 & \\
\hline CSCE 4213 Computer Architecture & & 3 \\
\hline CSCE 4963 Capstone II & & 3 \\
\hline CSCE Cybersecurity Elective (4000 level) & & 3 \\
\hline Social Sciences Elective (Satisfies General Education Outcome 3.3) \({ }^{3}\) & & 3 \\
\hline General elective & & 3 \\
\hline Year Total: & 17 & 15 \\
\hline
\end{tabular}

Units
Spring

\section*{Computer Science B.S.C.S. Eight-Semester Degree Program}

The following sections contain the list of courses required for the Bachelor of Science in Computer Science (B.S.C.S.) degree with a suggested sequence below.

Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.
\begin{tabular}{lrr} 
First Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
GNEG 1111 Introduction to Engineering I & 1 & \\
ENGL 1013 Composition I (ACTS Equivalency & 3 & \\
= ENGL 1013) (Satisfies General Education & & \\
Outcome 1.1) & 3 \\
CHEM 1103 University Chemistry I (ACTS & & \\
Equivalency \(=\) CHEM 1414 Lecture) &
\end{tabular}

MATH 2554 Calculus I (ACTS Equivalency
= MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\)
History Elective (Satisfies General Education
Outcomes 3.2 and 4.2). Choose from one of the following courses:

HIST 2003 History of the American People to 1877 (ACTS Equivalency \(=\) HIST 2113)
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency \(=\) HIST 2123)

GNEG 1121 Introduction to Engineering II
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
PHYS 2054 University Physics I (ACTS
Equivalency = PHYS 2034)
Freshman Science Elective (Satisfies General
Education Outcome 3.4) Choose one of the following science and corresponding lab options:

BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture)
BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 1114 Lecture) GEOS 1111L Physical Geology Laboratory (ACTS Equivalency \(=\) GEOL 1114 Lab) PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture) (For students who already have credit for PHYS 2054, they may wish to select PHYS 2074 for their Freshman Science Elective.)
ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)
Year Total:
Second Year Fall

CSCE 2004 Programming Foundations I 4
CSCE 2114 Digital Design 4
MATH 2603 Discrete Mathematics
Fine Arts Elective (Satisfies General Education
Outcome 3.1) \({ }^{2}\)
Social Sciences Elective (Satisfies General
Education Outcomes 3.3 and 4.1) \({ }^{3}\)
CSCE 2014 Programming Foundations II
CSCE 2214 Computer Organization
MATH 3083 Linear Algebra
Social Sciences Elective (Satisfies General
Education Outcome 3.3) \({ }^{4}\)
Year Total:
17

COMM 1313 Public Speaking (ACTS Equivalency
= SPCH 1003) (Satisfies General Education Outcome 1.2)
Year Total: 15
\begin{tabular}{lrr} 
Fourth Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
CSCE 4561 Capstone I & 1 & \\
CSCE 4133 Algorithms & 3 & \\
CSCE 4753 Computer Networks & 3 & \\
CSCE Elective (4000 level) & 3 & \\
General Elective & 3 & \\
General Elective & 3 & \\
CSCE 4963 Capstone II & & 3 \\
CSCE 4323 Formal Languages and Computability & & 3 \\
CSCE Elective (4000 level) & & 3 \\
General Elective & & 3 \\
Social Sciences Elective (Satisfies General & & 3 \\
Education Outcome 3.3) & \\
Year Total: & 16 & 15
\end{tabular}

Total Units in Sequence:
\({ }^{1}\) Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
\({ }^{3}\) The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
\({ }^{4}\) The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H,

PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, SOCI 2033. Note, courses cannot be counted twice in degree requirements.
\({ }^{5}\) Student may petition to take the two-course sequence, STAT 3013 and STAT 3113, instead of INEG 3313.

\section*{Program Educational Objectives}

For the B.S. degree program in computer science, the following set of program educational objectives describe what graduates are expected to attain within a few years after graduation.

Computer Science graduates will:
1. Enhance Arkansas' and the nation's information technology industry.
2. Engage in advanced study of Computer Science and other fields, including engineering, law, medicine, and business.
3. Possess a sufficiently broad education to be inquisitive, well-informed reasoning members of their profession and society.
4. Understand human, social and ethical issues so that they will be good employees or employers, citizens and neighbors.

\section*{Student Learning Outcomes}
- CS1. An ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- CS2. An ability to design, implement, and evaluate a computingbased solution to meet a given set of computing requirements in the context of the program's discipline.
- CS3. An ability to communicate effectively in a variety of professional contexts.
- CS4. An ability to recognize professional responsibilities and make informed judgements in computing practice based on legal and ethical principles.
- CS5. An ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- CS6. An ability to apply computer science theory and software development fundamentals to produce computing-based solutions.

\section*{Requirements for B.S.C.S. with Cybersecurity Concentration}

Computer science core courses include the fundamentals of programming concepts, operating systems, algorithms, formal languages, and database management systems.

The Bachelor of Science in Computer Science program culminates in a capstone project completed in two consecutive semesters. In the first semester, students form teams and develop a project proposal. In the second semester, students develop, implement, and present the final project.

\section*{Additional Requirements for the Cybersecurity Concentration:}

Requirements for the Computer Science major with Cybersecurity Concentration include completing the B.S. in Computer Science
requirements and 9 semester credit hours in the area of cybersecurity. Courses satisfying the cybersecurity topics are listed below.
\begin{tabular}{lll} 
Take the following CSCE Cybersecurity electives & \\
CSCE 4433 & Cryptography & 3 \\
CSCE 4783 & Cloud Computing and Security & 3 \\
CSCE 4853 & Information Security & 3 \\
\hline Total Hours & & 9
\end{tabular}

\section*{B.S. in Computer Science With Cybersecurity Concentration \\ Eight-Semester Degree Program}

The following sections contain the list of courses required for the Bachelor of Science in Computer Science: Cybersecurity Concentration (CSCEBSCYBR) degree with a suggested sequence below.

Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{First Year} & \multicolumn{2}{|r|}{Units} \\
\hline & Fall & Spring \\
\hline GNEG 1111 Introduction to Engineering I & 1 & \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) & 3 & \\
\hline CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & 3 & \\
\hline MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\) & 4 & \\
\hline History Elective (Satisfies General Education Outcomes 3.2 and 4.2). Choose from one of the following courses: & 3 & \\
\hline HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) & & \\
\hline HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency \(=\) HIST 2123) & & \\
\hline GNEG 1121 Introduction to Engineering II & & 1 \\
\hline MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) & & 4 \\
\hline PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) & & 4 \\
\hline Freshman Science Elective (Satisfies General Education Outcome 3.4) Choose one of the following science and corresponding lab options: & & 4 \\
\hline \begin{tabular}{l}
BIOL 1543 Principles of Biology (ACTS \\
Equivalency = BIOL 1014 Lecture)
\end{tabular} & & \\
\hline BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) & & \\
\hline \begin{tabular}{l}
CHEM 1123 University Chemistry II (ACTS \\
Equivalency = CHEM 1424 Lecture)
\end{tabular} & & \\
\hline CHEM 1121L University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab) & & \\
\hline
\end{tabular}

GEOS 1113 Physical Geology (ACTS
Equivalency \(=\) GEOL 1114 Lecture)
GEOS 1111L Physical Geology Laboratory
(ACTS Equivalency = GEOL 1114 Lab)
PHYS 2074 University Physics II (ACTS
Equivalency = PHYS 2044 Lecture) (For students who already have credit for PHYS 2054, they may wish to select PHYS 2074 for their Freshman Science Elective.)

ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)
Year Total: 14
\begin{tabular}{lrr} 
Second Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
CSCE 2004 Programming Foundations I & 4 & \\
CSCE 2114 Digital Design & 4 & \\
MATH 2603 Discrete Mathematics & 3 & \\
Fine Arts Elective (Satisfies General Education & 3 \\
Outcome 3.1) & \\
Social Sciences Elective (Satisfies General & 3
\end{tabular}

Education Outcomes 3.3 and 4.1) \({ }^{3}\)
CSCE 2014 Programming Foundations II
CSCE 2214 Computer Organization
MATH 3083 Linear Algebra
Social Sciences Elective (Satisfies General
Education Outcome 3.3) \({ }^{4}\)
Year Total:
Third Year
Fall
CSCE 3193 Programming Paradigms 3

CSCE 3613 Operating Systems 3
INEG 3313 Engineering Probability and Statistics \({ }^{5}\)
PHIL 3103 Ethics and the Professions (Satisfies
General Education Outcome 5.1)
General Elective
CSCE 3513 Software Engineering (Satisfies
General Education Outcome 6.1)
CSCE 4523 Database Management Systems
CSCE Cybersecurity Elective (4000 level)
MATH 3103 Combinatorics
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003) (Satisfies General Education
Outcome 1.2)
Year Total: 15
Fourth Year \(\quad\) Fall

Units
Spring
CSCE 4133 Algorithms ..... 3
CSCE 4753 Computer Networks ..... 3
CSCE Cybersecurity Elective (4000 level) ..... 3
General Elective ..... 3
General Elective ..... 3
CSCE 4963 Capstone II ..... 3
CSCE 4323 Formal Languages and Computability ..... 3
CSCE Cybersecurity Elective (4000 level) ..... 3
General Elective ..... 3
Social Sciences Elective (Satisfies General ..... 3
Education Outcome 3.3) \({ }^{4}\)


Students must meet all requirements of their degree programs and are expected to keep informed concerning current regulations, policies, and program requirements in their fields of study. Changes made in the curriculum at a level beyond that at which a student is enrolled might become graduation requirements for that student. Changes made in the curriculum at a level lower than the one at which a student is enrolled are not required of that student. Students should consult their departmental adviser for additional information.

\section*{Computer Science B.A. Eight-Semester Degree Program}

The following sections contain the list of courses required for the Bachelor of Arts in Computer Science (B.A.) degrees with a suggested sequence below.

Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

Scholarship students may need to take General Elective hours in First Year, Fall and Spring Semesters, as well as the Third Year, Spring Semester for 15 semester hours.
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{First Year} & \multicolumn{2}{|r|}{Units} \\
\hline & Fall & Spring \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) & 3 & \\
\hline MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\) & 4 & \\
\hline Social Sciences Elective Satisfies General Education Outcomes (3.3 and 4.1) \({ }^{2}\) & 3 & \\
\hline Select one of the following Satisfies General Education Outcomes (3.2 and 4.2) & 3 & \\
\hline HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) & & \\
\hline HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency \(=\) HIST 2123) & & \\
\hline CSCE 2004 Programming Foundations I & & 4 \\
\hline CSCE 2114 Digital Design & & 4 \\
\hline \begin{tabular}{l}
ENGL 1023 Composition II (ACTS Equivalency \\
= ENGL 1023) (Satisfies General Education
\end{tabular} & & 3 \\
\hline Outcome 1.1) & & \\
\hline or ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) & & \\
\hline MATH 2603 Discrete Mathematics & & 3 \\
\hline Year Total: & 13 & 14 \\
\hline \multirow[t]{2}{*}{Second Year} & & Units \\
\hline & Fall & Spring \\
\hline CSCE 2014 Programming Foundations II & 4 & \\
\hline CSCE 2214 Computer Organization & 4 & \\
\hline Fine Arts Elective (Satisfies General Education Outcome 3.1) \({ }^{3}\) & 3 & \\
\hline
\end{tabular}
\begin{tabular}{ll} 
Social Sciences Elective (Satisfies General & 3 \\
Education Outcome 3.3) & \\
General Elective & 3
\end{tabular}

CSCE 3193 Programming Paradigms 3
COMM 1313 Public Speaking (ACTS Equivalency 3
= SPCH 1003) (Satisfies General Education
Outcomes 1.2 and 5.1)
STAT 2303 Principles of Statistics (ACTS
Equivalency = MATH 2103)
Two General Electives
Year Total: 17 15
\begin{tabular}{lrr} 
Third Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
CSCE 3513 Software Engineering (Satisfies & 3 & \\
\begin{tabular}{l} 
General Education Outcome 6.1)
\end{tabular} & & \\
\begin{tabular}{l} 
ENGL 3053 Technical and Professional Writing \\
(ACTS Equivalency = ENGL 2023)
\end{tabular} & 3 & \\
\begin{tabular}{l} 
Science Elective (Meets State Minimum Core and \\
Satisfies General Education Outcome 3.4)
\end{tabular} & 4 & \\
Two General Electives & 6 & \\
PHIL 3103 Ethics and the Professions \({ }^{5}\) & & 3 \\
\begin{tabular}{l} 
CSCE 3613 Operating Systems \\
Social Science Elective (Satisfies General
\end{tabular} & & 3 \\
Education Outcome 3.3) & \\
Two General Electives & & 3 \\
Year Total: & 16 & 14
\end{tabular}
\begin{tabular}{lrr} 
Fourth Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
Two CSCE electives (3000 level or higher) & 6 & \\
\hline Science Elective (Meets State Minimum Core and & 4 & \\
\hline Satisfies General Education Outcome 3.4) & & \\
Two General Electives (3000 level or higher) & 6 & \\
Two CSCE electives (3000 level or higher) & & 6 \\
Three General Electives (3000 level or Higher) & & 9 \\
Year Total: & 16 & 15
\end{tabular}

Total Units in Sequence:
\({ }^{1}\) Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1123, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
\({ }^{3}\) The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
\({ }^{4}\) The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003,

HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, SOCI 2033. Note, courses cannot be counted twice in degree requirements.
\({ }^{5}\) PHIL 3103 also meets Humanities Elective for State Minimum Core and Satisfies General Education Outcomes 3.2 and 5.1.

\section*{Requirements for a Minor in Computer Science:}
\begin{tabular}{ll}
\hline CSCE 2004 & Programming Foundations I \\
CSCE \(2014 \quad\) Programming Foundations II \\
CSCE \(3193 \quad\) Programming Paradigms \\
Three additional CSCE courses numbered above 2000. \\
\hline Total Hours \\
Requirements for Departmental Honors \\
in Computer Science and Computer \\
Engineering
\end{tabular}

The Honors Program in Computer Science and Computer Engineering is designed for the superior student and is intended to help the student develop a more comprehensive view of Computer Science and Computer Engineering. The program provides a vehicle for the recognition of achievements beyond the usual course of study. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate's whole program of honors studies. A minimum of 12 hours of honors coursework is required.

The following requirements are necessary for graduation with honors in either the Computer Engineering or Computer Science Bachelor of Science program:
1. The candidate must satisfy the requirements set forth by the College of Engineering.
2. The student must obtain at least a 3.50 grade-point average in required Computer Engineering and/or Computer Science courses.
3. The student must complete 6 hours of Honors credit in the major, which includes 3 hours of Honors Thesis taken as successive semesters of CSCE 491 VH and 3 hours of CSCE coursework.

\section*{Faculty}

Andrews, David, Ph.D. (Syracuse University), M.S., B.S.E.E. (University of Missouri-Columbia), Professor, Thomas Mullins Chair of Computer Science and Computer Engineering, 2008.
Di, Jia, Ph.D. (University of Central Florida), M.S., B.S. (Tsinghua University), Professor, 21st Century Research Leadership Chair, 2004, 2014.

Gauch, John Michael, Ph.D. (University of North Carolina at Chapel Hill), M.Sc., B.Sc. (Queen's University, Canada), Professor, 2008.

Gauch, Susan E., Ph.D. (University of North Carolina at Chapel Hill), M.Sc., B.Sc. (Queen's University, Canada), Professor, 2007.

Huang, Miaoqing, Ph.D. (George Washington University), B.S. (Fudan University), Associate Professor, 2010, 2016.
Jin, Kevin, Ph.D., M.S., (University of Illinois at Urbana-Champaign), B.E. (Nanyang Technological University, Singapore), Associate Professor, , 2021.

Le, Thi Hoang Ngan, Ph.D. (Carnegie Mellon University), M.S., B.S. (University of Natural Sciences, Ho Chi Minh City, Vietnam), Assistant Professor, 2019.
Li, Qinghua, Ph.D. (Pennsylvania State University), M.S. (Tsinghua University), B.E. (Xi'an Jiaotong University), Associate Professor, 2013. Luu, Khoa, Ph.D. (Concordia University), Assistant Professor, 2018.
Nakarmi, Ukash, Ph.D. (University at Buffalo), M.S. (Oklahoma State University), Assistant Professor, 2020.
Nelson, Alexander H., Ph.D. (University of Maryland), M.S., B.S. (University of Arkansas), Associate Professor, 2017, 2023.
Pan, Yanjun, Ph.D., (University of Arizona), B.E. (Nanjing University of Aeronautics and Astronautics, China), Assistant Professor, 2022.
Panda, Brajendra Nath, Ph.D. (North Dakota St. University), M.S. (Utkal University, India), Professor, 2001, 2007.
Parkerson, Pat, Ph.D., B.S. (University of Arkansas), Associate Professor, 1990, 2005.
Patitz, Matthew J., Ph.D., M.S., B.S. (lowa State University), Associate Professor, 2012, 2018.
Peng, Yarui, Ph.D., M.S. (Georgia Institute of Technology), B.S. (Tsinghua University), Assistant Professor, 2017.
Streeter, Lora, Ph.D., M.S. (University of Arkansas, Fayetteville), Teaching Assistant Professor, 2019.
Thompson, Dale R., Ph.D. (North Carolina State University), M.S., B.S. (Mississippi State University), Professor, 2000, 2022.
Wu, Xintao, Ph.D. (George Mason University), M.E. (Chinese Academy of Space Technology), B.S. (University of Science and Technology of China), Professor, Charles D. Morgan/Acxiom Graduate Research Chair, 2014, 2019.
Zhang, Lu, Ph.D. (Nanyang Technological University, Singapore), Assistant Professor, 2018.

\section*{Courses}

CSCE 2004. Programming Foundations I. 4 Hours.
Introductory programming course for students majoring in computer science or computer engineering. Software development process: problem specification, program design, implementation, testing and documentation. Programming topics: data representation, conditional and iterative statements, functions, arrays, strings, file I/O and classes. Using C++ in a UNIX environment. Corequisite: Lab component. Prerequisite: MATH 2445 or MATH 2554 or MATH 2554 C with a grade of \(C\) or better, a College of Engineering (ENGR) student, a Computer Science Minor (CSCE-M), or a math major (MATHBS or MATHBA). (Typically offered: Fall and Spring)

\section*{CSCE 2014. Programming Foundations II. 4 Hours.}

This course continues developing problem solving techniques by focusing on fundamental data structures and associated algorithms. Topics include: abstract data types, introduction to object-oriented programming, linked lists, stacks, queues, hash tables, binary trees, graphs, recursion, and searching and sorting algorithms. Using C++ in a UNIX environment. Corequisite: Lab component. Prerequisite: CSCE 2004 with a grade of C or better. (Typically offered: Fall and Spring)
CSCE 2023. Introduction to Programming in Java. 3 Hours.
Introduction to programming in Java with emphasis on engineering applications. Programming techniques: data representation and expressions, conditional and iterative statements, arrays, lists, file I/O, methods. Object oriented programming: designing, implementing and using classes, collections and composite objects. Students will gain hands-on programming experience and exposure to classic engineering problem solving techniques. Prerequisite: MATH 2445 or MATH 2554 or MATH 2554C, each with a grade of \(C\) or higher. (Typically offered: Irregular)

\section*{CSCE 2114. Digital Design. 4 Hours.}

Introduction to the hardware aspects of digital computers, logic gates, flipflops, reduction, finite state machines, sequential logic design, digital systems, software design tools, hardware description language (VHDL), and implementation technologies. Corequisite: Lab component. Prerequisite: MATH 2554 or MATH 2554C with a grade of C or better. (Typically offered: Fall and Spring) This course is cross-listed with ELEG 2904.

\section*{CSCE 2214. Computer Organization. 4 Hours.}

Presents the relationship between computing hardware and software with a focus on the concepts for current computers. CPU design topics are covered including various techniques for microprocessor design and performance evaluation. Corequisite: Lab component. Prerequisite: CSCE 2114 with a grade of C or better. (Typically offered: Fall and Spring)

CSCE 3193. Programming Paradigms. 3 Hours.
Programming in different paradigms with emphasis on object oriented programming and network programming. Survey of programming languages, event driven programming, and concurrency. Prerequisite: CSCE 2014 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{CSCE 3193H. Honors Programming Paradigms. 3 Hours.}

Programming in different paradigms with emphasis on object oriented programming and network programming. Survey of programming languages, event driven programming, and concurrency. Prerequisite: CSCE 2014 with a grade of C or better. (Typically offered: Fall)
This course is equivalent to CSCE 3193.
CSCE 3513. Software Engineering. 3 Hours.
A modern approach to the current techniques used in software design and development. This course emphasizes the use of modern software development tools, multi-module programming, and team design and engineering. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Fall and Spring)

CSCE 3613. Operating Systems. 3 Hours.
An introduction to operating systems including topics in system structures, process management, storage management, files, distributed systems, and case studies. Prerequisite: CSCE 2014 and CSCE 2214, each with a grade of \(C\) or better. (Typically offered: Fall and Spring)

\section*{CSCE 3613H. Honors Operating Systems. 3 Hours.}

An introduction to operating systems including topics in system structures, process management, storage management, files, distributed systems, and case studies. Prerequisite: CSCE 2014 and CSCE 2214, each with a grade of \(C\) or better. (Typically offered: Spring)
This course is equivalent to CSCE 3613.

\section*{CSCE 3953. System Synthesis and Modeling. 3 Hours.}

This course instructs the students in the use of modern synthesis and modeling languages and approaches for design automation. This course will teach students the use of HDLs and modeling languages for representing and implementing digital computer systems. Prerequisite: CSCE 2214 with a grade of \(C\) or better. (Typically offered: Fall)

\section*{CSCE 4013. Special Topics. 3 Hours.}

Consideration of computer science topics not covered in other courses. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{CSCE 4043. RFID Information Systems Security. 3 Hours.}

Radio frequency identification (RFID) information systems provide information to users about objects with RFID tags. They require the application of information systems security (INFOSEC) to protect the information from tampering, unauthorized information disclosure, and denial of service to authorized users. This course addresses security and privacy in an RFID system. Prerequisite: INEG 2314. (Typically offered: Irregular)

CSCE 4114. Embedded Systems. 4 Hours.
The architecture, software, and hardware of embedded systems. Involves a mixture of hardware and software for the control of a system (including electrical, electro-mechanical, and electro-chemical systems). They are found in a variety of products including cars, VCRs, HDTVs, cell phones, pacemakers, spacecraft, missile systems, and robots for factory automation. Corequisite: Lab component. Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Fall)

CSCE 4123. Programming Challenges. 3 Hours.
This course studies the principle methods used in the solution of programming contest problems, e.g., data structures strings, sorting, machine arithmetic and algebra, combinatorics, number theory, backtracking, graph traversal, graph algorithms, dynamic programming, grids, and computational geometry. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4133. Algorithms. 3 Hours.}

Provides an introduction to formal techniques for analyzing the complexity of algorithms. The course surveys important classes of algorithms used in computer science and engineering. Prerequisite: (CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better) and (MATH 2603 or MATH 2803). (Typically offered: Fall)

CSCE 4143. Data Mining. 3 Hours.
The course focuses on the principles, theory, design, and implementation of data mining algorithms for large-scale data. Topics include foundations of data mining; preprocessing; mining frequent patterns, associations and correlations; supervised learning including decision tree induction, naïve Bayesian classification, support vector machine, logistic regression, Bayesian network, and K-nearest neighbor learning; unsupervised learning including K-means clustering, hierarchical clustering, density-based clustering, and grid-based clustering; outlier analysis; graph mining; scalable and distributed data mining. Prerequisite: (CSCE 3193 or CSCE 3193H or DASC 2103) or (CSCE 2014 and INEG 2333 and INEG 2314) or (CSCE 2014 and STAT 3013 and STAT 3003)). (Typically offered: Fall)
This course is cross-listed with INEG 4143.
CSCE 4213. Computer Architecture. 3 Hours.
The architecture of modern scalar and parallel computing systems. Techniques for dynamic instruction scheduling, branch prediction, instruction level parallelism, shared and distributed memory multiprocessor systems, array processors, and memory hierarchies. Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Spring)
This course is cross-listed with ELEG 4983.
CSCE 4233. Low Power Digital Systems. 3 Hours.
The reduction of power consumption is rapidly becoming one of the key issues in digital system design. Traditionally, digital system design has mainly focused on performance and area trade-offs. This course will provide a thorough introduction to digital design for lower consumption at the circuit, logic, and architectural level. Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Irregular)

CSCE 4253. Concurrent Computing. 3 Hours.
Programming concurrent processes; computer interconnection network topologies; loosely coupled and tightly coupled paralleled computer architectures; designing algorithms for concurrency; distributed computer architectures. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4263. Advanced Data Structures. 3 Hours.}

This course continues the study of data structures, algorithmic analysis for these data structures, and their efficient implementation to support standard library in programming languages. Topics include: AVL trees, Red-Black trees, Splay trees, Optimal Binary Search trees, 2-3 tree, 2-3-4 tree, B-trees, Segment trees, Leftist Heaps, Binomial Heaps, Fibonacci Heap, Disjoint Set, Hashing, and big integer with hundreds to thousands of digits. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

CSCE 4273. Big Data Analytics and Management. 3 Hours.
Introduction to tools and techniques for distributed data computing and management, big data analytics, scalable machine learning, and real-time streaming data analysis. Students cannot receive credit for both CSCE 4273 and CSCE 5273. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular)

CSCE 4323. Formal Languages and Computability. 3 Hours.
Finite Automata and regular languages, regular expressions, context-free languages and pushdown automata, nondeterminism, grammars, and Turing machines. Church's thesis, halting problem, time complexity, space complexity and undecidability. Prerequisite: (CSCE 3193 or CSCE 3193H, each with a grade of C or better) and (MATH 2603 or MATH 2803). (Typically offered: Spring)

CSCE 4333. Introduction to Integrated Circuit Design. 3 Hours.
Design and layout of large scale digital integrated circuits using CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design and layout strategies for large scale CMOS circuits. Students may not receive credit for both CSCE 4333 and CSCE 5223. Prerequisite: ELEG 3213 or ELEG 3933 and MATH 2584 (Typically offered: Fall)

\section*{CSCE 4353. CPLD/FPGA-Based System Design. 3 Hours.}

Field Programmable Logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices.
Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Irregular) This course is cross-listed with ELEG 4963.

\section*{CSCE 4373. Electronic Design Automation. 3 Hours.}

This course studies physical design, analysis and optimization of VLSI circuits and systems with emphasis on computational realizations and optimization. We start with some related topics such as graph algorithms and discuss various well-known algorithms and methodologies in the design process of VLSI circuits, including design partitioning, logic synthesis, floorplanning, routing, static timing analysis and performance-driven layout. It requires a basic knowledge of digital circuit design, data structure, and object-oriented programming. Students cannot receive credit for both CSCE 4373 and CSCE 5373. Prerequisite: CSCE 3953 and CSCE 3193, each with a C or higher. (Typically offered: Irregular)
CSCE 4423. Computer Systems Modeling. 3 Hours.
Basic concepts of problem analysis, model design, and simulation experiments. A simulation will be introduced and used in this course. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4433. Cryptography. 3 Hours.}

This course provides a general introduction to modern cryptography. Topics include: stream ciphers, block ciphers, message authentication codes, public key encryption, key exchange, and signature schemes. Prerequisite: (CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better) and (MATH 2603 or MATH 2803). (Typically offered: Irregular)
CSCE 4523. Database Management Systems. 3 Hours.
Introduction to database management systems, architecture, storage structures, indexing, relational data model, E-R diagrams, query languages, SQL, ODBC, transaction management, integrity, and security. Students may not receive credit for both CSCE 4523 and CSCE 5523. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of \(C\) or better. (Typically offered: Spring)

\section*{CSCE 4543. Software Architecture. 3 Hours.}

A study of software architecture through the use of case studies drawn from real systems designed to solve real problems from technical as well as managerial perspectives. Techniques for designing, building, and evaluating software architectures. Prerequisite: CSCE 4133 and CSCE 3513. (Typically offered: Irregular)

\section*{CSCE 4553. Information Retrieval. 3 Hours.}

The objective of this course is to give students a hands-on introduction to information retrieval systems. Classical textual information retrieval systems are studied, including text preprocessing, file structures, term-weighting schemes, and web search engines. Students may not receive credit for both CSCE 4553 and CSCE 5533. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)
CSCE 4561. Capstone I. 1 Hour.
CSCE students complete a comprehensive software capstone project during their final year of undergraduate studies. The project is done over 2 semesters in phases: concept, formal proposal, implementation, and presentation. The projects include and may require the integration of software and human factors and hardware elements and are developed to software engineering methodologies. Prerequisite: CSCE 3513 and (CSCE 3613 or CSCE 3613H) and completion of 96 credit hours. (Typically offered: Fall)

\section*{CSCE 4613. Artificial Intelligence. 3 Hours.}

Introduction to intelligent agents, Al languages, search, first order logic, knowledge representation, ontologies, problem solving, natural language processing, machine vision, machine learning, and robotics. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4623. Mobile Programming. 3 Hours.}

An introduction to software development on mobile devices. The major topics covered in this course include underlying concepts and principles in mobile programming, as well as hands-on programming experience on mobile devices with an emphasis on smartphones. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of \(C\) or better. (Typically offered: Irregular)

\section*{CSCE 4643. Graphics Processing Units Programming. 3 Hours.}

This course provides an introduction to massively parallel programming using Graphics Processing Units (GPUs). Topics include basic programming model, GPU thread hierarchy, GPU memory architecture, and performance optimization techniques and parallel patterns needed to develop real-life applications.
Prerequisite: CSCE 2014 with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4753. Computer Networks. 3 Hours.}

This course is an introductory course on computer networks. Using the Internet as a vehicle, this course introduces underlying concepts and principles of modern computer networks, with emphasis on protocols, architectures, and implementation issues. Students cannot receive graduate credit for CSCE 4753. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4783. Cloud Computing and Security. 3 Hours.}

Cloud computing has entered the mainstream of information technology, providing highly elastic scalability in delivery of enterprise applications and services. In this course, we will focus on the architecture of today's cloud computing, the technologies used within them, application development using contemporary cloud computing tools, and the security risks and management in the cloud. Students cannot receive credit for both CSCE 4783 and CSCE 5783. Prerequisite: CSCE 3613 or CSCE 3613 H , each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4813. Computer Graphics. 3 Hours.}

Introduction to the theory and algorithms used in computer graphics systems and applications. Topics include: 2D and 3D geometric models (points, lines, polygons, surfaces), affine transformations (rotation, translation, scaling), viewpoint calculation (clipping, projection), lighting models (light-material interactions, illumination and shadow calculation). Students will implement their own graphics pipeline to demonstrate many of these techniques. Higher level computer graphics applications will be created using OpenGL. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of \(C\) or better. (Typically offered: Irregular)

\section*{CSCE 4853. Information Security. 3 Hours.}

This course covers principles, mechanisms, and policies governing confidentiality, integrity, and availability of digital information. Topics to be covered include security concepts and mechanisms, security policies, multilevel security models, system vulnerability, threat and risk assessment, basic cryptography and its applications, intrusion detection systems. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular)

CSCE 490V. Individual Study. 1-6 Hour.
Individual study directed by faculty in current research topics, state of the art, or advanced methodology in one of the major computer science or computer engineering areas. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{CSCE 4914. Advanced Digital Design. 4 Hours.}

To master advanced logic design concepts, including the design and testing of synchronous and asynchronous combinational and sequential circuits using state of the art CAD tools. Corequisite: Lab component. Prerequisite: CSCE 2114 or ELEG 2904. (Typically offered: Irregular)

CSCE 491VH. Honors Thesis. 1-3 Hour.
To provide honors students with experience in presenting their research accomplishments to their peers and faculty. Prerequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

CSCE 4963. Capstone II. 3 Hours.
CSCE students complete a comprehensive capstone project during their final year of undergraduate studies. The project is done over two consecutive semesters in phases: concepts, formal proposal, implementation, and presentation. The projects include and may require the integration of software, human factors, and hardware elements and are developed using software engineering methodologies. Prerequisite: CSCE 4561. (Typically offered: Spring)

\section*{Data Analytics (DATA)}

\section*{Minor in Data Analytics}

A minor in Data Analytics is offered through the Department of Industrial Engineering in the College of Engineering.

Requirements for the minor in Data Analytics: The minor requires completion of 15-18 credits of coursework, including:
\begin{tabular}{|c|c|c|}
\hline One course from \(A\) & Applied Statistics and Math Modeling group & 3-4 \\
\hline INEG 2314 & Statistics for Industrial Engineers I & \\
\hline INEG 2333 & Applied Probability and Statistics for Engineers II & \\
\hline INEG 3313 & Engineering Probability and Statistics & \\
\hline ELEG 3143 & Probability \& Stochastic Processes & \\
\hline STAT 2823 & Biostatistics & \\
\hline STAT 3013 & Introduction to Probability & \\
\hline Two courses from & Computing and Informatics group & 6-8 \\
\hline CSCE 2004 & Programming Foundations I & \\
\hline CSCE 2014 & Programming Foundations II & \\
\hline INEG 4683 & Decision Support in Industrial Engineering & \\
\hline INEG 3833 & Introduction to Database Concepts for Industrial Engineers & \\
\hline ISYS 2263 & Principles of Information Systems & \\
\hline STAT 3003 & Statistical Methods & \\
\hline STAT 3001L & Statistics Methods Laboratory & \\
\hline Two courses from & the Analytics group & 6 \\
\hline
\end{tabular}

CSCE 4143 Data Mining
or INEG 414Bata Mining
\begin{tabular}{ll} 
CSCE 4273 & Big Data Analytics and Management \\
\hline CSCE 4613 & Artificial Intelligence \\
ECON 4743 & Introduction to Econometrics \\
\hline ECON 4753 & Forecasting \\
INEG 4163 & \begin{tabular}{l} 
Introduction to Modern Statistical Techniques for \\
Industrial Applications
\end{tabular} \\
\hline ISYS 4193 & Business Analytics and Visualization \\
ISYS 4293 & Business Intelligence \\
\hline STAT 4333 & Analysis of Categorical Responses \\
\hline
\end{tabular}

Total Hours

\section*{Electrical Engineering and Computer Science (EECS)}

\section*{Jia Di}

Head of the Department
JBHT 504 J.B. Hunt Center for Academic Excellence
479-575-5728
Email: jdi@uark.edu

The newly merged Department of Electrical Engineering and Computer Science will offer the same degrees as the former Department of Electrical Engineering and the Department of Computer Science and Computer Engineering. Review any of their undergraduate programs at the following links:

\section*{Majors}
- Computer Engineering (p. 849) B.S.Cmp.E.
- Computer Engineering (p. 851) B.S.Cmp.E. with Cybersecurity Concentration
- Computer Science (p. 852) B.S.C.S.
- Computer Science (p. 854) B.S.C.S. with Cybersecurity Concentration
- Computer Science (p. 855) B.A.
- Electrical Engineering (p. 862) B.S.E.E.

\section*{Minors}
- Computer Science (p. 857)

\section*{Electrical Engineering (ELEG)}

Jia Di
Head of Department
3217 Bell Engineering Center
479-575-5728
Department of Electrical Engineering Website (http://electricalengineering.uark.edu/)

Electrical engineering is a professional engineering discipline that in its broader sense covers the study and application of electricity, electronics and electromagnetism. Electrical engineers are in charge of designing and utilizing electrical and electronic components, integrated circuits and computer chips, and electronic assemblies to benefit mankind. Fields of electrical engineering include analog and mixed-signal circuit design/test, biomedical, communications, computer hardware and digital circuit design, control systems, electronic packaging, embedded systems design, microwave and radar engineering, nanophotonics,
nanotechnology/microelectronics/optoelectronics, pattern recognition and artificial intelligence, power electronics, and renewable energy/power.

The electrical engineering graduate is at the forefront of technologies leading to accelerated use of electric power, applications of real time embedded control systems for smart highways, smart vehicles and smart gadgets, global communications, the dominating influence of the computer and electronics on modern society, the use of electronic equipment for medical diagnosis, the use of wireless chemical and biological nanosensors for hazard detection, the miniaturization of electronics, microwave and optical technology for national defense, and a host of other developments. Therefore, the use of electrical and electronic equipment has spread into such diverse areas as agricultural production, automotives, computer hardware and networks, health care, information technology, manufacturing, marketing, recreation, renewable energy resources, outer space and underwater exploration, transportation, and many others. As a result, electrical engineering is the largest of all scientific disciplines and assures a continuing demand for electrical engineering graduates throughout private industry and government.

\section*{Undergraduate Program}

The department also actively participates in the Honors Program to challenge superior students with a more in-depth academic program and research experience. The Honors program enables students to work more closely with faculty members and other students in a team environment. Please see the requirements given below.

In line with all the opportunities of our graduates, the Electrical Engineering Department has the mission and educational objectives to produce graduates who:
1. Are recruited in a competitive market and valued as reliable and competent employees by a wide variety of industries; in particular, electrical engineering industries,
2. Succeed in graduate studies such as engineering, science, law, medicine, business, and other professions, should they chose to pursue those studies.
3. Understand the need for life-long learning and continued professional development for a successful and rewarding career, and
4. Accept responsibility for leadership roles, in their profession, in their communities, and in the global society.

\section*{Accreditation}

The Electrical Engineering Department offers undergraduate, graduate, and doctoral degrees. The department has offered a Bachelor of Science degree in Electrical Engineering (B.S.E.E.) for over 100 years. The B.S.E.E. degree is accredited by the Engineering Accreditation Commission of ABET, www.abet.org (http://www.abet.org). Completion of the degree requirements provides graduates with the following learning outcomes:
1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics,
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors,
3. an ability to communicate effectively with a range of audiences,
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must
consider the impact of engineering solutions in global, economic, environmental, and societal contexts,
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives,
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions,
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

\section*{Graduate Program in Electrical Engineering}

The graduate program offers a Master of Science degree in Electrical Engineering (on campus and online) and a Doctor of Philosophy degree in Engineering. The graduate program provides additional instruction and hands-on experience beyond the undergraduate level, and produces graduates who are prepared to promptly address critical issues and assume advanced positions in the profession, including management, design, teaching, research and development.

The research mission of the department is conducted mainly through the graduate program. Internal and external funded research projects serve to:
1. Discover new knowledge, address technical problems, and develop new electrical/electronic technologies;
2. Provide the tools and resources which keep the faculty at the cutting edge of electrical engineering;
3. Provide financial support for graduate students and gifted undergraduate students; and
4. Improve the quality of life for citizens of Arkansas and the world.

The graduate program supports the undergraduate program by giving top undergraduate students access to research laboratories with state-of-the-art equipment and software. Topics covered in graduate courses often migrate into senior undergraduate technical elective courses and eventually into required undergraduate courses.

\section*{Departmental Service Mission}

Faculty, administrators, and staff work to provide the education necessary to establish the best foundation for electrical engineering students at all degree levels, and prepare them to be competitive local and national leaders, skillful at undertaking the current and future challenges facing our world. Everyone is encouraged to provide services to both the community and the profession. Hence, they are active in local, state, national, and international professional and service organizations, as well as public and private schools involving grades K -12

\section*{Degree Program Changes}

A student must meet all requirements of the degree program and is expected to stay informed concerning current regulations, policies, and program requirements in a chosen field of study. Changes made in the electrical engineering curriculum at a level beyond that at which a student is enrolled may become graduation requirements for that student. Changes made in the curriculum at a level lower than the one at which a student is enrolled are not normally required for that student. Students should consult their adviser for additional information.

\section*{Potential Minors}

Although electrical engineering students can pursue any minor they desire, there are several minors that require a minimal number of
extra courses, such as Computer Science, Mathematics, Physics, etc. Students are advised to review the specific rules pertaining to the minor of interest in the section of the UA Catalog of Studies corresponding to the department granting that minor.

\section*{Undergraduate Program in Electrical Engineering}

The Electrical Engineering Department maintains the following student learning outcomes:
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics,
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental, and economic factors,
3. An ability to communicate effectively with a range of audiences,
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts,
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives,
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions,
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

For more information visit www.abet.org (http://www.abet.org/).
The electrical engineering curriculum is designed to provide students with knowledge of scientific principles and methods of engineering analysis to form a solid foundation for a career in design, research and development, manufacturing and processing, measurement and characterization, or management. Students progressively build their design experience throughout the curriculum and demonstrate this ability in the senior electrical engineering design laboratories. The curriculum also introduces students to subjects in the humanities, social sciences, and ethics so they may better understand the interaction of technology and society.

The electrical engineering curriculum is divided into three phases. The first year concentrates on the development of a sound understanding of basic sciences and mathematics. The second and third years further develop scientific principles and cover the basic core of electrical engineering. The fourth year is composed primarily of senior-level elective courses. At this time, the students, in consultation with their advisers, may choose classes related to one or more of the major areas of electrical engineering detailed (e.g., analog and mixed-signal circuit design/test, biomedical, communications, computer hardware and digital circuit design, control systems, electronic packaging, embedded systems design, microwave and radar engineering, nanophotonics, nanotechnology/microelectronics/optoelectronics, pattern recognition and artificial intelligence, power electronics, and renewable energy and power). This final year permits the student to tailor a program suited to her or his individual career objectives. The graduation requirement in electrical engineering is 125 semester hours as given below.

\section*{Recommended Technical Studies}

Students in electrical engineering are required to complete 21 semester hours of technical electives of which a minimum of 9 semester hours must be 4000 - or 5000 -level electrical engineering elective courses. A student may select the remaining 12 semester hours from 4000- or 5000-level electrical engineering elective courses or upper-division technical courses in mathematics, engineering, and the sciences with the approval of an adviser. One of these courses may be an approved Math/Science Elective and another may be an approved Engineering Science Elective. History and social science courses taught by Math and Science departments are not eligible for technical elective credit. Not more than 6 semester hours total of ELEG 488 V and ELEG 400 VH may be credited toward technical electives. Students who have taken full-time co-op experiences under GNEG 3811, and whose grades in these courses were A or B, may get credit for not more than three hours of non-ELEG technical electives if the work performed is of comparable quality to a technical elective; consult with the Department Co-op Coordinator. Descriptions of all electrical engineering courses are in the Course Descriptions chapter of this Catalog of Studies. The schedule of technical electives offered in a given semester is determined the previous semester since the selection depends on a number of varying factors such as student interest in a particular topic, the importance of a particular technology for the student's professional career, and teaching faculty availability.

\section*{Electrical Engineering B.S.E.E. EightSemester Degree Program}

The following section contains the list of courses required for the Bachelor of Science in Electrical Engineering and a suggested eight-semester sequence. See the Eight-Semester Degree Policy (p. 67) for more details. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites.
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{First Year} & \multicolumn{2}{|r|}{Units} \\
\hline & Fall & Spring \\
\hline GNEG 1111 Introduction to Engineering I & 1 & \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) & 3 & \\
\hline MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\) & 4 & \\
\hline CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & 3 & \\
\hline Select one of the following (Satisfies General Education Outcome 4.2): & 3 & \\
\hline HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) & & \\
\hline HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) & & \\
\hline PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) & & \\
\hline GNEG 1121 Introduction to Engineering II & & 1 \\
\hline ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) & & 3 \\
\hline MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) & & 4 \\
\hline
\end{tabular}

PHYS 2054 University Physics I (ACTS
Equivalency \(=\) PHYS 2034) (Satisfies General
Education Outcome 3.4)
Sophomore Science Elective \({ }^{2}\)
Year Total:
14
\begin{tabular}{lr} 
Second Year & Fall \\
ELEG 2103 Electric Circuits I & 3 \\
ELEG 2101L Electric Circuits I Laboratory & 1 \\
MATH 2584 Elementary Differential Equations & 4 \\
PHYS 2074 University Physics II (ACTS & 4 \\
Equivalency = PHYS 2044 Lecture) & \\
Humanities Elective (Satisfies General Education & 3 \\
Outcome 3.2 \& 5.1) & \\
ELEG 2113 Electric Circuits II & \\
ELEG 2111L Electric Circuits II Laboratory & \\
CSCE 2004 Programming Foundations I & \\
MATH 2574 Calculus III (ACTS Equivalency = & \\
MATH 2603) & \\
ELEG 2904 Digital Design & \\
Year Total:
\end{tabular}
\begin{tabular}{lrr} 
Third Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
ELEG 3124 System \& Signal Analysis & 4 & \\
ELEG 3213 Electronics I & 3 & \\
ELEG 3211L Electronics I Laboratory & 1 & \\
ELEG 3924 Microprocessor Systems Design & 4 & \\
ELEG 3704 Applied Electromagnetics & 4 &
\end{tabular}

ELEG 3143 Probability \& Stochastic Processes
ELEG 3223 Electronics II
ELEG 3221L Electronics II Laboratory
ELEG 3304 Energy Systems
Social Sciences Elective (Satisfies General
Education Outcome 3.3 \& 4.1 \()^{4}\)
Math/Science/Technical Elective \({ }^{9}\)
Year Total:
16
\begin{tabular}{lr} 
Fourth Year & Fall \\
Engineering Science/Technical Elective \(^{5}\) & 3 \\
Two Electrical Engineering Technical Elective \(^{6}\) & 6 \\
ELEG 4063 Electrical Engineering Design I & 3 \\
Select one of the following: & 3
\end{tabular}

Select one of the following: 3
(ACTS Equivalency = ECON 2103)
ECON 2023 Principles of Microeconomics
(ACTS Equivalency = ECON 2203)
ECON 2143 Basic Economics: Theory and Practice
Electrical Engineering Technical Elective \({ }^{6}\)
ELEG 4071 Electrical Engineering Design II
(Satisfies General Education Outcome 6.1)
    Math Technical Elective or one of these 2000 level courses:
    MEEG 2013, MEEG 2303, MEEG 2403, CHEG 2313, or INEG 2413
    ELEG TECHNICAL ELECTIVES are defined as ELEG 4000 or ELEG
    5000 level courses. CSCE 4114, CSCE 4613, or CSCE 4233 are
    approved ELEG Technical Electives for students pursuing a dual
    ELEG/CSCE undergraduate degree. Not more than 6 hours may be
    ELEG 488 V or ELEG 400 VH courses.

7 The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023,
COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023,
COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, SOCI 2033. Note, courses cannot be counted twice in degree requirements.
8 The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003,
DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
9 MATH SCIENCE/TECHNICAL ELECTIVES: Any Engineering/ Science/Math Technical Elective, suggested classes
BIOL 1543/BIOL 1541L, CHEM 1123/CHEM 1121L, CHEM 3504, CHEM 3603, MATH 3083, MATH 4443, PHYS 3113, PHYS 3544, PHYS 3613, MEEG 2703 or STAT 3003.
10 TECHNICAL ELECTIVES are 3000 or above level courses in Math,
Engineering, or the sciences after the approval by ELEG advisor. CSCE 2014, Programming 2, CSCE 2214, Computer Organization, and SEVI 5213 Business Foundations for Entrepreneurs are allowable non-ELEG technical electives. Courses not eligible for technical elective credit include ELEG 3903, ELEG 3933 and any history courses in math and the sciences (e.g., MATH 3133).
Two Technical Elective \({ }^{10} \quad 6\)
Social Sciences Elective \({ }^{7}\) 3
Fine Arts Elective (Satisfies General Education 3
Outcome 3.1) \({ }^{8}\)
Year Total: 15 16

\section*{Total Units in Sequence:}

1 Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
2 CHEM 1123/CHEM 1121L or BIOL 1543/BIOL 1541L or BIOL 2213/BIOL 2211L, or PHYS 2094 or GEOS 1113/GEOS 1111L
3 The Humanities Elective courses that satisfy General Education Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013, HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or PHIL 2103C.
4 The Social Sciences Elective courses that satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

Math Technical Elective or one of these 2000 level courses: MEEG 2013, MEEG 2303, MEEG 2403, CHEG 2313, or INEG 2413 ELEG TECHNICAL ELECTIVES are defined as ELEG 4000 or ELEG 5000 level courses. CSCE 4114, CSCE 4613, or CSCE 4233 are approved ELEG Technical Electives for students pursuing a dual ELEG/CSCE undergraduate degree. Not more than 6 hours may be ELEG 488 V or ELEG 400VH courses.

Students should become very familiar with the Academic Regulations chapter for university requirements that apply to the electrical engineering program as well as the College of Engineering requirements (in particular
the "D rule" and the "Transfer of Credit" for courses taken at another institution). Students are required to complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections. In addition to these graduation requirements, candidates for an electrical engineering degree must have earned a grade-point average of no less than 2.00 on all ELEG courses.

\section*{Electrical Engineering Honors Program}

To graduate with Honors in electrical engineering, students must be a member of the Honors College, have a minimum cumulative GPA of 3.50, and complete a minimum of 12 hours of honors credit of which 6 hours must be Electrical Engineering Honors courses that include the following: ELEG 4063H Honors Electrical Engineering Design I, ELEG 4071H Honors Electrical Engineering Design II, and ELEG 400VH Honors Senior Thesis. Special problems credit hours (ELEG 488V) will not be counted in the requirement for graduation with Honors in Electrical Engineering.

\section*{Electrical Engineering Honors Courses:}

ELEG 3124H, ELEG 3143H, ELEG 3214H, ELEG 3224H, ELEG 3304H, ELEG 3704H, ELEG 3924H: Required ELEG junior courses with Honors section (all junior required courses include honors sections).

ELEG 4061H Honors Electrical Engineering Design I (Sp, Fa)
ELEG 4073H Honors Electrical Engineering Design II
ELEG 400VH Honors Senior Thesis (Sp, Su, Fa)
ELEG 4203H, ELEG 4233H, ELEG 4403H, ELEG 4503H, ELEG 4703H, ELEG 4783H, ELEG 4914H, ELEG 4963H: ELEG technical elective courses that have an Honors section
(Please check the offering of these Honors Sections for a particular semester).

ELEG 5000 or above: Any graduate level course.
Balda, Juan Carlos, Ph.D. (University of Natal), B.S. (Universidad Nacional del Sur), University Professor, 1989, 2013.
Chen, Zhong, Ph.D. (North Carolina State University), M.Eng. (National University of Singapore), B.S. (Zhejiang University), Assistant Professor, 2015.

Dix, Jeffrey, Ph.D., M.S., B.S.E.E., (University of Tennessee, Knoxville), Assistant Professor, 2018.
Du, Wei, Ph.D. (Institute of Semiconductors, Chinese Academy of
Science), B.S. (Peking University), Associate Professor, 2008, 2022.
El-Ghazaly, Samir M., Ph.D. (University of Texas at Austin), M.S., B.S. (Cairo University), Distinguished Professor, 2007.
El-Shenawee, Magda O., Ph.D. (University of Nebraska-Lincoln), M.S., B.S. (Assiut University, Egypt), Professor, 2001, 2010.

Farnell, Chris, Ph.D., M.S.E.E., B.S.E.E. (University of Arkansas), Research Assistant Professor, 2021.
Manasreh, Omar, Ph.D. (University of Arkansas), M.S. (University of Puerto Rico-Rio Piedras), B.S. (University of Jordan), Professor, 2003.
Mantooth, Alan, Ph.D. (Georgia Institute of Technology), M.S., B.S.
(University of Arkansas), Distinguished Professor, Twenty-First Century Chair in Mixed-Signal IC Design and CAD, 1998, 2011.
Martin, Terry W., Ph.D., M.S.E.E., B.S.E.E. (University of Arkansas), Professor, 1990, 2002.
McCann, Roy A., Ph.D. (University of Dayton), M.S.E.E., B.S.E.E. (University of Illinois), Professor, 2003, 2009.

Naseem, Hameed A., Ph.D., M.S. (Virginia Polytechnic State University), M.Sc. (Panjab University), University Professor, 1985.

Saunders, Robert F., M.S.E.E., M.S. (University of Arkansas), Instructor, 2012.

Song, Xiaoqing, Ph.D. (North Carolina State University), M.S., B.S.
(Beijing Institute of Technology), Assistant Professor, 2022.
Spiesshoefer, Silke, Ph.D., M.S.E.E., B.S.Ch.E. (University of Arkansas), Clinical Assistant Professor, 2014.
Ware, Morgan, Ph.D. (North Carolina State University), B.S. (Florida State University), Assistant Professor, 2005.
Wu, Jingxian, Ph.D. (University of Missouri-Columbia), M.S. (Tsinghua University), B.S. (Beijing University of Aeronautics and Astronautics), Associate Professor, 2008, 2013.
Yu, Fisher, Ph.D. (Arizona State University), M.S., B.S. (Peking
University), Associate Professor, 2008, 2014.
Zhao, Yue, Ph.D. (University of Nebraska-Lincoln), B.S. (Beijing
University), Assistant Professor, 2015.

\section*{Courses}

ELEG 2101L. Electric Circuits I Laboratory. 1 Hour.
Experimental investigation of the steady-state behavior of resistive circuits excited by DC sources and transient behavior of simple R, L, and C circuits. Topics include fundamental laws of circuit theory applied to resistive networks and time response functions of R-L and R-C circuits. Corequisite: ELEG 2103. (Typically offered: Fall and Summer)

\section*{ELEG 2103. Electric Circuits I. 3 Hours.}

Introduction to circuit variables, elements, and simple resistive circuits. Analysis techniques applied to resistive circuits. The concept of inductance, capacitance and mutual inductance. The natural and step responses of RL, RC, and RLC circuits. Corequisite: ELEG 2101L. Pre- or Corequisite: (MATH 2564 or MATH 2564C) and PHYS 2074. Prerequisite: PHYS 2054. (Typically offered: Fall and Summer)
ELEG 2111L. Electric Circuits II Laboratory. 1 Hour.
Experimental investigation of the steady-state behavior of circuits excited by sinusoidal sources. Topics include complex power, three-phase circuits, transformers, and resonance. Corequisite: ELEG 2113. (Typically offered: Spring and Summer)

\section*{ELEG 2113. Electric Circuits II. 3 Hours.}

Introduction to complex numbers. Sinusoidal steady-state analysis of electric circuits, active, reactive, apparent and complex power; balanced and unbalanced threephase circuits; mutual inductance; the use of the Laplace transform for electric circuit analysis and two-port networks. Corequisite: ELEG 2111L. Pre- or Corequisite: MATH 2584. Prerequisite: ELEG 2103, ELEG 2101L and PHYS 2074. (Typically offered: Spring and Summer)
ELEG 287V. Special Topics in Electrical Engineering. 1-4 Hour.
Consideration of current electrical engineering topics not covered in other courses. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

\section*{ELEG 2904. Digital Design. 4 Hours.}

To introduce students to modern logic concepts, problem solving and design principles, and vocabulary and philosophy of the digital world. Corequisite: Lab component. Prerequisite: Engineering major. (Typically offered: Fall) This course is cross-listed with CSCE 2114.
ELEG 3124. System \& Signal Analysis. 4 Hours.
Definition and description of signals and systems; analog, digital, continuousand discrete-time and frequency analysis of systems, Z- and Fourier Transforms, sampling and signal reconstruction, filter design and engineering applications. Preor Corequisite: MATH 2584. Corequisite: Lab component. Prerequisite: ELEG 2103 or ELEG 3903 or BMEG 2904. (Typically offered: Fall)

ELEG 3124H. Honors System \& Signal Analysis. 4 Hours.
Definition and description of signals and systems; analog, digital, continuousand discrete-time and frequency analysis of systems, Z- and Fourier Transforms, sampling and signal reconstruction, filter design and engineering applications. Preor Corequisite: MATH 2584. Corequisite: Lab component. Prerequisite: ELEG 2103 or ELEG 3903 or BMEG 2904. (Typically offered: Fall)
This course is equivalent to ELEG 3124.
ELEG 3143. Probability \& Stochastic Processes. 3 Hours.
Review of system analysis, probability, random variables, stochastic processes, auto correlation, power spectral density, systems with random inputs in the time and frequency domain, and applications. Prerequisite: ELEG 3124. Pre- or Corequisite: MATH 2574. (Typically offered: Spring)

ELEG 3143H. Honors Probability \& Stochastic Processes. 3 Hours.
Review of system analysis, probability, random variables, stochastic processes, auto correlation, power spectral density, systems with random inputs in the time and frequency domain, and applications. Pre- or Corequisite: ELEG 3124. (Typically offered: Spring)
This course is equivalent to ELEG 3143.
ELEG 3211L. Electronics I Laboratory. 1 Hour.
Experimental investigation into electronic circuit analysis concepts. Topics include: diode behavior and applications, zener diode regulator design, bipolar junction transistor biasing, BJT common-emitter amplifier design, and operational amplifier fundamentals. Corequisite: ELEG 3213. (Typically offered: Fall and Spring)

ELEG 3211M. Honors Electronics I Laboratory. 1 Hour.
Experimental investigation into electronic circuit analysis concepts. Topics include: diode behavior and applications, zener diode regulator design, bipolar junction transistor biasing, BJT common-emitter amplifier design, and operational amplifier fundamentals. Corequisite: ELEG 3213H. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ELEG 3211L.

\section*{ELEG 3213. Electronics I. 3 Hours.}

Introduction to electronic systems and signal processing, operational amplifiers, diodes, non-linear circuit applications, MOSFETS, and BJTs. Course has a lab component. Pre- or Corequisite: MATH 2574 and ELEG 2113. Corequisite: ELEG 3211L. Prerequisite: MATH 2584. (Typically offered: Fall and Spring)

\section*{ELEG 3213H. Honors Electronics I. 3 Hours.}

Introduction to electronic systems and signal processing, operational amplifiers, diodes, non-linear circuit applications, MOSFETS, and BJTs. Pre- or Corequisite: MATH 2574 and ELEG 2113. Corequisite: ELEG 3211M. Prerequisite: Honors standing and PHYS 2074. (Typically offered: Fall and Spring)
This course is equivalent to ELEG 3213.
ELEG 3221L. Electronics II Laboratory. 1 Hour.
Selected experiments to illustrate and complement topics covered in companion course ELEG 3223 - Electronics II Laboratory. Corequisite: ELEG 3223. (Typically offered: Spring)

\section*{ELEG 3221M. Honors Electronics II Laboratory. 1 Hour.}

Selected experiments to illustrate and complement topics covered in companion course ELEG 3223 - Electronics II Laboratory. Corequisite: ELEG 3223H. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to ELEG 3221L.
ELEG 3223. Electronics II. 3 Hours.
Differential pair amplifier, current mirrors, active loads, multistage amplifiers, amplifier frequency response, bode plots, Millers theorem, short circuit and open circuit time constant methods, feedback amplifiers, and stability of feedback amplifiers. Corequisite: ELEG 3221L. Prerequisite: ELEG 3213 and ELEG 2113. (Typically offered: Spring)

\section*{ELEG 3223H. Honors Electronics II. 3 Hours.}

Differential pair amplifier, current mirrors, active loads, multistage amplifiers, amplifier frequency response, bode plots, Millers theorem, short circuit and open circuit time constant methods, feedback amplifiers, and stability of feedback amplifiers. Corequisite: ELEG 3221M. Prerequisite: Honors standing, ELEG 3213 and MATH 2584. (Typically offered: Spring)
This course is equivalent to ELEG 3223.
ELEG 3304. Energy Systems. 4 Hours.
Steady state analysis of DC machines, transformers, induction machines and synchronous machines. Introduction to speed control of electric machines using power electronics. Corequisite: Lab component. Prerequisite: ELEG 2113. (Typically offered: Spring)

ELEG 3304H. Honors Energy Systems. 4 Hours.
Steady state analysis of DC machines, transformers, induction machines and synchronous machines. Introduction to speed control of electric machines using power electronics. Corequisite: Lab component. Prerequisite: ELEG 2113. (Typically offered: Spring)
This course is equivalent to ELEG 3304.

\section*{ELEG 3704. Applied Electromagnetics. 4 Hours.}

Analysis of transmission lines with sinusoidal and transient excitation. Development and use of the Smith Chart and methods of impedance matching. Vector analysis, static form of Maxwell's equations, electrostatics, and magnetostatics. Corequisite: Lab component. Pre- or Corequisite: PHYS 2074. Prerequisite: ELEG 2113 and MATH 2574. (Typically offered: Fall)

\section*{ELEG 3704H. Honors Applied Electromagnetics. 4 Hours.}

Analysis of transmission lines with sinusoidal and transient excitation. Development and use of the Smith Chart and methods of impedance matching. Vector analysis, static form of Maxwell's equations, electrostatics, and magnetostatics. Corequisite: Lab component. Pre- or Corequisite: PHYS 2074 and MATH 2574. Prerequisite: ELEG 2113. (Typically offered: Fall)
This course is equivalent to ELEG 3704.

\section*{ELEG 387V. Special Topics in Electrical Engineering. 1-4 Hour.}

Consideration of current electrical engineering topics not covered in other courses. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ELEG 3903. Electric Circuits and Machines. 3 Hours.}

Basic electrical principles and circuits; Introduction to sinusoidal steady-state analysis of electric circuits, active, reactive, and complex power; balanced threephase circuits; Steady-state analysis of electric machines and transformers. Introduction to power electronics for machine speed control and alternative energy sources. For engineering students other than those in electrical engineering.
Prerequisite: MATH 2564 and PHYS 2074. (Typically offered: Fall and Spring)

\section*{ELEG 3924. Microprocessor Systems Design. 4 Hours.}

Introduction to 8-bit microprocessors and their application. Microprocessor architecture and assembly language; interface devices; system design using microprocessors. Corequisite: Lab component. Pre- or Corequisite: ELEG 2904. (Typically offered: Fall)

ELEG 3924H. Honors Microprocessor Systems Design. 4 Hours.
Introduction to 8-bit microprocessors and their application. Microprocessor architecture and assembly language; interface devices; system design using microprocessors. Corequisite: Lab component. Prerequisite: ELEG 2904. (Typically offered: Fall)
This course is equivalent to ELEG 3924.
ELEG 3933. Circuits \& Electronics. 3 Hours.
Basic principles of electric and electronic circuits and devices. For engineering students who are not pursuing a degree in electrical engineering. Prerequisite: MATH 2584 and PHYS 2074. (Typically offered: Spring)

ELEG 400VH. Honors Senior Thesis. 1-3 Hour.
Honors senior thesis. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer)

ELEG 4063. Electrical Engineering Design I. 3 Hours.
Capstone design and application in electrical engineering. Prerequisite: ELEG 3223 and ELEG 3924. (Typically offered: Fall and Spring)

\section*{ELEG 4063H. Honors Electrical Engineering Design I. 3 Hours.}

Design and application in electrical engineering. Prerequisite: ELEG 3223 and
ELEG 3924. (Typically offered: Fall and Spring)
This course is equivalent to ELEG 4063.
ELEG 4071. Electrical Engineering Design II. 1 Hour.
Design and application in electrical engineering. Prerequisite: ELEG 4063. (Typically offered: Fall and Spring)

ELEG 4071H. Honors Electrical Engineering Design II. 1 Hour.
Design and application in electrical engineering. Prerequisite: ELEG 4063. (Typically offered: Fall and Spring)
This course is equivalent to ELEG 4071.
ELEG 4203. Semiconductor Devices. 3 Hours.
Crystal properties and growth of semiconductors, energy bands and charge carriers in semiconductors, excess carriers in semiconductors, analysis and design of \(p /\) n junctions, analysis and design of bipolar junction transistors, and analysis and design of field-effect transistors. Students may not receive credit for both ELEG 4203 and ELEG 5203. Prerequisite: MATH 2584 and ELEG 3213, or graduate standing. (Typically offered: Irregular)

\section*{ELEG 4203H. Honors Semiconductor Devices. 3 Hours.}

Crystal properties and growth of semiconductors, energy bands and charge carriers in semiconductors, excess carriers in semiconductors, analysis and design of \(p /\) n junctions, analysis and design of bipolar junction transistors, and analysis and design of field-effect transistors. Students may not receive credit for both ELEG 4203 and ELEG 5203. Prerequisite: MATH 2584 and ELEG 3213, or graduate standing. (Typically offered: Irregular)
This course is equivalent to ELEG 4203.

\section*{ELEG 4233. Introduction to Integrated Circuit Design. 3 Hours.}

Design and layout of large scale digital integrated circuits using CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design, and layout strategies for large scale CMOS circuits. Students may not receive credit for both ELEG 4233 and ELEG 5923. Prerequisite: ELEG 3213 or ELEG 3933 and ELEG 2904 or equivalent. (Typically offered: Fall)

\section*{ELEG 4243. Analog Integrated Circuits. 3 Hours.}

Theory and design techniques for linear and analog integrated circuits. Current mirrors, voltage to base emitter matching, active loads, compensation, level shifting, amplifier design techniques, circuit simulation using computer-assisted design programs. Prerequisite: ELEG 3223. (Typically offered: Irregular)

\section*{ELEG 4253L. Integrated Circuit Design Lab I. 3 Hours.}

This course will cover digital VLSI design and integrated circuit design tools. The course is structured with lectures. This course is offered to both senior undergraduate and graduate students. Students cannot get credit for both the undergraduate and graduate version of the course. Students cannot receive credit for both ELEG 4253L and ELEG 5253L. Prerequisite: ELEG 4233 or ELEG 5923. (Typically offered: Spring)

\section*{ELEG 4283. Mixed Signal Test Engineering I. 3 Hours.}

Overview of mixed signal testing, the test specification process, DC and parametric measurements, measurement accuracy, tester hardware, sampling theory, DSPbased testing, analog channel testing, digital channel testing. Prerequisite: Senior or graduate standing. (Typically offered: Irregular)

\section*{ELEG 4303. Introduction to Nanomaterials and Devices. 3 Hours.}

This course provides the students with an introduction to nanomaterials and devices. The students will be introduced to the quantization of energy levels in nanomaterials, growth of nanomaterials, electrical and optical properties, and devices based on these nanomaterials, such as tunneling resonant diodes, transistors, detector, and emitters. Graduate students will be given additional or different assignments. Graduate students will be expected to explore and demonstrate an understanding of the material with a greater level of depth and breadth than the undergraduates. Each group of students will have different expectations and grading systems. The instructor will prepare and distribute two distinct syllabi. Corequisite: ELEG 4203. Prerequisite: ELEG 3213 and PHYS 2074. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ELEG 4403. Control Systems. 3 Hours.}

Mathematical modeling of dynamic systems, stability analysis, control system architectures and sensor technologies. Time-domain and frequency-domain design of feedback control systems: lead, lag, PID compensators. Special topics in microprocessor implementation. Students may not receive credit for both ELEG 4403 and ELEG 5403. Prerequisite: ELEG 3124. (Typically offered: Irregular)
ELEG 4403H. Honors Control Systems. 3 Hours.
Mathematical modeling of dynamic systems, stability analysis, control system architectures and sensor technologies. Time-domain and frequency-domain design of feedback control systems: lead, lag, PID compensators. Special topics in microprocessor implementation. Students may not receive credit for both ELEG 4403 and ELEG 5403. Prerequisite: ELEG 3124. (Typically offered: Irregular)
ELEG 4413. Advanced Control Systems. 3 Hours.
A second course in linear control systems. Emphasis on multiple-input and multipleoutput systems: State-space analysis, similarity transformations, eigenvalue and eigenvector decomposition, stability in the sense of Lyapunov, controllability and observability, pole placement, quadratic optimization. Students may not receive credit for both ELEG 4413 and ELEG 5413. Prerequisite: ELEG 4403 or equivalent course. (Typically offered: Irregular)

\section*{ELEG 4423. Optimal Control. 3 Hours.}

Introductory theory of optimizing dynamic systems: Formulation of performance objectives; calculus of variations; linear quadratic optimal control; discrete-time optimization; robustness and frequency domain techniques; reinforcement learning and optimal adaptive control. Prerequisite: ELEG 4403. (Typically offered: Irregular)

\section*{ELEG 4463L. Control Systems Laboratory. 3 Hours.}

Experimental study of various control systems and components. The use of programmable logic controllers in the measurement of systems parameters, ladderlogic applications, process-control applications, and electromechanical systems. Prerequisite: ELEG 3924 and ELEG 3124. (Typically offered: Irregular)
ELEG 4503. Design of Advanced Electric Power Distribution Systems. 3 Hours. Design considerations of electric power distribution systems, including distribution transformer usage, distribution system protection implementation, primary and secondary networks design, applications of advanced equipment based on power electronics, and use of capacitors and voltage regulation. Students may not receive credit for both ELEG 4503 and ELEG 5503. Prerequisite: ELEG 3304. (Typically offered: Irregular)

\section*{ELEG 4513. Power and Energy Systems Analysis. 3 Hours.}

Modeling and analysis of electric power systems: Energy sources and conversion; load flow analysis; reference frame transformations; symmetrical and unsymmetrical fault conditions; load forecasting and economic dispatch. Students may not receive credit for both ELEG 4513 and ELEG 5513. Prerequisite: ELEG 2113. (Typically offered: Irregular)

ELEG 4533. Power Electronics and Motor Drives. 3 Hours.
Characteristics of Insulated Gate Bipolar Transistors (IGBTs), Silicon Carbide ( SiC ) MOSFETs, Gallium Nitride (GaN) devices, Design of driver and snubber circuits for IGBTs and SiC MOSFETs, and an introduction to electric motor drives. Students may not receive credit for both ELEG 4533 and ELEG 5533. Prerequisite: ELEG 3304 and ELEG 3223. (Typically offered: Irregular)

ELEG 4543. Introduction to Power Electronics. 3 Hours.
Presents basics of emerging areas in power electronics and a broad range of topics such as power switching devices, electric power conversion techniques and analysis, as well as their applications. Students may not receive credit for both ELEG 5543 and ELEG 4543. Prerequisite: ELEG 2113 and ELEG 3213. (Typically offered: Irregular)

\section*{ELEG 4553. Switch Mode Power Conversion. 3 Hours.}

Basic switching converter topologies: buck, boost, buck-boost, Cuk, flyback, resonant; pulse-width modulation; integrated circuit controllers; switching converter design case studies; SPICE analyses of switching converters; state-space averaging and linearization; and switching converter transfer functions. Prerequisite: ELEG 3223 and ELEG 3124. (Typically offered: Irregular)
ELEG 4563. EMI in Power Electronics Converters: Generation, Propagation and Mitigation. 3 Hours.
Concepts of electro-magnetic-interference issues in power electronics converters. Basic concepts of EMI measurement, modeling and mitigation, with a focus on conducted EMI in power electronics converters. The course is structured with lectures and a lab session. Students can not receive credit for both ELEG 4563 and ELEG 5563. Prerequisite: ELEG 2103 or equivalent and MATH 2574. (Typically offered: Irregular)

\section*{ELEG 4583. Programming for Power Electronics: DSPs. 3 Hours.}

This course will focus on the development of both theoretical and practical skills needed to design and implement controls for power electronic systems using a Digital Signal Processors (DSPs). The course is structured with lectures and utilizes a project-based approach. Students cannot receive credit for both ELEG 5583 and ELEG 4583. Prerequisite: Senior standing, ELEG 2904, ELEG 3924, and CSCE 2004. (Typically offered: Spring)

\section*{ELEG 4593. Programming for Power Electronics: FPGA. 3 Hours.}

This course will focus on the development of both theoretical and practical skills needed to design and implement controls for power electronic system using Field Programmable Gate Arrays (FPGAs). The course is structured with lectures and utilizes a project-based approach. Students cannot receive credit for both ELEG 5593 and ELEG 4593. Prerequisite: Senior standing, ELEG 2904, ELEG 3924 and CSCE 2004. (Typically offered: Spring)

ELEG 4603. Deterministic Digital Signal Processing System Design. 3 Hours. Design of Digital Signal Processing systems with deterministic inputs. Sampling, quantisizing, oversampling, ADC trade-offs, distortion, equalizers, anti-aliasing, coherency, frequency domain design, audio and video compression. Prerequisite: ELEG 3124. (Typically offered: Irregular)

\section*{ELEG 4623. Communication Systems. 3 Hours.}

Various modulation systems used in communications. AM and FM fundamentals, pulse modulation, signal to noise ratio, threshold in FM, the phase locked loop, matched filter detection, probability of error in PSK, FKS, and DPSK. The effects of quantization and thermal noise in digital systems. Information theory and coding. Students may not receive credit for both ELEG 4623 and ELEG 5663. Pre- or Corequisite: ELEG 3143. (Typically offered: Irregular)

\section*{ELEG 4703. Introduction to RF and Microwave Design. 3 Hours.}

An introduction to microwave design principles. Transmission lines, passive devices, networks, impedance matching, filters, dividers, and hybrids will be discussed in detail. Active microwave devices will also be introduced. In addition, the applications of this technology as it relates to radar and communications systems will be reviewed. Prerequisite: ELEG 3704. (Typically offered: Irregular)

ELEG 4783. Introduction to Antennas. 3 Hours.
Basic antenna types: small dipoles, half wave dipoles, image theory, monopoles, small loop antennas. Antenna arrays: array factor, uniformly excited equally spaced arrays, pattern multiplication principles, nonuniformly excited arrays, phased arrays. Use of MATLAB programming and mathematical techniques for antenna analysis and design. Emphasis will be on using simulation to visualize variety of antenna radiation patterns. Corequisite: Drill component. Prerequisite: ELEG 3704. (Typically offered: Irregular)

\section*{ELEG 4783H. Honors Introduction to Antennas. 3 Hours.}

Basic antenna types: small dipoles, half wave dipoles, image theory, monopoles, small loop antennas. Antenna arrays: array factor, uniformly excited equally spaced arrays, pattern multiplication principles, nonuniformly excited arrays, phased arrays. Use of MATLAB programming and mathematical techniques for antenna analysis and design. Emphasis will be on using simulation to visualize variety of antenna radiation patterns. Corequisite: Drill component. Prerequisite: ELEG 3704. (Typically offered: Irregular)
This course is equivalent to ELEG 4783.
ELEG 487V. Special Topics in Electrical Engineering. 1-3 Hour.
Consideration of current electrical engineering topics not covered in other courses. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
ELEG 488V. Special Problems. 1-3 Hour.
Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ELEG 4963. CPLD/FPGA Based System Design. 3 Hours.}

Field Programmable logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices.
Corequisite: Lab component. Prerequisite: ELEG 4914. (Typically offered: Irregular) This course is cross-listed with CSCE 4353.

\section*{ELEG 4983. Computer Architecture. 3 Hours.}

Design of a single board computer including basic computer organization, memory subsystem design, peripheral interfacing, DMA control, interrupt control, and bus organization. Prerequisite: ELEG 3924. (Typically offered: Irregular) This course is cross-listed with CSCE 4213.

\section*{Industrial Engineering (INEG)}

Chase E. Rainwater
Department Head
4207 Bell Engineering Center
479-575-6029
Email: ecer@uark.edu
Industrial Engineering Website (http://www.ineg.uark.edu/)
The mission of the industrial engineering department at the University of Arkansas is to be a nationally competitive, student-centered industrial engineering program serving Arkansas and the world through undergraduate and graduate studies and leading-edge research programs.

Industrial engineers are concerned with improving organized activity. The physical arrangement of people, equipment, and material significantly influences the effectiveness of any organization - whether the organization is industrial, governmental, or commercial.

Today's industrial engineers develop applications of new processing automation and control technology; install data processing systems,
performance measures and standards, job evaluation and wage and salary programs; research new products and product applications; devise ways to improve productivity through application of technology and human factors; select operating processes and methods to accomplish a given task using proper tools and equipment; design facilities, management systems, operations procedures, storage systems; improve allocation of resources, planning and control systems for distribution of goods and services, production, inventory, quality and plant maintenance; enhance plant environment and the quality of working life; evaluate reliability and quality performance; implement office systems, procedures, and policies; analyze complex business problems through operations research; conduct long-range organization studies, plant location surveys, system effectiveness studies; and study potential markets for goods and services, raw material sources, labor supply, energy resources, financing and taxes.

Industrial engineers integrate engineering skills with mathematics and computer science tools, providing systematic ways to maximize productivity and quality while minimizing time and cost.

Completion of the degree requirements provides graduates with the following learning outcomes:
- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- An ability to communicate effectively with a range of audiences
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The goal of the Industrial Engineering Undergraduate Program at the University of Arkansas is to prepare men and women for professional careers and graduate studies in Industrial Engineering. We provide a foundation in mathematics, science, humanities and social sciences, engineering science, and engineering design to produce Industrial Engineers with the intellectual, technical, and professional competence to develop, implement, and manage industrial engineering solutions to complex problems in industry, government, and society.

The program's objectives have been developed to address the needs of the industrial engineering constituencies and to be consistent with and supportive of the department's mission and programmatic goals. The IE program educational objectives represent and describe the expected accomplishments of graduates resulting from participation within the program within the first few years after graduation. The program's objectives have been developed to address the needs of departmental
constituencies and to be consistent with and support the mission and programmatic goals.

Within 3-5 years of graduation, graduates of the \(U\) of \(A\) undergraduate program in industrial engineering will have:
1. Successfully applied core industrial engineering knowledge and skills for industrial or public sector organizations.
2. Successfully pursued advanced professional degrees, graduate studies in industrial engineering, professional training, or engineering certification.
3. Demonstrated professional and intellectual growth as managers and leaders in industrial engineering, society, and their communities.

\section*{Requirements for B.S. in Industrial Engineering}

The total graduation requirement in industrial engineering is 123 hours. For further information please visit the departmental website (http:// www.ineg.uark.edu/).

\section*{Technical Electives}

The purpose of technical electives is to provide students with the opportunity to expand their education along lines of particular interest to them. Each student is responsible for their technical elective program. Students may seek specific advice on technical elective selections from their advisor. Courses satisfying technical elective requirements cannot fulfill more than one B.S.I.E. requirement.

A minimum of 12 credit hours from the approved technical elective course list must be taken to satisfy technical elective requirements for the B.S.I.E. At least 6 of these 12 credit hours must be chosen from INEG and/or OPAN courses. No more than 3 of these credits may be based in individual/ independent study, no more than 4 of these credits may be based in honors thesis (honors thesis courses offered by our department include: INEG 400VH, INEG 3812H, and INEG 4812H), and no more than 3 of these credits may be based in cooperative education.

\section*{Approved Technical Elective Course List 1. Any BENG, BIOL, BMEG, CHEG, CHEM, CVEG, CSCE, ELEG, GNEG, INEG, MATH, MEEG, OPAN, and PHYS course that is at the 3000 -level or above is approved.}

Exceptions are:
- CVEG 4513 is not approved.
- GNEG 3801 is not approved.
- GNEG 3811 is approved only if the student has completed at least three semesters of GNEG 3811.
- INEG 3313 is not approved.
- MATH 3013 and MATH 3133 are not approved.
- PHYS 3603 is not approved.
2. Students may count one of MATH 2574 and MATH 2584 as a technical elective.
3. Courses at the 3000-level or above that are explicitly listed (not part of a blanket statement like "... 3000-to- 4000-level ...") in the Catalog of Studies under Minors for Non-Business Students (http://catalog.uark.edu/ undergraduatecatalog/collegesandschools/sammwaltoncollegeofbusiness/ minors/) are approved.

Exception:
- ISYS 3393 is not approved if the student is also seeking technical elective credit for INEG 4683.
4. Courses at the 3000-level or above that are explicitly listed on the Sustainability Minor Courses (https://sustainability.uark.edu/academics/ minor.php) website under Natural, Managed, or Built Systems are approved.
5. Courses at the 3000-level or above that are explicitly listed in the Catalog of Studies in the Analytics group for the Data Analytics Minor (http://catalog.uark.edu/undergraduatecatalog/collegesandschools/ collegeofengineering/dataanalytics/) are approved.
6. Additional approved courses are EXSC 3153, EXSC 3353, and HNRC 4013H.

\section*{Industrial Engineering B.S.I.E. Eight-Semester Degree Program}

The following section contains the list of courses required for the Bachelor of Science in Industrial Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

Students are required to complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.
\begin{tabular}{|c|c|c|}
\hline \multirow[t]{2}{*}{First Year} & & Units \\
\hline & Fall & Spring \\
\hline GNEG 1111 Introduction to Engineering I & 1 & \\
\hline MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) \({ }^{1}\) & 4 & \\
\hline CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & 3 & \\
\hline ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1) \({ }^{1}\) & 3 & \\
\hline \multicolumn{3}{|l|}{General Education Outcome 4.2: \({ }^{1}\)} \\
\hline \multicolumn{3}{|l|}{HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)} \\
\hline \multicolumn{3}{|l|}{HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)} \\
\hline \multicolumn{3}{|l|}{PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)} \\
\hline \multicolumn{3}{|l|}{GNEG 1121 Introduction to Engineering II} \\
\hline \multicolumn{3}{|l|}{MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)} \\
\hline \multicolumn{3}{|l|}{\multirow[t]{2}{*}{ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2) \({ }^{1,2}\)}} \\
\hline & & \\
\hline BIOL 1543/1541L or CHEM 1123/1121L or GEOS 1113/1111L or PHYS 2074 & & 4 \\
\hline
\end{tabular}

PHYS 2054 University Physics I (ACTS
Equivalency \(=\) PHYS 2034) (Satisfies General
Education Outcome 3.4) \({ }^{1}\)
Year Total:
14
\begin{tabular}{lrr} 
Second Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
INEG 2001 Industrial Engineering Seminar & 1 & \\
INEG 2103 Introduction to Industrial Engineering & 3 & \\
INEG 2214 Computing Methods for Industrial & 4 & \\
Engineers I & 4 & \\
INEG 2314 Statistics for Industrial Engineers I & 3
\end{tabular}

MATH 2574 Calculus III (ACTS Equivalency = MATH 2603)
MATH 2574C Calculus III
MATH 2574H Honors Calculus III
MATH 2584C Elementary Differential Equations
MATH 2584H Honors Elementary Differential Equations
MATH 2603 Discrete Mathematics
MATH 3083 Linear Algebra
INEG 2223 Computing Methods for Industrial 3
Engineers II
INEG 2323 Probability and Stochastic Processes 3
for Industrial Engineers
INEG 2413 Engineering Economic Analysis 3
INEG 2613 Introduction to Operations Research 3
ACCT 2403 Accounting Fundamentals for Planning 3
and Control
Year Total: 15
\begin{tabular}{lrr} 
Third Year & Fall \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
INEG 3333 Statistics for Industrial Engineers II & 3 & \\
INEG 3443 Project Management & 3 & \\
INEG 3543 Facility Logistics & 3 \\
INEG 3624 Simulation & 4 \\
Select one of the following two options to satisfy & 3
\end{tabular}
INEG 3533 Transportation Logistics ..... 3
INEG 3714 Work Methods and Ergonomics ..... 4
INEG 3833 Introduction to Database Concepts for ..... 3
Industrial Engineers
satisfies General Education Outcomes 3.3 and 4.1. \({ }^{1}\)
Year Total: 16
Fourth Year

INEG 4433 Systems Engineering and Management
INEG 4913 Industrial Engineering Capstone
Experience I
Two Technical Electives 6
Social Sciences Elective - Choose a course that satisfies General Education Outcome 3.3. \({ }^{1}\)
INEG 4924 Industrial Engineering Capstone
Experience II (Satisfies General Education
Outcome 6.1) \({ }^{1}\)
Two Technical Electives
Fine Arts Elective - Choose a course that satisfies
General Education Outcome 3.1. \({ }^{1}\)
Humanities Elective - Choose a course that satisfies General Education Outcomes 3.2 and 5.1. \({ }^{1}\)

Year Total:

\section*{Total Units in Sequence:}
\({ }^{1}\) Students must complete the State Minimum Core requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fstateminimum\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3c \%2F1XG8924jwOx8pTIw8IWNAGp0s\%3D\&reserved=0) as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements (https://nam03.safelinks.protection.outlook.com/?url=https\%3A\%2F \%2Fnextcatalog.uark.edu\%2Fundergraduatecatalog\%2Fgened \%2Fgeneraleducation\%2F\&data=02\%7C01\%7Cagriffin\%40uark.edu \%7Ce4e632415f9b49eda9bf08d7f5c20b91\%7C79c742c4e61c4fa5be89a3c \%2BDWRVEfAqIMsYNX4KXEgX2JdEJJY7Go\%3D\&reserved=0), although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.
2 Students who enter the university with credit for ENGL 1023 are not required to complete ENGL 1033. Students who enter the university with exemption from ENGL 1023 are encouraged to take ENGL 1033.

\section*{Minor in Data Analytics}

Requirements for the minor in Data Analytics: The minor requires completion of 15-18 credits of coursework, including:
\begin{tabular}{lll}
\hline One course from Applied Statistics and Math Modeling group & \(3-4\) \\
\hline INEG 2314 & Statistics for Industrial Engineers I & \\
\hline INEG 2333 & Applied Probability and Statistics for Engineers II & \\
\hline INEG 3313 & Engineering Probability and Statistics & \\
\hline ELEG 3143 & Probability \& Stochastic Processes & \\
\hline STAT 2823 & Biostatistics \\
\hline STAT 3013 & Introduction to Probability & \\
\hline Two courses from Computing and Informatics group & \(6-8\) \\
\hline CSCE 2004 & Programming Foundations I & \\
\hline CSCE 2014 & Programming Foundations II & \\
\hline
\end{tabular}

\section*{Units}

Fall Spring
\begin{tabular}{|c|c|c|}
\hline INEG 4683 & Decision Support in Industrial Engineering & \\
\hline INEG 3833 & Introduction to Database Concepts for Industrial Engineers & \\
\hline ISYS 2263 & Principles of Information Systems & \\
\hline STAT 3003 & Statistical Methods & \\
\hline STAT 3001L & Statistics Methods Laboratory & \\
\hline Two courses from & the Analytics group & 6 \\
\hline \[
\begin{aligned}
& \text { CSCE } 4143 \\
& \text { or INEG } 41
\end{aligned}
\] & Data Mining Bata Mining & \\
\hline CSCE 4273 & Big Data Analytics and Management & \\
\hline CSCE 4613 & Artificial Intelligence & \\
\hline ECON 4743 & Introduction to Econometrics & \\
\hline ECON 4753 & Forecasting & \\
\hline INEG 4163 & Introduction to Modern Statistical Techniques for Industrial Applications & \\
\hline ISYS 4193 & Business Analytics and Visualization & \\
\hline ISYS 4293 & Business Intelligence & \\
\hline STAT 4333 & Analysis of Categorical Responses & \\
\hline Total Hours & & 5-18 \\
\hline
\end{tabular}

\section*{Minor in Engineering Management}

Requirements for the minor in Engineering Management: The student must be pursuing a bachelor of science degree from an engineering program accredited by the Engineering Accreditation Commission of ABET. The minor requires completion of 15-16 credit hours of coursework.
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|l|}{ch \(566 \mathrm{a} 80 \mathrm{~d} 1 \% 7 \mathrm{CO} \% 7 \mathrm{CO} 0 \% 7 \mathrm{C} 637248086069611524 \&\) Engineering Economic Analysis} \\
\hline INEG 3443 & Project Management & 3 \\
\hline INEG 4433 & Systems Engineering and Management & 3 \\
\hline Select one of th & following: & 3-4 \\
\hline INEG 2314 & Statistics for Industrial Engineers I & \\
\hline \begin{tabular}{l}
INEG 3313 \\
Select one of th
\end{tabular} & \begin{tabular}{l}
Engineering Probability and Statistics \\
 following:
\end{tabular} & \[
v_{3}^{2}
\] \\
\hline INEG 4123 & Global Engineering and Innovation & \\
\hline INEG 4253 & Leadership Principles and Practices & \\
\hline INEG 4323 & Quality Engineering and Management & \\
\hline INEG 4453 & Productivity Improvement & \\
\hline INEG 5433 & Cost Estimation Models & \\
\hline INEG 5443 & Decision Models & \\
\hline EMGT 5033 & Introduction to Engineering Management & \\
\hline
\end{tabular}

Cassady, Richard, Ph.D., M.S.I.S.E., B.S.I.S.E. (Virginia Polytechnic Institute and State University), University Professor, 2000, 2019. Chimka, Justin Robert, Ph.D., M.S.I.E., B.S.I.E. (University of Pittsburgh), Associate Professor, 2002, 2009.
Crisel, Brandon, M.S.I.E (University of Arkansas), M.S., B.S. (Arkansas State University), Instructor, 2022, Instructor, 2022.
Curry, Robert M., Ph.D. (Clemson University), M.S.I.S.E (University of Florida), B.S.I.E. (University of Arkansas), Assistant Professor, 2023.
Eksioglu, Burak, Ph.D. (University of Florida), M.S.E.B.M. (University of Warwick), B.S.I.E. (Bogazici University), Professor, 2019.
Eksioglu, Sandra, Ph.D. (University of Florida), M.S.E.M.S.
(Mediterranean Agronomic Institute of Chania), B.S.B.A. (University of

Tirana), Professor, Hefley Professor in Logistics and Entrepreneurship, 2019.

English, John R., Ph.D. (Oklahoma State University) P.E., M.S.O.R., B.S.E.E. (University of Arkansas), Professor, 1991, 1998.

Liao, Haitao, Ph.D., M.S., M.S.I.S.E. (Rutgers University), B.S.E.E. (Beijing Institute of Technology), Professor, John and Mary Lib White Endowed Systems Integration Chair, 2015.
Milburn, Ashlea R., Ph.D. (Georgia Institute of Technology), M.S.I.E. (Virginia Polytechnic Institute and State University), B.S.I.E. (University of Arkansas), Associate Professor, 2010, 2018.
Nachtmann, Heather, Ph.D., M.S.I.E., B.S.I.E. (University of Pittsburgh), Professor, Lillian P. Dyess Endowed Chair in Engineering, 2000, 2013.
Needy, Kim LaScola, Ph.D. (Wichita State University), P.E., M.S.I.E., B.S.I.E. (University of Pittsburgh), Professor, 2008.

Parnell, Gregory S., Ph.D. (Stanford University), M.S. (University of
Southern California), M.E.I.S.E. (University of Florida), B.S. (University of New York at Buffalo), Professor of Practice, 2013.
Paulus, David C., Ph.D. (Colorado State University), M.S.I.E., B.S.M.E. (University of Tennessee, Professor of Practice, 2023.
Pohl, Edward A., Ph.D., M.S.R.E. (University of Arizona), M.S.S.E. (Air Force Institute of Technology), M.S.E.M. (University of Dayton), B.S.E.E. (Boston University), Professor, Twenty-First Century Professorship in Engineering, 2004, 2013.
Pohl, Letitia, Ph.D. (University of Arkansas), M.S.S.E. (Air Force Institute of Technology), B.S.M.E. (Tulane University), Teaching Associate Professor, 2013, 2021.
Rainwater, Chase E., Ph.D. (University of Florida), B.S.I.E. (University of Arkansas), Professor, Twenty-First Century Professorship in Engineering, 2009, 2021.
Rossetti, Manuel D., Ph.D., P.E., M.S.I.E. (The Ohio State University), B.S.I.E. (University of Cincinnati), University Professor, 1999, 2022.

Schubert, Karl, Ph.D. (University of Arkansas), M.S.Ch.E. (University of Kentucky), B.S.Ch.E (University of Arkansas), Professor of Practice, 2016.

Sullivan, Kelly M., Ph.D. (University of Florida), M.S.I.E., B.S.I.E. (University of Arkansas), Associate Professor, 2012, 2019.
Vazquez, Alan, Ph.D. (University of Antwerp, Belgium), M.S. (Monterrey Institute of Technology, Mexico), B.S. (Autonomous University of Nuevo Leon, Mexico), Assistant Professor, 2022.
Zhang, Shengfan, Ph.D., M.I.E. (North Carolina State University), B.M. (Fudan University, Shanghai), Associate Professor, John L. Imhoff Chair in Industrial Engineering, 2011, 2020.

\section*{Courses}

INEG 2001. Industrial Engineering Seminar. 1 Hour.
Overview of the Department of Industrial Engineering: faculty and their backgrounds and interests, staff and the services they provide, facilities, curricular requirements, extracurricular opportunities, post-graduate opportunities. (Typically offered: Fall)

INEG 2103. Introduction to Industrial Engineering. 3 Hours.
Survey of industrial engineering problems. Application of key concepts from linear algebra and calculus in solving industrial engineering problems. Use of spreadsheets in solving industrial engineering problems. Visualization of common types of industrial engineering data. Exploration of the principles of effective teamwork and professionalism. Prerequisite: MATH 2445 or MATH 2514 or MATH 2554. (Typically offered: Fall and Spring)

INEG 2214. Computing Methods for Industrial Engineers I. 4 Hours. Introduction to programming and computing methods within the context of traditional industrial engineering problem solving. Students will be exposed to classic industrial engineering problem scenarios. Basic techniques within object-oriented programming, including designing classes, using objects, creating methods, looping and decision constructs, arrays, and file handling, will be used to facilitate solving these problems. Pre- or Corequisite: INEG 2103. (Typically offered: Fall and Spring)
INEG 2223. Computing Methods for Industrial Engineers II. 3 Hours.
A continuation of INEG 2214. Review of fundamental computing methods and exposure to advanced use of computing libraries. Developing and implementing algorithms using computing methods to solve illustrative and practical problems of interest to industrial engineers. Students will use existing computing libraries, data structures, and programming interfaces to implement software using problem-based learning. Prerequisite: INEG 2214. (Typically offered: Fall and Spring)
INEG 2314. Statistics for Industrial Engineers I. 4 Hours.
Applications to industrial engineering of descriptive statistics, single-population point and interval estimation, single-population hypothesis testing, two-population point and interval estimation, two-population hypothesis testing, goodness-of-fit testing, contingency table testing, linear regression, correlation, design of experiments, and analysis of variance. Introduction to statistical quality control. Use of modern statistical analysis software is emphasized. Prerequisite: INEG or DTSC students only. Pre- or corequisite: INEG 2103 or DASC 2594. (Typically offered: Fall and Spring)
INEG 2314H. Honors Statistics for Industrial Engineers I. 4 Hours.
Applications to industrial engineering of descriptive statistics, single-population point and interval estimation, single-population hypothesis testing, two-population point and interval estimation, two-population hypothesis testing, goodness-of-fit testing, contingency table testing, linear regression, correlation, design of experiments, and analysis of variance. Introduction to statistical quality control. Use of modern statistical analysis software is emphasized. Prerequisite: Honors standing, and INEG or DTSC students only. Pre- or corequisite: INEG 2103 or DASC 2594. (Typically offered: Fall and Spring)
This course is equivalent to INEG 2314.
INEG 2323. Probability and Stochastic Processes for Industrial Engineers. 3 Hours.
Development and analysis of industrial engineering applications of random experiments, random variables, renewal processes, Poisson processes, and Markov chains. Application areas include inventory, quality control, queueing, and reliability. Pre- or corequisite: INEG 2103 or DASC 2594. (Typically offered: Fall and Spring)
INEG 2333. Applied Probability and Statistics for Engineers II. 3 Hours.
Applications to engineering problems of two-population point and interval estimation, two-population hypothesis testing, linear regression, correlation, design of experiments, analysis of variance, and nonparametric statistics. Introduction to statistical quality control. Corequisite: Drill component. Prerequisite: INEG 2314. (Typically offered: Fall and Spring)

\section*{INEG 2413. Engineering Economic Analysis. 3 Hours.}

Economic aspects of engineering, including current economic problems and the treatment of estimates when evaluating alternative courses of action. Methods of selection and replacement of equipment and break-even points of operation; desirability of new processes or projects where asset life, rate of return on investment, and first, fixed, differential, marginal, and sunk costs must be considered. Corequisite: Drill component. Prerequisite: MATH 2445 or MATH 2514 or MATH 2554. (Typically offered: Fall and Spring)

\section*{INEG 2613. Introduction to Operations Research. 3 Hours.}

Introduction to modeling and analysis of deterministic operations design and planning problems using formal optimization algorithms and software. Identification and formulation of appropriate applications, linear programming, sensitivity, network flows/transportation/assignment problems, shortest paths, and integer linear programming. Prerequisite: INEG 2214 or DASC 1204. Pre- or corequisite: INEG 2103 or MATH 3083 or DASC 2594. (Typically offered: Fall and Spring)

INEG 3313. Engineering Probability and Statistics. 3 Hours.
Applications to engineering problems of data summary and presentation, random variables and probability distributions, point and interval estimation, hypothesis testing, linear regression, and design of experiments. Not for credit toward the Bachelor of Science in Industrial Engineering. Corequisite: Drill component. Prerequisite: MATH 2564. (Typically offered: Fall, Spring and Summer)

INEG 3333. Statistics for Industrial Engineers II. 3 Hours.
Introduction to model statistical learning, statistical learning beyond linear regression, data-driven anomaly detection and process monitoring, optimal sampling for data collection. Prerequisite: INEG 2223, INEG 2314 and INEG 2323. (Typically offered: Fall and Spring)

\section*{INEG 3443. Project Management. 3 Hours.}

Analysis of the strategic level of project management including planning, organizing, and staffing for successful project execution. Professional creativity, motivation, leadership, and ethics are also explored. At the tactical level, project selection, control, and systems management are analyzed. Systems development and decision support tools for project management are studied. (Typically offered: Fall and Spring)

\section*{INEG 3443H. Honors Project Management. 3 Hours.}

Analysis of the strategic level of project management including planning, organizing, and staffing for successful project execution. Professional creativity, motivation, leadership, and ethics are also explored. At the tactical level, project selection, control, and systems management are analyzed. Systems development and decision support tools for project management are studied. (Typically offered: Fall and Spring)
This course is equivalent to INEG 3443.

\section*{INEG 3513. Manufacturing Processes. 3 Hours.}

This course focuses on the manufacturing processes that impart geometry and properties to engineering materials including casting, metalworking, machining, joining, heat treatment, and polymer processes. Process selection and analysis, design-for-manufacturing principles, cost estimation, and selection of process parameters are covered. Lab component covers communication of manufacturing specifications via engineering drawings. Prerequisite: MEEG 2303. Corequisite: Lab component. (Typically offered: Spring)

INEG 3533. Transportation Logistics. 3 Hours.
This course introduces students to transportation and logistics systems, including the components of logistics system and their interactions. There is emphasis on quantitative models and techniques for the optimization and analysis of transportation and logistics systems. Topics covered include: an overview of logistics systems and modes of transportation; facility location analysis and network design; network flow and transportation modeling; and vehicle routing. Prerequisite: INEG 2613. Pre- or corequisite: INEG 2223. (Typically offered: Fall and Spring)

\section*{INEG 3543. Facility Logistics. 3 Hours.}

The design and analysis of efficient logistics systems at the facility level, with an emphasis on distribution facilities. Unit load, break bulk, crossdock and order fulfillment centers and their component systems and software. Automated and manual systems.Prerequisite: INEG 2413. Pre- or corequisite: INEG 2613. (Typically offered: Fall and Spring)

INEG 3553. Production Planning and Control. 3 Hours.
Strategy and competition, forecasting, aggregate planning, inventory control subject to known demand, inventory control subject to uncertain demand, supply chain management, push and pull production control systems, and operations scheduling. Prerequisite: INEG 2314 or STAT 3003. Pre- or corequisite: INEG 2613. (Typically offered: Fall and Spring)

INEG 3624. Simulation. 4 Hours.
The development and use of discrete-event simulation models for the analysis and design of systems found in manufacturing, distribution, and service contexts. Coverage includes conceptual modeling, model translation to computer form, statistical input models, random number generation and Monte Carlo methods, experimentation and statistical output analysis, and queuing analysis. Includes the use of modern computer simulation languages. Corequisite: Drill component. Prerequisite: (INEG 2223 or DASC 1204), INEG 2314 and INEG 2323. Pre- or Corequisite: INEG 2413. (Typically offered: Fall and Spring)

\section*{INEG 3624H. Honors Simulation. 4 Hours.}

The development and use of discrete-event simulation models for the analysis and design of systems found in manufacturing, distribution, and service contexts. Coverage includes conceptual modeling, model translation to computer form, statistical input models, random number generation and Monte Carlo methods, experimentation and statistical output analysis, and queuing analysis. Includes the use of modern computer simulation languages. Corequisite: Drill component. Prerequisite: (INEG 2223 or DASC 1204), INEG 2314, INEG 2323 and honors standing. Pre- or corequisite: INEG 2413. (Typically offered: Fall and Spring) This course is equivalent to INEG 3624.

\section*{INEG 3714. Work Methods and Ergonomics. 4 Hours.}

Ways of designing jobs, machines, operations and work environments so they are compatible with human capacities and limitations. Work methods topics include methods analysis, time studies, work sampling and learning curves. Cognitive and physical capabilities and limitations of humans are addressed through the study of human information processing, motor control theory, anthropometry, biomechanics, work physiology and manual material handling. Design of controls and displays, hand tools and workstations, along with work related musculoskeletal disorders. Laboratory required. Corequisite: Lab component. Prerequisite: INEG 2314. (Typically offered: Fall and Spring)

\section*{INEG 3833. Introduction to Database Concepts for Industrial Engineers. 3} Hours.
An introduction to the basic principles of database modeling and technologies for industrial engineers. Coverage includes analyzing user requirements, representing data using conceptual modeling techniques (e.g. UML, ERD), converting conceptual models to relational implementations via database design methodologies, extracting data via structured query language processing, and understanding the role of database technology in industrial engineering application areas, implementing database applications. Pre- or corequisite: INEG 2223. (Typically offered: Fall and Spring)

\section*{INEG 400VH. Honors Thesis. 1-3 Hour.}

For Honors College students majoring in Industrial Engineering only. Prerequisite: Honors college students only and instructor consent. (Typically offered: Fall, Spring and Summer)

INEG 410V. Special Topics in Industrial Engineering. 1-4 Hour.
Consideration of current industrial engineering topics not covered in other courses. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.
INEG 410VH. Honors Special Topics in Industrial Engineering. 1-3 Hour.
Consideration of current industrial engineering topics not covered in other courses. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.
This course is equivalent to INEG 410V.

INEG 411V. Individual Study in Industrial Engineering. 1-3 Hour.
Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer)
INEG 411VH. Honors Individual Study in Industrial Engineering. 1-3 Hour. Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: Instructor consent and honors candidacy. (Typically offered: Fall, Spring and Summer)
This course is equivalent to INEG 411V.
INEG 4123. Global Engineering and Innovation. 3 Hours.
This course provides engineering students a global perspective for design and innovation. Students explore various design thinking tools and techniques. Students apply engineering design and innovation techniques to create solutions that meet specified markets with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental and economic factors. Students also have the opportunity to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which considers the impact of the engineering solution in the global, economic, environmental, and social contexts. Prerequisite: Senior standing or instructor consent. (Typically offered: Irregular)

\section*{INEG 4143. Data Mining. 3 Hours.}

The course focuses on the principles, theory, design, and implementation of data mining algorithms for large-scale data. Topics include foundations of data mining; preprocessing; mining frequent patterns, associations and correlations; supervised learning including decision tree induction, naïve Bayesian classification, support vector machine, logistic regression, Bayesian network, and K-nearest neighbor learning; unsupervised learning including K-means clustering, hierarchical clustering, density-based clustering, and grid-based clustering; outlier analysis; graph mining; scalable and distributed data mining. Prerequisite: (INEG 2333 and INEG 2223) or (CSCE 2014 and INEG 3313) or (INEG 2314 and INEG 2223) or INEG 3333. (Typically offered: Fall)

\section*{INEG 4163. Introduction to Modern Statistical Techniques for Industrial Applications. 3 Hours.}

This application-oriented course is driven by real problems arising from industry and focuses on problem solving using both modern and classic statistical methods. For both senior undergraduate and graduate students, the main goal of this course is to provide a comprehensive introduction to those most popular statistical learning methods and tools (such as R and Apache Spark) which are widely used in industry today. Prerequisite: INEG 2333 or INEG 2314 or INEG 3333. (Typically offered: Spring)

\section*{INEG 4253. Leadership Principles and Practices. 3 Hours.}

The course is designed to expose students to multiple approaches to leadership in a wide variety of settings. Leadership styles, the knowledge areas and competencies expected of today's leaders, the challenges leaders face, the historical and philosophical foundations of leadership, the relationships among leadership theory, leadership practice, and the moral-ethical aspects of leadership are among the topics covered in the course. A number of respected regional, national, and international leaders share "lessons learned" in their leadership journeys. Plus, a number of highly regarded leadership books and case studies on leadership are read and discussed. Students may not receive credit for INEG 4253 and INEG 5253/ OMGT 5253. Prerequisite: Senior standing. (Typically offered: Fall)

INEG 4253H. Honors Leadership Principles and Practices. 3 Hours.
The course is designed to expose students to multiple approaches to leadership in a wide variety of settings. Leadership styles, the knowledge areas and competencies expected of today's leaders, the challenges leaders face, the historical and philosophical foundations of leadership, the relationships among leadership theory, leadership practice, and the moral-ethical aspects of leadership are among the topics covered in the course. A number of respected regional, national, and international leaders share "lessons learned" in their leadership journeys. Plus, a number of highly regarded leadership books and case studies on leadership are read and discussed. Students may not receive credit for INEG 4253 and INEG 5253/ OMGT 5253. Prerequisite: Honors standing and instructor consent. (Typically offered: Fall)
This course is equivalent to INEG 4253.
INEG 4323. Quality Engineering and Management. 3 Hours.
Provides the student with complete coverage of the functional area of "Quality Assurance" ranging from the need for such a function, how it works, techniques utilized, and managerial approaches for insuring its effectiveness. Prerequisite: INEG 2333 or INEG 2314. (Typically offered: Irregular)
INEG 4423. Advanced Engineering Economy. 3 Hours.
Preparation of feasibility studies, including cost estimation, risk and uncertainty, sensitivity analysis and decision making. Effects of taxes, depreciation and financing costs on cash flows. Prerequisite: INEG 2314 and INEG 2413. (Typically offered: Irregular)

\section*{INEG 4423H. Honors Advanced Engineering Economy. 3 Hours.}

Preparation of feasibility studies, including cost estimation, risk and uncertainty, sensitivity analysis and decision making. Effects of taxes, depreciation and financing costs on cash flows. Prerequisite: INEG 2314 and INEG 2413. (Typically offered: Irregular)
This course is equivalent to INEG 4423.

\section*{INEG 4433. Systems Engineering and Management. 3 Hours.}

Overview of the fundamental concepts underlying the management of engineering. Reviews the engineering decision process within the life cycle. Examines implementation of basic management functions in technical organizations and development of strategy tools within a complex organization. Prerequisite: INEG 2413. (Typically offered: Fall)
INEG 4433H. Honors Systems Engineering and Management. 3 Hours. Overview of the fundamental concepts underlying the management of engineering. Reviews the engineering decision process within the life cycle. Examines implementation of basic management functions in technical organizations and development of strategy tools within a complex organization. Prerequisite: INEG 2413. (Typically offered: Fall) This course is equivalent to INEG 4433.

\section*{INEG 4453. Productivity Improvement. 3 Hours.}

Analysis of common productivity problems. Development of skills required to diagnose problems; measure productivity; develop improvement strategies; and provide for the implementation and maintenance of productivity measurement and improvement systems. Prerequisite: Senior standing. (Typically offered: Irregular)

INEG 4683. Decision Support in Industrial Engineering. 3 Hours.
Reinforcing important computer programming methods using industrial engineeringbased applications. Students will utilize Microsoft Excel and Visual Basic for Applications to develop custom solutions to challenging industrial engineering problems. Emphasis on computational proficiency and computing productivity in a spreadsheet-based setting. Prerequisite: INEG 2214 and INEG 2314. (Typically offered: Fall)

\section*{INEG 4913. Industrial Engineering Capstone Experience I. 3 Hours.}

First semester of a two-semester, team-based project in support of a real-world industry partner organization. Learn about the industry partner organization and the relevant segment of that organization. Assess and evaluate the operations and performance of the system that needs to be improved, or detail the need for and the requirements of a new system. Communicate findings using reports and presentations. Prerequisite: INEG 2001, INEG 2103, INEG 3333, INEG 3443, INEG 3543 and INEG 3624. Pre- or corequisite: INEG 3533, INEG 3553, INEG 3714, INEG 3833 and INEG 4433. (Typically offered: Fall)

INEG 4924. Industrial Engineering Capstone Experience II. 4 Hours.
Second semester of a two-semester, team-based project in support of a real-world industry partner organization. Develop and assess recommendations for improving system performance, or develop the detailed design of a new system. Evaluate the potential impact of the project. Develop deliverables for the industry partner organization. Communicate findings using reports and presentations. Students must have successfully completed INEG 4913 in the immediate prior semester. Corequisite: Lab component. Prerequisite: INEG 3533, INEG 3553, INEG 3714, INEG 3833, INEG 4433 and INEG 4913. (Typically offered: Spring)

\section*{Mechanical Engineering (MEEG)}

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Department of Mechanical Engineering Website (http://mechanicalengineering.uark.edu)

The mechanical engineering program is designed to offer a high-quality course of instruction involving classroom, laboratory, and extracurricular activities that results in graduates who are qualified and prepared to meet the demands of a professional career in the present and future work place and be able to assume a responsible place of leadership in a complex technological society.

The mission of the department is three-fold:
- Teaching - To provide a high-quality educational experience for undergraduate and graduate students that enables them to become leaders in their chosen professions.
- Research - To create, explore, and develop innovations in engineering and science through undergraduate and graduate research.
- Service - To provide beneficial service to the local, state, national, and international industries and communities via educational, technical, entrepreneurial, and professional activities.

The courses offered in mechanical engineering provide the student with a broad understanding of fundamental scientific principles that serve as a background for many fields of specialization. The undergraduate curriculum is designed to stress basic engineering principles and to assist in developing creative thinking. Emphasis is placed on the science and art of designing machines and systems, of converting energy into useful forms, and developing a basic understanding of engineering mechanics.

Completion of the degree requirements provides graduates with the following learning outcomes and ability to:
- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
- Communicate effectively with a range of audiences;
- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions; and Student Graduation; and,
- Acquire and apply new knowledge as needed, using appropriate learning strategies.

The BSME Program Educational Objectives are to produce graduates who, within a few years of graduation, are expected to:
1. Contribute to the economic development of Arkansas and the world through the practice of Mechanical Engineering;
2. Meet or exceed the needs and expectations of mechanical engineering employers in industry, government, and private practice;
3. Engage in professional activities that promote the mechanical engineering profession and provide continuing self-development, and develop leadership potential;
4. Succeed in graduate study and research, if pursued; and
5. Become licensed professional engineers, if pursued.

\section*{Requirements for B.S. in Mechanical Engineering}

Requirements for the B.S.M.E.: The Bachelor of Science in Mechanical Engineering curriculum includes, in addition to the required 18 hours of history, government, fine arts/humanities/social science elective courses, a total of 12 hours of technical and science electives. A student must select all electives with the approval of his or her adviser. The fine arts/humanities/social science electives must be selected from the State Minimum Core (p. 81) in the Academic Regulations chapter for university requirements for the program. It is expected that technical and science electives will be chosen to provide a coherent program within one or more areas of specialization or options available to mechanical engineers. Traditional areas of specialization are available in mechanical systems, materials, and energy systems. Other areas include pre-medical, management, and aerospace.

The first-year curriculum is essentially the same as prescribed for all engineering freshmen. Students entering the mechanical engineering
program are required to take two, four hour laboratory based science electives. One of the four hour science electives must be PHYS 2074. The other four hour science elective must be chosen from one of the following:
\begin{tabular}{|c|c|c|}
\hline \begin{tabular}{l}
ASTR 2003 \\
\& ASTR 2001L
\end{tabular} & \begin{tabular}{l}
Survey of the Universe (ACTS Equivalency = PHSC 1204 Lecture) \\
and Survey of the Universe Laboratory (ACTS \\
Equivalency = PHSC 1204 Lab)
\end{tabular} & 4 \\
\hline \[
\begin{aligned}
& \text { BIOL } 1543 \\
& \text { \& BIOL 1541L }
\end{aligned}
\] & ```
Principles of Biology (ACTS Equivalency = BIOL
1014 Lecture)
and Principles of Biology Laboratory (ACTS
Equivalency = BIOL 1014 Lab)
``` & 4 \\
\hline \[
\begin{aligned}
& \text { BIOL } 2213 \\
& \text { \& BIOL } 2211 \mathrm{~L}
\end{aligned}
\] & ```
Human Physiology (ACTS Equivalency = BIOL
2414 Lecture)
and Human Physiology Laboratory (ACTS
Equivalency = BIOL 2414 Lab)
``` & 4 \\
\hline \begin{tabular}{l}
CHEM 1123 \\
\& CHEM 1121L
\end{tabular} & \begin{tabular}{l}
University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) \\
and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
\end{tabular} & 4 \\
\hline \begin{tabular}{l}
GEOS 1113 \\
\& GEOS 1111L
\end{tabular} & \[
\begin{aligned}
& \text { Physical Geology (ACTS Equivalency = GEOL } \\
& 1114 \text { Lecture) } \\
& \text { and Physical Geology Laboratory (ACTS } \\
& \text { Equivalency = GEOL } 1114 \text { Lab) }
\end{aligned}
\] & 4 \\
\hline PHYS 2094 & University Physics III & 4 \\
\hline PHYS 3544 & Optics & 4 \\
\hline \begin{tabular}{l}
PHYS 3613 \\
\& PHYS 361VL
\end{tabular} & Modern Physics and Modern Physics Laboratory & 4 \\
\hline
\end{tabular}

\section*{Fine Arts/Humanities/Social Science Electives}

Students must follow the University Core curriculum in selecting their history, government, fine arts, humanities, and social science electives. Each student in the College of Engineering is required to complete 18 semester hours in the humanities and social sciences.

The courses taken must include:
\begin{tabular}{|c|c|}
\hline HIST 2003 & History of the American People to 1877 (ACTS Equivalency = HIST 2113) \\
\hline or HIST 2013 & History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) \\
\hline or PLSC 2003 & American National Government (ACTS Equivalency = PLSC 2003) \\
\hline ECON 2143 & Basic Economics: Theory and Practice \\
\hline or ECON 2013 & Principles of Macroeconomics (ACTS Equivalency = ECON 2103) \\
\hline CLST 1003 & Introduction to Classical Studies: Greece \\
\hline \multicolumn{2}{|l|}{or CLST 1003HHonors Introduction to Classical Studies: Greece} \\
\hline or CLST 1013 & Introduction to Classical Studies: Rome \\
\hline or PHIL 2003 & \[
\begin{aligned}
& \text { Introduction to Philosophy (ACTS Equivalency = PHIL } \\
& \text { 1103) }
\end{aligned}
\] \\
\hline or PHIL 2103 & Introduction to Ethics (ACTS Equivalency \(=\) PHIL 1003) \\
\hline or PHIL 21036 & \[
\begin{aligned}
& \text { Introduction to Ethics (ACTS Equivalency = PHIL } \\
& \text { 1003) }
\end{aligned}
\] \\
\hline
\end{tabular}

The remaining three courses must be selected from an approved list. The humanities and social sciences chart from the State Minimum Core (p. 81) page should be used as a guide for selecting these courses.

\section*{Mechanical Engineering Concentration Electives}

The purpose of technical/science electives is to provide students with the opportunity to expand their education along lines of particular interest to them.

As part of the mechanical engineering curriculum, students are required to complete 12 hours of technical/science electives. These electives can be categorized into three groups: Mechanical Engineering Electives, Other Engineering Electives, and Science-Math Electives.
1. Mechanical Engineering Electives. All mechanical engineering courses at or above the 4000 level not already required in the BSME curriculum are acceptable. Special Project courses, MEEG 491V, are allowed as electives only after approval in advance by the department head.
2. Other Engineering Electives. The rules governing the selection of engineering electives are:
Engineering or Computer Science/Computer Engineering courses at or above the 3000 level not already required in the BSME curriculum are allowed as technical-science electives. Courses with content remedial to required courses are not allowed, and courses considered redundant to required courses are not allowed.
3. Science-Math Electives. The approved list of science and math courses accepted as technical-science electives is available HERE (https://mechanical-engineering.uark.edu/Academics/undergraduate-students/forms-and-resources/).

\section*{Mechanical Engineering B.S.M.E. Eight-Semester Degree Program}

The following section contains the list of courses required for the Bachelor of Science in Mechanical Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students interested in obtaining a sequencing schedule of courses may contact the Mechanical Engineering office.

Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program.

Either the science elective in the second semester of Year 1 or the science elective in the first semester of Year 2 must include PHYS 2074. Other science electives should be chosen from an approved list. See the mechanical engineering office.
\begin{tabular}{lrr} 
First Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
ENGL 1013 Composition I (ACTS Equivalency & 3 & \\
= ENGL 1013) (Satisfies General Education & & \\
\begin{tabular}{l} 
Outcome 1.1) \\
CHEM 1103 University Chemistry I (ACTS
\end{tabular} & 3 \\
Equivalency = CHEM 1414 Lecture) & 4 \\
MATH 2554 Calculus I (ACTS Equivalency & \\
\(=\) MATH 2405) (Satisfies General Education & 1 \\
\begin{tabular}{l} 
Outcome 2.1) \\
GNEG 1111 Introduction to Engineering I
\end{tabular} & \\
\begin{tabular}{l} 
Select one of the following (Satisfies General \\
Education Outcome 4.2):
\end{tabular} & 3
\end{tabular}

HIST 2003 History of the American People to
1877 (ACTS Equivalency = HIST 2113)
HIST 2013 History of the American People,
1877 to Present (ACTS Equivalency \(=\) HIST
2123)

PLSC 2003 American National Government
(ACTS Equivalency = PLSC 2003)
GNEG 1121 Introduction to Engineering II
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)
Freshman Science Elective (See Above) (Satisfies
General Education Outcome 3.4) \({ }^{2}\)
ENGL 1033 Technical Composition II (ACTS
Equivalency = ENGL 1023) (Satisfies General
Education Outcome 1.2)
PHYS 2054 University Physics I (ACTS
Equivalency = PHYS 2034)
Year Total: 14
\begin{tabular}{lrr} 
Second Year & Fall \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
MEEG 2101 Computer-aided Design & 1 & \\
Science Elective (See Note Above) & 4 & \\
MATH 2574 Calculus III (ACTS Equivalency = & 4 \\
MATH 2603) & \\
MEEG 2303 Introduction to Materials & 3 \\
MEEG 2003 Statics & 3
\end{tabular}

MATH 2584 Elementary Differential Equations
MEEG 2013 Dynamics
MEEG 2403 Thermodynamics
MEEG 2703 Computer Methods in Mechanical Engineering
MEEG 2103 Introduction to Machine Analysis
Year Total:
15
\begin{tabular}{lrr} 
Third Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
MEEG 3013 Mechanics of Materials & 3 & \\
MEEG 3113 Fundamentals of Vibrations & 3 & \\
MEEG 3202L Mechanical Engineering Laboratory I & 2 & \\
MEEG 3503 Mechanics of Fluids & 3 & \\
ELEG 3903 Electric Circuits and Machines & 3 & \\
ECON 2013 Principles of Macroeconomics (ACTS & 3 & \\
Equivalency = ECON 2103) (Satisfies General & & 2 \\
Education Outcome 3.3) & & 3 \\
or ECON 2143 Basic Economics: Theory and & & 3 \\
Practice & & 3 \\
MEEG 3212L Mechanical Engineering Laboratory & & 3 \\
II & & 3 \\
MEEG 4413 Heat Transfer & & 3 \\
MEEG 4103 Machine Element Design & & 3 \\
MEEG 3223 Introduction to Mechatronics & & \\
Technical/Science Elective & & \\
Humanities State Minimum Core Elective (Satisfies & & \\
General Education Outcomes 3.2 and 5.1): &
\end{tabular}


Greece
or CLST 1003H Honors Introduction to Classical
Studies: Greece
or CLST 1013 Introduction to Classical Studies

Equivalency = PHIL 1103)
or PHIL 2103 Introduction to Ethics (ACTS
(1003)
or PHIL 2103C Introduction to Ethics (ACTS
Equivalency = PHIL 1003)
Year Total: 17

General Education Outcome 3.1) \({ }^{3}\)
MEEG 4192 Creative Project Design II (Satisfies 2
General Education Outcome 6.1)
Two Technical/Science Elective

5 The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113,HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

\section*{B.S. in Mechanical Engineering with Aerospace Concentration}

Requirements for the B.S.M.E.: The Bachelor of Science in Mechanical Engineering curriculum includes, in addition to the required 18 hours of history, government, fine arts/humanities/social science elective courses, a total of 12 hours of technical and science electives. A student must select all electives with the approval of his or her adviser. The fine arts/humanities/social science electives must be selected from the State Minimum Core (p. 81) in the Academic Regulations chapter for university requirements for the program. It is expected that technical and science electives will be chosen to provide a coherent program within one or more areas of specialization or options available to mechanical engineers. Traditional areas of specialization are available in mechanical systems, materials, and energy systems. Other areas include pre-medical, management, and aerospace.

The first-year curriculum is essentially the same as prescribed for all engineering freshmen. Students entering the mechanical engineering program are required to take two, four hour laboratory based science electives. One of the four hour science electives must be PHYS 2074. The other four hour science elective must be chosen from one of the following:
\begin{tabular}{|c|c|c|}
\hline \begin{tabular}{l}
ASTR 2003 \\
\& ASTR 2001L
\end{tabular} & \begin{tabular}{l}
Survey of the Universe (ACTS Equivalency = PHSC 1204 Lecture) \\
and Survey of the Universe Laboratory (ACTS Equivalency = PHSC 1204 Lab)
\end{tabular} & 4 \\
\hline \begin{tabular}{l}
BIOL 1543 \\
\& BIOL 1541L
\end{tabular} & \begin{tabular}{l}
Principles of Biology (ACTS Equivalency \(=\mathrm{BIOL}\) 1014 Lecture) \\
and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)
\end{tabular} & 4 \\
\hline \begin{tabular}{l}
BIOL 2213 \\
\& BIOL 2211L
\end{tabular} & \begin{tabular}{l}
Human Physiology (ACTS Equivalency = BIOL 2414 Lecture) \\
and Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab)
\end{tabular} & 4 \\
\hline \begin{tabular}{l}
CHEM 1123 \\
\& CHEM 1121L
\end{tabular} & \begin{tabular}{l}
University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) \\
and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
\end{tabular} & 4 \\
\hline \begin{tabular}{l}
GEOS 1113 \\
\& GEOS 1111L
\end{tabular} & ```
Physical Geology (ACTS Equivalency = GEOL
1 1 1 4 \text { Lecture)}
and Physical Geology Laboratory (ACTS
Equivalency = GEOL 1114 Lab)
``` & 4 \\
\hline PHYS 2094 & University Physics III & 4 \\
\hline PHYS 3544 & Optics & 4 \\
\hline \begin{tabular}{l}
PHYS 3613 \\
\& PHYS 361VL
\end{tabular} & Modern Physics and Modern Physics Laboratory & 4 \\
\hline
\end{tabular}

\section*{Fine Arts/Humanities/Social Science Electives}

Students must follow the University Core curriculum in selecting their history, government, fine arts, humanities, and social science electives. Each student in the College of Engineering is required to complete 18 semester hours in the humanities and social sciences.

The courses taken must include:
\begin{tabular}{|c|c|}
\hline HIST 2003 & History of the American People to 1877 (ACTS Equivalency = HIST 2113) \\
\hline or HIST 2013 & History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) \\
\hline or PLSC 2003 & American National Government (ACTS Equivalency \(=\) PLSC 2003) \\
\hline ECON 2143 & Basic Economics: Theory and Practice \\
\hline or ECON 2013 & Principles of Macroeconomics (ACTS Equivalency = ECON 2103) \\
\hline CLST 1003 & Introduction to Classical Studies: Greece \\
\hline or CLST 1003H & HHonors Introduction to Classical Studies: Greece \\
\hline or CLST 1013 & Introduction to Classical Studies: Rome \\
\hline or PHIL 2003 & Introduction to Philosophy (ACTS Equivalency = PHIL 1103) \\
\hline or PHIL 2103 & Introduction to Ethics (ACTS Equivalency = PHIL 1003) \\
\hline or PHIL 2103C & Introduction to Ethics (ACTS Equivalency \(=\) PHIL 1003) \\
\hline
\end{tabular}

The remaining three courses must be selected from an approved list. The humanities and social sciences chart from the State Minimum Core (p. 81) page should be used as a guide for selecting these courses.

\section*{Requirements for Aerospace Concentration: The Aerospace} Concentration in Mechanical Engineering provides students an opportunity to concentrate on engineering and scientific issues associated with aircraft, spacecraft, and space exploration. The Aerospace Concentration consists of the 112-credit hour Mechanical Engineering B.S. core and 12 hours of specified elective courses.

Choose at least two of the following courses:
MEEG 4503 Introduction to Flight
MEEG 4523 Astronautics
MEEG 4433 Aerospace Propulsion
MEEG 5503 Advanced Fluid Dynamics I
MEEG 5533 Fundamentals of Aerodynamics
Choose an additional 6 hours from any of the above courses not yet 6 taken or any following technical elective:

MEEG 4903H Honors Mechanical Engineering Research
MEEG 491V Special Topics in Mechanical Engineering
MEEG 492V Individual Study in Mechanical Engineering
MEEG 5473 Radiation Heat Transfer
ASTR 4033 Astrophysics I: Stars and Planetary Systems
ASTR 4043 Astrophysics II: Galaxies and the Large-Scale Universe
GEOS 3213 Principles of Remote Sensing
SPAC 5033 Astrophysics I: Stars and Planetary Systems

\section*{B.S.M.E. with Aerospace Concentration Eight-Semester Plan}
\begin{tabular}{lrr} 
First Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
ENGL 1013 Composition I (ACTS Equivalency \(=\) & 3 & \\
ENGL 1013) & &
\end{tabular}
\begin{tabular}{|c|c|}
\hline \begin{tabular}{l}
CHEM 1103 University Chemistry I (ACTS \\
Equivalency = CHEM 1414 Lecture)
\end{tabular} & \\
\hline PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) & \\
\hline MATH 2554 Calculus I (ACTS Equivalency \(=\) MATH 2405) & \\
\hline GNEG 1111 Introduction to Engineering I & \\
\hline Select one of the following: & \\
\hline HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113) & \\
\hline HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123) & \\
\hline PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003) & \\
\hline GNEG 1121 Introduction to Engineering II & \\
\hline MATH 2564 Calculus II (ACTS Equivalency = MATH 2505) & \\
\hline ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) & \\
\hline Freshman Science Elective, select one of the following: & \\
\hline \begin{tabular}{l}
ASTR 2003 Survey of the Universe (ACTS \\
Equivalency = PHSC 1204 Lecture) \\
\& ASTR 2001L Survey of the Universe \\
Laboratory (ACTS Equivalency = PHSC 1204 \\
Lab)
\end{tabular} & \\
\hline \begin{tabular}{l}
BIOL 1543 Principles of Biology (ACTS \\
Equivalency = BIOL 1014 Lecture) \\
\& BIOL 2211L Human Physiology Laboratory \\
(ACTS Equivalency = BIOL 2414 Lab)
\end{tabular} & \\
\hline \begin{tabular}{l}
BIOL 2213 Human Physiology (ACTS \\
Equivalency = BIOL 2414 Lecture) \\
\& BIOL 2211L Human Physiology Laboratory \\
(ACTS Equivalency = BIOL 2414 Lab)
\end{tabular} & \\
\hline \begin{tabular}{l}
CHEM 1123 University Chemistry II (ACTS \\
Equivalency = CHEM 1424 Lecture) \\
\& CHEM 1121L University Chemistry II \\
Laboratory (ACTS Equivalency = CHEM 1424 \\
Lab)
\end{tabular} & \\
\hline \begin{tabular}{l}
GEOS 1113 Physical Geology (ACTS \\
Equivalency = GEOL 1114 Lecture) \\
\& GEOS 1111L Physical Geology Laboratory \\
(ACTS Equivalency = GEOL 1114 Lab)
\end{tabular} & \\
\hline PHYS 2094 University Physics III & \\
\hline PHYS 3544 Optics & \\
\hline Year Total: & 15 \\
\hline
\end{tabular}
\begin{tabular}{lrr} 
Second Year & Fall & \begin{tabular}{r} 
Units \\
Spring
\end{tabular} \\
MATH 2574 Calculus III (ACTS Equivalency = & 4 & \\
MATH 2603) & 4 & \\
PHYS 2074 University Physics II (ACTS & & 3 \\
Equivalency = PHYS 2044 Lecture) & 1 \\
MEEG 2003 Statics & 3
\end{tabular}
\begin{tabular}{lrr} 
MATH 2584 Elementary Differential Equations & & 4 \\
MEEG 2013 Dynamics & & 3 \\
MEEG 2103 Introduction to Machine Analysis & & 3 \\
MEEG 2403 Thermodynamics & & 3 \\
MEEG 2703 Computer Methods in Mechanical & & \\
Engineering & & 16 \\
Year Total: & & Units \\
& & Fall \\
Spring
\end{tabular}
Fourth Year \(\quad\) Fall \begin{tabular}{r} 
Units \\
Spring
\end{tabular}
MEEG 4182 Creative Project Design I ..... 2
MEEG 4132 Professional Engineering Practices ..... 2
MEEG 4202L Mechanical Engineering Laboratory ..... 2

III
MEEG 4483 Thermal Systems Analysis and ..... 3
Design
Fine Arts Elective (from University Core list) ..... 3
Aerospace Technical Science Elective ..... 3
MEEG 4192 Creative Project Design II ..... 2
Social Science Elective (from University Core List) ..... 3
Social Science Elective (from University Core List) ..... 3
Aerospace Technical Science Elective ..... 3
Aerospace Technical Science Elective ..... 3

Almahakeri, Mohamed, Ph.D., M.S.M.E. (Queen's University), Teaching Assistant Professor, 2020.
Davis, James Allen, Ph.D., M.S.M.E., B.S.M.E. (University of Arkansas), Teaching Assistant Professor, 1997, 2018.
Hamilton, John H., M.S., B.S. (University of Arkansas), Instructor, 2002. Hu, Han, Ph.D. (Drexel University), Assistant Professor, 2019, . Huang, Po-Hao Adam, Ph.D., M.S., B.S. (University of California-Los Angeles), Associate Professor, 2006, 2012.

Huitink, David, Ph.D., M.S.M.E., B.S.M.E. (Texas A\&M University), Associate Professor, 2016, 2022.
Jensen, David C., Ph.D., M.S., B.S. (Oregon State University), Associate Professor, 2012, 2018.
Leylek, Jim, Ph.D. (University of Illinois-Urbana-Champaign), M.S., B.S. (University of Illinois at Chicago), Professor, 2011.
Meng, Xiangbo, Ph.D. (University of Western Ontario), M.S.E.E. (China University of Petroleum), B.S.C.E. (Northwestern University), Associate Professor, 2016, 2022.
Millett, Paul, Ph.D., M.S. (University of Arkansas), B.E. (Vanderbilt University), Associate Professor, Twenty-First Century Professor, 2013, 2019.

Nair, Arun, Ph.D. (Virginia Polytechnic State University), M.S. (Colorado State University), B.T. (Mahatma Gandhi University), Associate Professor, 2013, 2019.
Nutter, Darin W., Ph.D. (Texas A\&M University), M.S.M.E., B.S.M.E. (Oklahoma State University), Professor, Twenty-First Century Leadership Chair in Engineering, 1994, 2012.
Roberts, Monty, M.S., B.S. (University of Arkansas), Instructor, 2011.
Roe, Larry, Ph.D. (University of Florida), M.S., B.S.M.E. (University of Mississippi), Associate Professor, 1994, 2000.
Shou, Wan, Ph.D. (Missouri University of Science and Technology), M.S.M.E. (University of Louisiana at Lafayette), B.E. (Tianjin Polytechnic University), Assistant Professor, 2021.
Tung, Steve, Ph.D., M.S.M.E. (University of Houston), B.S.M.E. (National Taiwan University), Professor, 2000, 2013.
Walter, Keith D., Ph.D., M.S., B.S. (Clemson University), Professor, Twenty-First Century Professorship, 2021.
Walters, D. Keith, Ph.D., M.S.M.E., B.S.M.E. (Clemson University), Professor, 2021.
Wejinya, Uchechukwu C., Ph.D., M.S., B.S. (Michigan State University), Associate Professor, Twenty-First Century Professor, 2008, 2014.
Zhou, Wenchao, Ph.D. (Georgia Institute of Technology), M.S.M.E. (Xi'an Jiaotong University, Xi'an, China), B.S.M.E. (Huazhong University of Science and Technology, Wuhan, China), Associate Professor, 2014, 2020.

Zou, Min, Ph.D., M.S.M.E. (Georgia Institute of Technology), M.S.A.E., B.S.A.E. (Northwestern Polytechnical University), Professor, Twenty-First Century Chair in Materials, Manufacturing and Integrated Systems, 2003, 2013.

\section*{Courses}

MEEG 2003. Statics. 3 Hours.
Equilibrium and resultants of force systems in a plane and in space; analysis of structures, friction, centroids, moments of inertia, and virtual work method. Methods of analysis are emphasized. Corequisite: Drill component. Pre- or Corequisite: MATH 2574 or MATH 2574C. Prerequisite: PHYS 2054. (Typically offered: Fall, Spring and Summer)

\section*{MEEG 2013. Dynamics. 3 Hours.}

Kinematics and kinetics of particle and of rigid bodies; work and energy; impulse and momentum, and special topics. Corequisite: Drill component. Prerequisite: MEEG 2003 and MATH 2574. (Typically offered: Fall, Spring and Summer)

MEEG 2101. Computer-aided Design. 1 Hour.
The concept and application of solid-modeling, based on SolidWorks ComputerAided Design (CAD) software suite, are introduced in this course. They include sketches, parts modeling, assembly of parts, and drawing documentation. Prerequisite: GNEG 1121 or GNEG 1121H or GNEG 1103. (Typically offered: Fall and Spring)

MEEG 2103. Introduction to Machine Analysis. 3 Hours.
Introduction to kinematics and kinetics of mechanisms, static and dynamic forces, gears and cam design and analysis. Recitation three hours per week and drill one hour per week. Corequisite: Drill component. Pre- or Corequisite: MEEG 2013.
Prerequisite: PHYS 2054 and MEEG 2101. (Typically offered: Spring and Summer)

\section*{MEEG 2303. Introduction to Materials. 3 Hours.}

A study of chemical, physical, and electrical properties of materials using fundamental atomistic approach. The materials of interest are: metals, polymers, ceramics, and composites. The interactive relationship between structure, properties, and processing of materials will be emphasized. For various engineering applications. Corequisite: Drill component. Prerequisite: MATH 2554, PHYS 2054 and CHEM 1103. (Typically offered: Fall and Spring)

\section*{MEEG 2403. Thermodynamics. 3 Hours.}

A study of the 1st and 2nd laws of thermodynamics. Availability of energy, properties of liquids, gases, and vapors; nonflow and flow processes. Recitation 3 hours, drill 2 hours per week. Corequisite: Drill component. Prerequisite: PHYS 2054 and MATH 2564. (Typically offered: Fall, Spring and Summer)
MEEG 2703. Computer Methods in Mechanical Engineering. 3 Hours. Use of computers and programming for solving engineering problems. Basic numerical methods including errors, equation solution, matrices, optimization, regression, integration, and differential equations. Corequisite: Drill component. Preor Corequisite: MATH 2584. (Typically offered: Spring and Summer)

\section*{MEEG 3013. Mechanics of Materials. 3 Hours.}

Stress and deformation of members in tension, compression, torsion, and bending, and the design of these members. Columns, statically indeterminate beams, and simple connections. Corequisite: Drill component. Prerequisite: MEEG 2003. (Typically offered: Fall, Spring and Summer)

\section*{MEEG 3013H. Honors Mechanics of Materials. 3 Hours.}

Stress and deformation of members in tension, compression, torsion, and bending, and the design of these members. Columns, statically indeterminate beams, and simple connections. Corequisite: Drill component. Prerequisite: MEEG 2003 and honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MEEG 3013.
MEEG 3113. Fundamentals of Vibrations. 3 Hours.
Time and frequency domain mathematical techniques for linear system vibrations are reviewed. Undamped system and viscously damped systems are analyzed. Equations of motion of single and multiple degrees-of-freedom systems are studied. Vibration of multi-degree-of-freedom systems are analyzed using modal analysis and modal summation methods. Eigenvalue problems as related vibrations are studied. Corequisite: Drill component. Prerequisite: MEEG 2103, MATH 2584 or MATH 2584C, MEEG 2703, and MEEG 2013. (Typically offered: Fall and Spring)

\section*{MEEG 3202L. Mechanical Engineering Laboratory I. 2 Hours.}

Introduction to measurement, uncertainty, data acquisition, and instrumentation with an emphasis in materials and manufacturing. Corequisite: Drill component. Pre- or Corequisite: MEEG 3013 and ELEG 3903. Prerequisite: MEEG 2303 and PHYS 2074. (Typically offered: Fall and Spring)

\section*{MEEG 3212L. Mechanical Engineering Laboratory II. 2 Hours.}

Design and implementation of measurements, fabrication processes, data acquisition, and data analysis with emphasis in mechanical and fluid systems. Corequisite: Drill component. Prerequisite: MEEG 3202L, MEEG 3503 and MEEG 3113. (Typically offered: Fall and Spring)
MEEG 3223. Introduction to Mechatronics. 3 Hours.
This course is an introduction to design and control the mechatronic system, which requires integration of the mechanical and electrical knowledge within a unified framework. The topics covered in this course include basic electronics, diodes, transistors, power amplifiers, digital logic, operation amplifier, motor design, encoder, and programming in Arduino. Corequisite: Lab component. Prerequisite: MEEG 3202L. (Typically offered: Spring)

\section*{MEEG 3503. Mechanics of Fluids. 3 Hours.}

A study of fluids including fluid properties, pressure, and flow fields utilizing conservation of mass, energy, and momentum principles. Prerequisite: MEEG 2403 or CHEG 2313. Pre- or Corequisite: MATH 2584. (Typically offered: Fall and Summer)

\section*{MEEG 4003. Intermediate Dynamics. 3 Hours.}

Review of central-force motion of spacecraft, use of rotating reference frames, Coriolis acceleration. Kinematics of rigid bodies in 3-D space: velocities and accelerations in different moving reference frames, addition theorem of angular accelerations. Kinetics of rigid bodies in 3-D space: eigenvalues and eigenvectors of inertia matrices, momentum and kinetic energy of a rigid body in 3-D motion, Euler's equations of motion; precession, nutation, and spin of a gyroscope; forced steady precession, torque free steady precession, space cone, and body cone. Prerequisite: MEEG 2013. (Typically offered: Irregular)

MEEG 4023. Composite Materials: Analysis and Design. 3 Hours.
A study of fibrous composite materials with emphasis on mechanical behavior, synthesis, and application. Topics include macro- and micromechanical analysis lamina, lamina theory, failure analysis in design, and manufacturing techniques. Prerequisite: MEEG 3013. (Typically offered: Irregular)

\section*{MEEG 4103. Machine Element Design. 3 Hours.}

This course introduces the static failure theories and fatigue failure theories, and how each of the theories can be applied in practical engineering problems in supporting the selection and design of machine elements. This course also introduces key design concepts, design principles, design process, and design guidelines for four commonly-used machine elements: spring, gear, bearing and shaft. Pre- or Corequisite: MEEG 3113. Prerequisite: MEEG 3013. (Typically offered: Fall, Spring and Summer)

\section*{MEEG 4103H. Honors Machine Element Design. 3 Hours}

This course introduces the static failure theories and fatigue failure theories, and how each of the theories can be applied in practical engineering problems in supporting the selection and design of machine elements. This course also introduces key design concepts, design principles, design process, and design guidelines for four commonly-used machine elements: spring, gear, bearing and shaft. Advanced project required of honors students. Advanced project required. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MEEG 4103.

\section*{MEEG 4123. Finite Element Methods I. 3 Hours.}

Introduction to the use of the finite element method in mechanical engineering analysis and design. Use of commercial software to solve thermal and mechanical problems. Pre- or Corequisite: MEEG 3013 and MEEG 4413. (Typically offered: Irregular)

MEEG 4132. Professional Engineering Practices. 2 Hours.
Design proposal preparation, design codes, professional ethics, engineering economics, and the role of the engineer in society. Pre- or Corequisite: MEEG 4103 or MEEG 4483. (Typically offered: Fall and Spring)

\section*{MEEG 4143. Design for Safety. 3 Hours.}

This course provides an overview of safety engineering and a framework from which the students can evaluate and develop mechanical and thermal systems from a safety perspective. Pre- or Corequisite: MEEG 4413. Prerequisite: MEEG 3013. (Typically offered: Irregular)

\section*{MEEG 4153. Fundamentals of Mechanical Design. 3 Hours.}

This class is designed to provide engineering students with a head start in industry as design engineers or working in an engineering related function. The course contents cover machine design and analysis experiences as related to working in industry and performing consulting work. Major topics include the design process, design procedures, fasteners, general design and numerous consulting experiences. A concept design exercise and two special design projects will be assigned to the students as homework. Prerequisite: MEEG 4103. (Typically offered: Fall)

MEEG 4173. Model-Based Systems Design and Analysis. 3 Hours.
This course provides students with an introduction into the two main approaches to understanding and designing complex engineered systems. First, the course covers the unique technical challenge of systems engineering and design of systems.
Second, the course covers concepts, methods and tools related to "model-based systems design." This covers formal modeling of the information content of complex systems. The third portion of the course will focus on modeling the complex behavior of the systems. This is often described as dynamical systems modeling. Students will utilize the methods and tools presented in class to model a complex engineered system of their choice (with instructor approval). The classes will alternate between presenting modeling methods to the students and students demonstrating their system to the class utilizing those methods. Students may not receive credit for both MEEG 4173 and MEEG 5173. Prerequisite: MEEG 4103 or Instructor consent. (Typically offered: Spring Even Years)

\section*{MEEG 4182. Creative Project Design I. 2 Hours.}

Students will select a capstone design project, and each student group will prepare a formal written proposal on their project for presentation to a panel of judges. This group project will be carried to completion in MEEG 4192. Corequisite: MEEG 4483. Prerequisite: MEEG 4103 and MEEG 3212L. (Typically offered: Fall and Spring)

\section*{MEEG 4192. Creative Project Design II. 2 Hours.}

Students choose their capstone project from a list of approved engineering problems. During the course of two semesters, students will learn and apply the design process along with project management skills to deliver the solution on time and on budget as a team. For the first semester (CP1) the team will focus on design of the best solution and development of a complete engineering package necessary to move forward. In the final semester (CP2) the team will implement and test the performance of their solution. Prerequisite: MEEG 4182. (Typically offered: Fall and Spring)

\section*{MEEG 4202L. Mechanical Engineering Laboratory III. 2 Hours.}

Application of measurement techniques to mechanical engineering problems which emphasize mechanical and thermal systems. Corequisite: Drill component. Pre- or corequisite: MEEG 4483. Prerequisite: MEEG 3212L and MEEG 4103. (Typically offered: Fall, Spring and Summer)

\section*{MEEG 4213. Control of Mechanical Systems. 3 Hours.}

Mathematical modeling for feedback control of dynamic mechanical systems with design techniques using LaPlace transforms, state variables, root locus, frequency analysis, and criteria for performance and stability. Prerequisite: MEEG 3113. (Typically offered: Irregular)

MEEG 4233. Microprocessors in Mechanical Engineering I: Electromechanical Systems. 3 Hours.
Microcomputer architectural, programming, and interfacing. Smart product design (microprocessor-based design). Control of DC and stepper motors and interfacing to sensors. Applications to robotics and real-time control. Mobile robot project. Digital and analog electronics are reviewed where required. Prerequisite: ELEG 3903. (Typically offered: Irregular)

\section*{MEEG 4253. Introduction to Robotics. 3 Hours.}

This course serves as an introduction to robotics. The course covers the historical development of robotics as a field, and as mechatronic systems, the importance of integrating sensors, actuators and end-effectors. Topics covered in this course will include but not limited to the following: mathematical modeling of robots, rigid motions and homogeneous transformation, forward/inverse kinematics, and velocity kinematics. Prerequisite: MEEG 2703, MEEG 3113 and instructor consent. (Typically offered: Fall)

\section*{MEEG 4303. Materials Laboratory. 3 Hours.}

A study of properties, uses, testing, and heat treatment of basic engineering materials and related analytical techniques. Corequisite: Lab component.
Prerequisite: MEEG 2303. (Typically offered: Irregular)

\section*{MEEG 4313. Introduction to Tribology. 3 Hours.}

A study of science and technology of interacting surfaces in relative motion. Topics include solid surface characterization, contact between solid surfaces, adhesion, friction, wear, lubrication, micro/nanotribology, friction and wear screening test methods, and tribological components and applications. Prerequisite: MEEG 3013 and MEEG 3503 or graduate standing. (Typically offered: Irregular)

MEEG 4333. Hybrid Electric Vehicles. 3 Hours.
This course is intended to provide an introduction to basics of hybrid and pure electrical vehicles (mainly passenger cars), covering history, architecture, constituents, working mechanisms, and key technologies. The course focuses on fundamental concepts of different hybrid electrical vehicles (HEVs) and their technical features and highlights the successes of the state-of-the-art pure electrical vehicles (EVs). In addition, this course will introduce various battery technologies used for electrical vehicles, covering traditional batteries, lithium-ion batteries, and batteries beyond lithium-ions. It is appropriate for engineering and natural science students interested in obtaining basic knowledge of hybrid and pure electrical vehicles to prepare for a career in developing alternate energy sources. Prerequisite: ELEG 3903 or BENG 3113, and senior standing. (Typically offered: Spring)

\section*{MEEG 4413. Heat Transfer. 3 Hours.}

Basic thermal energy transport processes; conduction, convection, and radiation; and the mathematical analysis of systems involving these processes in both steady and time-dependent cases. Prerequisite: MEEG 3503. (Typically offered: Spring and Summer)

\section*{MEEG 4423. Power Generation. 3 Hours.}

Study of design and operational aspects of steam, gas, and combined cycle power plants. Brief study of Nuclear and Alternative energy systems. Prerequisite: MEEG 3503. (Typically offered: Irregular)

MEEG 4433. Aerospace Propulsion. 3 Hours.
Principles, operation, and characteristics of gas turbine and rocket engines. Brief study of novel spacecraft propulsion systems. Prerequisite: MEEG 3503. (Typically offered: Irregular)

\section*{MEEG 4453. Industrial Waste and Energy Management. 3 Hours.}

Applications of thermodynamics, heat transfer, fluid mechanics, and electric machinery to the analysis of waste streams and energy consumption for industrial facilities. Current techniques and technologies for waste minimization and energy conservation including energy-consuming systems and processes, utility rate analysis, economic analysis and auditing are taught. Prerequisite: MEEG 4413. (Typically offered: Irregular)

\section*{MEEG 4473. Indoor Environmental Control. 3 Hours.}

Gives student a thorough understanding of the fundamental theory of air conditioning design for commercial buildings, including calculating heating and cooling loads along with the proper selection and sizing of air conditioning equipment. Prerequisite: MEEG 4413. (Typically offered: Irregular)

MEEG 4483. Thermal Systems Analysis and Design. 3 Hours.
Analysis design and optimization of thermal systems and components with examples from such areas as power generation, refrigeration, and propulsion, Availability loss characteristics of energy systems and availability conservation methods. Prerequisite: MEEG 4413. (Typically offered: Fall and Summer)
MEEG 4483H. Honors Thermal Systems Analysis and Design. 3 Hours.
Analysis design and optimization of thermal systems and components with examples from such areas as power generation, refrigeration, and propulsion. Availability loss characteristics of energy systems and availability conservation methods. Additional topics, with an additional design project and /or more rigorous approach to design projects for honors course. Advanced project required. Prerequisite: MEEG 4413
(Typically offered: Fall and Summer)
This course is equivalent to MEEG 4483.

MEEG 4503. Introduction to Flight. 3 Hours.
The course will provide understanding in basic aerodynamics, airfoil design and characteristics, and flight control surfaces. Prerequisite: MATH 2584, MEEG 3503. (Typically offered: Fall)

\section*{MEEG 4503H. Honors Introduction to Flight. 3 Hours.}

The course will provide understanding in basic aerodynamics, airfoil design and characteristics, and flight control surfaces. Prerequisite: MATH 2584 and MEEG 3503. (Typically offered: Fall)
This course is equivalent to MEEG 4503.
MEEG 4523. Astronautics. 3 Hours.
Study of spacecraft design and operations. Prerequisite: MEEG 2013 and MEEG 2403 or consent of instructor. (Typically offered: Irregular)

MEEG 4633. Additive Manufacturing. 3 Hours.
This course provides an overview of developing opportunities and critical challenges of additive manufacturing (AM, also known as 3-D printing). It covers existing and emerging additive manufacturing processes in the context of product design, materials selection and processing, and industrial and consumer applications. Students will learn to take advantage of the new capabilities of additive manufacturing technologies (e.g., design freedom) for existing and new applications and the implementation of their designs in a laboratory through project-based learning. Students may not receive credit for both MEEG 4633 and MEEG 5633. Prerequisite: MEEG 2101, MEEG 2303, MEEG 3013, and MEEG 3503 or instructor consent. (Typically offered: Spring)

\section*{MEEG 4703. Mathematical Methods in Engineering. 3 Hours.}

Determinants, matrices, inverse of a matrix, simultaneous equations, eigenvalues, eigenvectors, coordinate transformations for matrices, diagonalization, square roots of a matrix, cryptography, and method of least squares. Vector algebra and calculus, Green's theorem, Strokes' theorem, and Gauss' divergence theorem. Index notation, epsilon-delta identity, and Cartesian tensors. Curvilinear coordinates, base vectors, and covariant and contravariant tensors. Applications to mechanics. Prerequisite: MATH 2574. (Typically offered: Irregular)

\section*{MEEG 4903H. Honors Mechanical Engineering Research. 3 Hours.} Independent research for mechanical engineering honors students. Prerequisite: Honors standing and instructor consent. (Typically offered: Fall and Spring)
MEEG 491V. Special Topics in Mechanical Engineering. 1-6 Hour. Consideration of current mechanical engineering topics not covered in other courses. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{MEEG 492V. Individual Study in Mechanical Engineering. 1-3 Hour.}

Individual study and research on a topic of mutually agreeable interest to the student and a faculty member. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer)

MEEG 492VH. Honors Individual Study in Mechanical Engineering. 1-3 Hour. Individual study and research on a topic of mutually agreeable interest to the student and a faculty member. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MEEG 492V.

\section*{Chemical Engineering (CHEG)}

Keisha B. Walters
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Chemical engineering deals with the creation, design, operation, and optimization of processes that derive practical benefits from chemical or physical changes principally involving chemical and biochemical reactions. The profession is quite broad and has traditionally provided the technology for: supplying energy and fuel; synthesizing materials such as plastics, chemicals, fertilizers, and pharmaceuticals; and managing environmental and safety concerns of physical and chemical processes. Some new applications of the principles of chemical engineering at nanoscales are being made in sustainable energy production and detection of gene mutations, protein configurations, and virus serotypes as well as thermal destruction of cancer cells.

Chemical engineers have a variety of traditional job opportunities in industries such as petroleum production and processing, chemical manufacturing, food processing, pharmaceutical production, and process equipment manufacturing. Job opportunities may involve research, development, design, manufacturing, sales, or teaching as professional activities. The chemical engineer can also move easily into environmental engineering, nuclear engineering, oceanography, biomedical engineering, pharmacology, law, medicine, or other multidisciplinary fields.

In chemical engineering, students obtain a broad foundation in chemistry, mathematics, physics, communication skills, economics, and the humanities. Courses in material and energy balances, thermodynamics, reaction kinetics, fluid mechanics, heat and mass transfer, process control, computer methods, safety, and design provide students with the background and learning skills required of the practicing chemical engineer. The curriculum includes elective courses that enable a student to prepare for immediate employment or further study at the graduate level or the professional level, such as for medical school. The chemical engineering program also serves as an excellent preparation for dental, pharmacy, or law school.

The educational objective of the undergraduate program in the Ralph E . Martin Department of Chemical Engineering is to prepare students for careers and professional accomplishment after graduating, including:
- Successfully practicing as an engineer or in another professional pursuit, including traditional or emerging fields of chemical engineering, to make a positive impact locally and globally.
- Actively involved in professional lifelong learning, both informal and formal, that deepens their knowledge and readiness to contribute to advancing science, technologies and solutions essential for the future, including successfully participating in a graduate or professional program.

The program prepares graduates to achieve these educational objectives through development of their skills as outlined in our educational outcomes and taught in our curriculum.

Completion of the degree requirements provides graduates with the following learning outcomes:
- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to apply the engineering design process to produce solutions that meet specified needs with consideration for public
health and safety, and for global, cultural, social, environmental, economic, and other factors as appropriate to the discipline
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to communicate effectively with a range or audiences
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- An ability to recognize the ongoing need to acquire new knowledge, to choose appropriate learning strategies, and to apply this knowledge
- An ability to function effectively as a member or leader of a team that establishes goals, plans tasks, meets deadlines, and creates a collaborative and inclusive environment

\section*{Requirements for B.S. in Chemical Engineering}

Each student in chemical engineering is required to complete 128 hours of coursework including the 35-hour University Core. To be eligible for graduation, all students must complete at least 30 hours of Chemical Engineering (CHEG) classes at the University of Arkansas, Fayetteville that are required for the degree. Each student in chemical engineering is also required to complete six semester hours of technical electives, three semester hours of Advanced Science electives, three semester hours of Chemical Engineering electives, and three semester hours of Advanced Science or Chemical Engineering electives. As discussed in the department's Undergraduate Advising Manual, students can select elective courses to better prepare for employment or further study in areas such as:
- Biotechnology
- Biomedical engineering
- Environmental engineering
- Food process engineering
- Materials engineering
- Microelectronics
- Nanotechnology
- Nuclear engineering
- Pre-medicine
- Simulation and optimization

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

\section*{Chemical Engineering B.S.Ch.E. Eight-Semester Degree Program}

The following section contains the list of courses required for the Bachelor of Science in Chemical Engineering degree. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy (p. 67) in the Academic Regulations chapter for university requirements of the program. Entering freshmen will be required to participate in selected Freshman Engineering Student Services.

Chemical Engineering Elective
Year Total:
Total Units in Sequence:
14
Students have demonstrated successful completion of the learning
indicators identified for learning outcome 2.1, by meeting the
prerequisites for MATH 2554.
2 The Fine Arts Elective courses which satisfy General Education
Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003,
DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013,
MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
The Social Sciences Elective courses which satisfy General
Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023,
HDFS 1403, HDFS 2413, HIST 1113, HIST 1123, HIST 2093,
HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2013,
PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or
SOCI 2033.
The Humanities Elective courses which satisfy General Education
Outcomes 3.2 and 5.1 include: CLST 1003, CLST 1003H, CLST 1013,
HUMN 1124H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, or
PHIL 2103C.
The Social Sciences Elective courses which satisfy General Education
Outcome 3.3 include: AGEC 1103, AGEC 2103, ANTH 1023,
COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003,
HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H,
HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093,
HUMN 1114H, HUMN 2114H, INST 2813, INST 2813H, PLSC 2003,
PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003,
RESM 2853, SOCI 2013, SOCI 2013H, SOCI 2033. Note, courses
cannot be counted twice in degree requirements.

\section*{Elective Options in Chemical Engineering}

Each student in chemical engineering is required to complete six semester hours of technical electives and nine semester hours of Advanced Science electives. At least three semester hours must be taken from the list of Science Electives.

\section*{Technical Electives}

In general, any upper level (3000-level or above) course in the sciences, math or engineering may serve as a technical elective, with prior approval by your academic adviser. BIOL 2013, BIOL 2213, BIOL 2323 and BIOL 2443 are 2000-level courses that can also serve as technical electives, and are also useful for students applying to medical school. INEG 2333, INEG 2413 and INEG 3513 are statistics-oriented classes, and may be used for technical elective credit. Upper-level courses in nontechnical areas such as business may also serve as technical electives with prior approval by your academic adviser. There is no specific list of approved technical electives.

\section*{Advanced Science and Chemical Engineering Electives}

A list of the approved Advanced Science or Chemical Engineering courses is shown below. Once again, each student in chemical engineering is required to complete nine semester hours of Advanced Science electives. At least three semester hours must be taken from the list of Science electives. Courses not on the list may satisfy the requirement with student appeal and approval by the Chemical Engineering faculty.
CHEM 3203 Forensic Chemistry 3CHEM 3453 Elements of Physical Chemistry 3CHEM 3504 Physical Chemistry I 4
CHEM 3514 Physical Chemistry II 4
CHEM 4123 Advanced Inorganic Chemistry I 3
CHEM 4211L Instrumental Analysis Laboratory 1
CHEM 4213 Instrumental Analysis 3
CHEM 4283 Energy Conversion and Storage 3
CHEM 4843H Honors Biochemistry II 3
CHEM 4853 Biochemical Techniques 3
CHEM 5283 Energy Conversion and Storage 3
FDSC 4304 Food Chemistry 4
PHYS 3113 Analytical Mechanics 3
PHYS 3453 Electromagnetic Theory I 3
PHYS 3463 Electromagnetic Theory II 3
PHYS 3544 Optics 4
PHYS 3603 Introduction to Modern Physics 3
PHYS 360VL Introduction to Modern Physics Laboratory 1-3
PHYS 3613 Modern Physics 3
PHYS 4073 Introduction to Quantum Mechanics 3
PHYS 4333 Thermal Physics 3
PHYS 4613 Introduction to Biophysics and Biophysical 3

\section*{Chemical Engineering Electives}
- Any graduate Chemical Engineering class (excluding seminar)-instructor permission is required
- Any senior level Chemical Engineering elective class excluding research, co-op/internship, special problem or ChE Car

Students are encouraged to select elective courses to better prepare for employment or further study in areas such as:
- Biotechnology
- Biomedical engineering
- Environmental engineering
- Food process engineering
- Materials engineering
- Microelectronics
- Nanotechnology
- Nuclear engineering
- Pre-medicine
- Simulation and optimization

Additional opportunities are available to enhance the educational experience of students in these areas. Students should consult their academic adviser for recommendations.

\section*{Honors Program Requirements}

Chemical engineering students enrolled in the Honors College are encouraged to complete the requirements to graduate with honors. In
addition to grade point requirements, Honors College students must complete a total of at least 12 hours of honors course credits including a minimum of 6 hours of honors course credits in chemical engineering. The student must also participate in a design or research project culminating in an Honors Thesis. Thesis credit in the department will be satisfied by Honors College students in one of the following ways:
- Completion of the American Institute of Chemical Engineers Design Competition Problem individually following contest rules as part of CHEG 4443 Design II;
- Completion of a design contest problem as part of a team, such as the WERC competition in CHEG 4443 Design II; or
- Completion of CHEG 488V Special Problems at the direction of a faculty mentor.

Regardless of the thesis project, an Honors Thesis and oral presentation will be prepared by the student and approved by the Department Honors Committee and the faculty mentor.

Ackerson, Michael D., Ph.D. (University of Arkansas), M.S., B.S. (University of Missouri-Rolla), Associate Professor, 1986, 1997.
Almodovar Montanez, Jorge L., Ph.D. (Colorado State University), Associate Professor, Ralph E. Martin Professorship in Chemical Engineering, 2018.
Beitle, Karen, M.S.(University of Arkansas), B.S. (University of Pittsburgh), Instructor, .
Beitle, Robert R., Ph.D., M.S.Ch.E., B.S.Ch.E. (University of Pittsburgh), Professor, Jim L. Turpin Professorship in Chemical Engineering, 1993, 2006.

Clausen, Ed, Ph.D., M.S.Ch.E., B.S.Ch.E. (University of Missouri-Rolla), University Professor, Charles W. Oxford Professorship in Chemical Engineering, 1981, 2018.
Hestekin, Christa, Ph.D. (Northwestern University), B.S.Ch.E. (University of Kentucky), Associate Professor, Ansel and Virginia Condray Endowed Professorship in Chemical Engineering, 2006, 2013.
Hestekin, Jamie A., Ph.D. (University of Kentucky), B.S.Ch.E. (University of Minnesota-Duluth), Professor, Maurice E. Barker Chair in Chemical Engineering, 2006, 2017.
Kim, Daesoo, Ph.D., M.S. (University of Arkansas), B.S. (Suncheon National University), Instructor, 2022.
Monroe, Jacob, Ph.D. (University of California, Santa Barbara), B.S. (University of Virginia), Assistant Professor, Ray C. Adam Endowed Chair in Chemical Engineering, .
Mourot, Michael, B.S. (University of Arkansas), Instructor, .
Nayani, Karthik, Ph.D. (Georgia Institute of Technology), B.S.Ch.E. (Indian Institute of Technology, Kanpur), Assistant Professor, 2020.
Richardson, Will, Ph.D. (Texas A\&M University), B.S. (University of Arkansas), Associate Professor, Bates Teaching Professorship in Chemical Engineering,
Spicer, Tom O., Ph.D., M.S., B.S. (University of Arkansas), Professor, Robert E. Babcock Sr. Professorship in Chemical Engineering, 1981, 1997.

Vega, Jose L., Ph.D. (University of Arkansas), M.S., Licenciatura (Universidad de Santiago de Compostela), Instructor, 2020.
Walker, Heather L., Ph.D., M.S.Ch.E., B.S.Ch.E. (University of Arkansas), Teaching Assistant Professor, 2008, 2014.
Walters, Keisha, Ph.D., M.S., B.S. (Clemson University), Professor, Kevin W. and Marie L. Brown Department Head Chair in Chemical Engineering, Ralph E. Martin Leadership Chair in Chemical Engineering, 2021.

Wickramasinghe, Ranil, Ph.D. (University of Minnesota-Twin Cities), M.S., B.S. (University of Melbourne, Australia), Distinguished Professor, Ross E. Martin Chair in Emerging Technologies, 2011, 2021.

\section*{Courses}

CHEG 2113. Introduction to Chemical Engineering I. 3 Hours.
Introduction to the field of chemical engineering. Industries, careers, and the curriculum are discussed. Basic chemical engineering terms, concepts, and calculations are presented. Mass balance calculations are performed and the application of computers to chemical engineering problems is introduced. Pre- or Corequisite: CHEM 1123 or CHEM 1223. (Typically offered: Fall and Spring)

CHEG 2133. Fluid Mechanics. 3 Hours.
Analysis and design of fluids handling equipment and systems. Application of the principles of fluid statics, fluid dynamics, compressible flow, etc. Prerequisite: MATH 2584 or MATH 2584C. Pre- or Corequisite: MATH 2574 or MATH 2574C and (CHEG 2113 or BENG 2632 or BMEG 2614). (Typically offered: Fall, Spring and Summer)

\section*{CHEG 2133H. Honors Fluid Mechanics. 3 Hours.}

Analysis and design of fluids handling equipment and systems. Application of the principles of fluid statics, fluid dynamics, compressible flow, etc. Prerequisite: MATH 2584 or MATH 2584C. Pre- or Corequisite: MATH 2574 or MATH 2574C and (CHEG 2113 or BENG 2632 or BMEG 2614). (Typically offered: Fall, Spring and Summer)

This course is equivalent to CHEG 2133.
CHEG 2313. Thermodynamics of Single-Component Systems. 3 Hours. A detailed study of the thermodynamic "state principles," energy and entropy balances, and their application to the solution of problems involving singlecomponent physical systems and processes. Prerequisite: MATH 2584. Pre- or Corequisite: CHEG 2113 or BENG 2632 or BMEG 2614. (Typically offered: Fall, Spring and Summer)

CHEG 2313H. Honors Thermodynamics of Single-Component Systems. 3 Hours.

A detailed study of the thermodynamic "state principles," energy and entropy balances, and their application to the solution of problems involving singlecomponent physical systems and processes. Prerequisite: MATH 2584. Pre- or Corequisite: CHEG 2113 or BENG 2632 or BMEG 2614. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CHEG 2313.

\section*{CHEG 3144. Heat and Mass Transfer. 4 Hours.}

Applications of the principles of conduction, convection and radiation to the analysis and design of chemical processing heat transfer equipment and systems. Fundamentals of chemical diffusional and convection processes. Pre- or Corequisite: CHEG 3323. Prerequisite: CHEG 2133 with a C or above, and MATH 2584. (Typically offered: Fall and Spring)

\section*{CHEG 3144H. Honors Heat and Mass Transfer. 4 Hours.}

Applications of the principles of conduction, convection and radiation to the analysis and design of chemical processing heat transfer equipment and systems. Fundamentals of chemical diffusional and convection processes. Pre- or Corequisite: CHEG 3323. Prerequisite: CHEG 2133 with a C or above, and MATH 2584.
(Typically offered: Fall and Spring)
This course is equivalent to CHEG 3144.

\section*{CHEG 3233L. Chemical Engineering Laboratory I. 3 Hours.}

Experimental measurements of various physical properties and comparison with published values and theoretical predictions. Experimental investigation of fluid flow and thermodynamics. Interpretation of results using graphical, numerical and statistical tools, and presentation of results in written technical reports and oral briefings. Identification and quantification of sources of experimental error. Identification of relevant experimental parameters to achieve an objective. Pre- or Corequisite: CHEG 3144. Corequisite: Drill component. Prerequisite: CHEG 2133 and CHEG 2313, both with a C or above. (Typically offered: Fall and Spring)

CHEG 3253. Chemical Engineering Computer Methods. 3 Hours.
Application of computer methods to chemical engineering problems including a review of structured programming principles. Corequisite: Drill component. Pre- or Corequisite: CHEG 3144 and CHEG 3323. Prerequisite: MATH 2584. (Typically offered: Fall and Spring)

CHEG 3323. Thermodynamics of Multi-Component Systems. 3 Hours.
The use of the state principle and energy and entropy balance developed in CHEG 2313 is extended to allow processes. Physical and chemical equilibrium processes are considered in detail. Prerequisite: CHEG 2313 with a C or above, and MATH 2574. (Typically offered: Fall and Spring)

CHEG 3323H. Honors Thermodynamics of Multi-Component Systems. 3 Hours. The use of the state principle and energy and entropy balance developed in CHEG 2313 is extended to allow processes. Physical and chemical equilibrium processes are considered in detail. Prerequisite: Honors standing, CHEG 2313 with a C or above, and MATH 2574. (Typically offered: Fall and Spring)
This course is equivalent to CHEG 3323.

\section*{CHEG 3333. Chemical Engineering Reactor Design. 3 Hours.}

Principles of kinetics of homogeneous and heterogeneous reactions, catalysis, and reactor design with applications, drawn from industrial processes. Pre- or Corequisite: CHEG 3253. Prerequisite: CHEG 3323, with a C or above. (Typically offered: Fall and Spring)

CHEG 3333H. Honors Chemical Engineering Reactor Design. 3 Hours.
Principles of kinetics of homogeneous and heterogeneous reactions, catalysis, and reactor design with applications, drawn from industrial processes. Pre- or
Corequisite: CHEG 3253. Prerequisite: Honors standing, and CHEG 3323 with a C or above. (Typically offered: Fall and Spring)
This course is equivalent to CHEG 3333.

\section*{CHEG 3713. Chemical Engineering Materials Technology. 3 Hours}

Selection of metals, polymers and ceramics for service in process conditions (including corrosion). In addition to static strains on materials, specialized materials such as semiconductors,, composites, and nano-materials are studied. The relationship between molecular structure and macroscopic properties is emphasized including processing and manufacture. Prerequisite: CHEG 3323 with a C or above, CHEM 3603, and PHYS 2054. (Typically offered: Spring)

CHEG 4163. Separation Processes. 3 Hours.
Applications of chemical engineering design to stagewise and continuous separations in systems approaching equilibrium. Prerequisite: CHEG 3144 with a C or above. (Typically offered: Fall and Spring)

CHEG 4163H. Honors Separation Processes. 3 Hours.
Applications of chemical engineering design to stagewise and continuous separations in systems approaching equilibrium. Prerequisite: Honors standing and CHEG 3144 with a C or above. (Typically offered: Fall and Spring)
This course is equivalent to CHEG 4163.

\section*{CHEG 4332L. Chemical Engineering Laboratory II. 2 Hours.}

Experimental investigations of mass transfer and kinetics/reactor design. Special attention to attaining a high order of accuracy and to presenting results in complete written reports, with emphasis on quality rather than quantity work performed.
Pre- or Corequisite: CHEG 3333 and CHEG 4163. Corequisite: Drill component. Prerequisite: CHEG 3233L with a C or above. (Typically offered: Fall and Spring)

CHEG 4413. Chemical Engineering Design I. 3 Hours.
Principles of cost estimation, profitability, economic analysis, and economic balances as practiced in the chemical process industries. Special emphasis on the solution of problems involving the combination of engineering principles and economics. Corequisite: Drill component. Pre- or Corequisite: CHEG 4163. Prerequisite: CHEG 3144 with a C or above, CHEG 3333 with a C or above, and (ECON 2013 or ECON 2143). (Typically offered: Fall and Spring)

CHEG 4413H. Honors Chemical Engineering Design I. 3 Hours.
Principles of cost estimation, profitability, economic analysis, and economic balances as practiced in the chemical process industries. Special emphasis on the solution of problems involving the combination of engineering principles and economics. Corequisite: Drill component. Pre- or Corequisite: CHEG 4163. Prerequisite: Honors standing, CHEG 3144 with a C or above, CHEG 3333 with a C or above, and (ECON 2013 or ECON 2143). (Typically offered: Fall and Spring) This course is equivalent to CHEG 4413.

\section*{CHEG 4423. Automatic Process Control. 3 Hours.}

Application of mathematical modeling methods to the description of transient phenomena of interest to process engineers. Modes of control and principles of feedback control are introduced with applications to process engineering problems. Pre- or Corequisite: CHEG 4163. Prerequisite: CHEG 3253 with a C or above. (Typically offered: Spring)

\section*{CHEG 4423H. Honors Automatic Process Control. 3 Hours.}

Application of mathematical modeling methods to the description of transient phenomena of interest to process engineers. Modes of control and principles of feedback control are introduced with applications to process engineering problems. Pre- or Corequisite: CHEG 4163. Prerequisite: Honors standing, and CHEG 3253 with a C or above. (Typically offered: Spring)
This course is equivalent to CHEG 4423.
CHEG 4443. Chemical Engineering Design II. 3 Hours.
Responsibility for decision making is placed on the students in the solution of a comprehensive, open ended problem based on an industrial process. Both formal oral and formal written presentation of results are required. Students are selected for participation in some sections of the course based on academic performance, honors standing and instructor recommendations. Corequisite: Drill component. Prerequisite: CHEG 4413 with a C or above. (Typically offered: Fall and Spring)

CHEG 4443H. Honors Chemical Engineering Design II. 3 Hours.
Responsibility for decision making is placed on the students in the solution of a comprehensive, open ended problem based on an industrial process. Both formal oral and formal written presentation of results are required. Students are selected for participation in some sections of the course based on academic performance, honors standing and instructor recommendations. Corequisite: Drill component. Prerequisite: CHEG 4413 with a C or above. (Typically offered: Fall and Spring) This course is equivalent to CHEG 4443.

\section*{CHEG 4813. Chemical Process Safety. 3 Hours.}

Application of chemical engineering principles to the study of safety, health, and loss prevention. Fires and explosions, hygiene, toxicology, hazard identification, and risk assessment in the chemical process industries. Corequisite: Drill component. Prerequisite: CHEG 3144 and CHEG 3323, both with a C or above. (Typically offered: Fall)

CHEG 4813H. Honors Chemical Process Safety. 3 Hours.
Application of chemical engineering principles to the study of safety, health, and loss prevention. Fires and explosions, hygiene, toxicology, hazard identification, and risk assessment in the chemical process industries. Corequisite: Drill component. Prerequisite: Honors standing, CHEG 3323 and CHEG 3144 both with a C or above. (Typically offered: Fall)
This course is equivalent to CHEG 4813.

\section*{CHEG 488V. Special Problems. 1-6 Hour.}

Special problems. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{Reserve Officers' Training Corps}

The Reserve Officers' Training Corps (ROTC) programs at the University of Arkansas provide physical and mental challenges that are not offered anywhere else on campus. The ROTC programs prepare young men and women for careers as professional military officers. In addition to academic studies, each service requires that all students attend a weekly leadership laboratory.

The freshman and sophomore courses are electives offered to male and female students who may earn four hours of academic credit in Aerospace Studies or up to six hours in Military Science. Absolutely no military obligation is incurred by non-scholarship students as a result of their enrollment in or completion of any or all of their freshman or sophomore ROTC courses.

\section*{Air Force ROTC}

Professor of Aerospace Studies
Lieutenant Colonel James W. Malloy III
319 Memorial Hall, 479-575-3651
Email: rotc030@uark.edu
Air Force ROTC Website (http://afrotc.uark.edu/)
The University of Arkansas hosts the award-winning Air Force ROTC Detachment 030, ThunderHawgs, part of a nationwide program that allows students to pursue commissions as officers in the United States Air Force while simultaneously attending college. Students can register through normal course registration processes.

Air Force ROTC consists of four years of Aerospace Studies classes:
\begin{tabular}{lll} 
AERO 1011 & \begin{tabular}{l} 
Heritage and Values of the United States Air Force
\end{tabular} & 1 \\
AERO 1021 & \begin{tabular}{l} 
Heritage and Values of the United States Air Force \\
II
\end{tabular} & 1 \\
AERO 2011 & Team and Leadership Fundamentals I & 1 \\
AERO 2021 & Team and Leadership Fundamentals II & 1 \\
AERO 3013 & Leading People and Effective Communication I & 3 \\
AERO 3023 & Leading People and Effective Communication II & 3 \\
AERO 4013 & \begin{tabular}{l} 
National Security Affairs and Preparation for Active \\
Duty I
\end{tabular} & 3 \\
AERO 4023 & \begin{tabular}{ll} 
National Security Affairs and Preparation for Active \\
& Duty II
\end{tabular} & 3
\end{tabular}

And a corresponding Leadership Laboratory for each year, at which students apply leadership skills, demonstrate command and effective communication, develop physical fitness, and practice military customs and courtesies.

College students enrolled in the Air Force ROTC program (known as "cadets") who successfully complete both Air Force ROTC training and college degree requirements will graduate and simultaneously commission as Second Lieutenants in the Active Duty Air Force.

Additional information about Air Force ROTC can be found on the web at www.afrotc.com (http://www.afrotc.com/).

\section*{Courses}

AERO 1011. Heritage and Values of the United States Air Force I. 1 Hour.
A survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force. Leadership LAB mandatory for cadets. Corequisite: Lab component. (Typically offered: Fall)
AERO 1021. Heritage and Values of the United States Air Force II. 1 Hour. A survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force. Leadership LAB mandatory for cadets. Corequisite: Lab component. (Typically offered: Spring)

AERO 2011. Team and Leadership Fundamentals I. 1 Hour.
This course focuses on laying the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The course will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate. Corequisite: Lab component. (Typically offered: Fall)
AERO 2021. Team and Leadership Fundamentals II. 1 Hour.
This course focuses on laying the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The course will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate. Prerequisite: AERO 2011. Corequisite: Lab component. (Typically offered: Spring)
AERO 3013. Leading People and Effective Communication I. 3 Hours. This course teaches cadets advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Cadets have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors. Corequisite: Lab component. (Typically offered: Fall)
AERO 3023. Leading People and Effective Communication II. 3 Hours. This course teaches cadets advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Cadets have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors. Corequisite: Lab component. (Typically offered: Spring)

AERO 4013. National Security Affairs and Preparation for Active Duty I. 3 Hours.
This course is designed for college seniors and gives them the foundation to understand their role as military officers in American society. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the cadets for Active Duty. Corequisite: Lab component. (Typically offered: Fall)
AERO 4023. National Security Affairs and Preparation for Active Duty II. 3 Hours.
This course is designed for college seniors and gives them the foundation to understand their role as military officers in American society. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the cadets for Active Duty. Corequisite: Lab component. (Typically offered: Spring)

\section*{Army ROTC}

Professor of Military Science and Leadership

\section*{Richard Frank}

106 Army ROTC Building, 479-575-4251
Toll Free: 1-866-891-5538, Fax: 479-575-5855
Email: armyrotc@uark.edu
Army ROTC Website (http://armyrotc.uark.edu/)
Army ROTC teaches you how to lead. It is one of the best leadership courses in the country and you can make it a part of your academic curriculum here at the University of Arkansas. Army ROTC is an elective curriculum you take along with your required college courses that gives you the tools, training and experiences that will help you succeed in any competitive environment. Participation in the Army ROTC program while pursuing your academic degree offers you the opportunity to earn a commission as a second lieutenant and serve on active duty or in the National Guard or Army Reserve upon graduation.

The traditional four-year Army ROTC Program is divided into a two-year basic course (1000- and 2000-level Military Science classes) and a twoyear advanced course (3000- and 4000-level Military Science classes). Students may enroll in the basic course without incurring any military service obligation.

\section*{Basic Course Requirements}

The first two years of instruction introduce the student to fundamental military and leadership subjects. Students normally take the basic course sequence over four successive semesters, but the basic courses can be completed in as few as two semesters. Students should discuss available options with the Recruitment and Operations Officer before registering for courses if they have fewer than four semesters to complete the basic course.

The regular curriculum consists of a lecture and lab each semester. Freshmen are encouraged to take MILS 1001 Introduction to the Army in the fall and MILS 1011 Foundations of Agile and Adaptive Leadership in the spring. Both classes are 1 credit hour classes that have 1 hour of classroom instruction and 2 hours of lab per week. Sophomores are encouraged to take MILS 2002 Leadership and Decision Making in the fall and MILS 2012 Army Doctrine and Team Development in the spring. Both of the 2000-level classes are 2 credit hour classes that have 2 hours of classroom instruction and 3 hours of lab per week. Labs provide the opportunity for the practical application of leadership concepts and tactical military skills training such as map reading, land navigation, field training, and rifle/pistol marksmanship.

\section*{Advanced Course Requirements}

Students who have completed the basic course sequence or an equivalency (see Two-Year Program), have met all enrollment eligibility criteria continue into the advanced course. To enroll in the advanced course, students must meet eligibility and age requirements, be physically qualified, have two academic years to complete before graduation or reception of a graduate degree, have a minimum grade point average of 2.0, be accepted by the professor of military science, and be a U.S. citizen. This advanced course curriculum consists of the following courses that include corresponding leadership labs, physical fitness training sessions, and a four-week summer camp (Advanced Camp) at Fort Knox, Kentucky.

Course List
MILS 3004 Applied Leadership I 4
MILS 3014 Applied Leadership II 4
\begin{tabular}{lll} 
MILS 4004 & Advanced Leadership I & 4 \\
MILS 4014 & Advanced Leadership II & 4
\end{tabular}

During labs and physical training sessions students receive practical leadership opportunities to prepare them for summer camp and their future military careers. Students normally attend Advanced Camp in the summer between their junior and senior years. Students must complete all of the courses listed above and satisfactorily complete Advanced Camp to earn a commission.

Army ROTC students who receive an Army ROTC scholarship or enter the Army ROTC Advanced Course must agree to complete a period of service with the U.S. Army. You can serve full time in the Army for three years (four years for scholarship winners). Selected cadets may choose to serve part time in the U.S. Army Reserve or Army National Guard while pursuing a civilian career.

\section*{Two-Year Program}

Students who are veterans, members of the Army National Guard/ Army Reserve, or who have participated in the Junior Reserve Officers' Training Corps Program in high school may qualify for direct entry into the advanced course with the approval of the Professor of Military Science. Students who did not complete the ROTC basic course curriculum (see above) but have two years of academic study remaining may be eligible to attend Basic Camp to satisfy the basic course requirements. Basic Camp, held at Fort Knox, Kentucky, during the summer, introduces the student to the Army and covers the requirements for the basic course in 28 days. Students who believe they qualify for this program should consult with the Scholarship and Enrollment Officer for more information.

\section*{Scholarships}

Qualified students may compete for Army ROTC scholarships ranging from two to four years in duration. The Army provides scholarships for those who desire to serve on Active Duty, in the National Guard, or in the Army Reserve. Students must be enrolled and participating in Army ROTC to be eligible for scholarships. Scholarships are merit based and pay full tuition and fees (both in and out-of-state) or room and board (capped at \(\$ 5,000 /\) semester) but not both, \(\$ 600\) per semester for textbooks and laboratory expenses, and a tax fee subsistence stipend of \(\$ 300-\$ 500\) for each month of the regular school year depending on Military Science level. Interested students should consult with the Scholarship and Enrollment Officer for more detailed information concerning the scholarship eligibility requirements. For additional information about Army ROTC, students may contact Mr. Oscar Rayford in the Department of Military Science, 479-575-5853, olrayfor@uark.edu.

\section*{Courses}

\section*{MILS 1001. Introduction to the Army. 1 Hour.}

This course focuses on small group leadership and introducing the student to the Army as an organization. Students learn time management, drill and ceremony, military customs and courtesies, basic map reading, water safety and first aid. Introduction to the organization, values, ethics, personal development and the role of the Army. Classroom 1 hour per week. Lab 2 hours per week. Corequisite: Lab component. (Typically offered: Fall)

MILS 1011. Foundations of Agile and Adaptive Leadership. 1 Hour. Continuation of MILS 1001. Topics include the Army Profession and what it means to be a professional in the U.S. Army, the Army Leadership Requirements Model, intermediate map reading/orienteering, and basic field craft. Classroom 1 hour per week. Lab 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)

MILS 1101. Basic Marksmanship. 1 Hour.
Introduction to safe use of a rifle and practical application of rifle marksmanship. Course includes weapons safety, mechanics, capabilities, and fundamentals of marksmanship. Includes visit to fire at a local indoor rifle range. Materials and equipment furnished by Department of Military Science. (Typically offered: Fall)

MILS 2002. Leadership and Decision Making. 2 Hours.
This course focuses on basic Army leadership doctrine and develops the student's skills by introducing them to small unit tactics. Students learn to apply critical thinking and problem solving by using Troop Leading Procedures (TLP). Additional topics include the value of diversity, understanding the officer`s role in leading change, management skills, and the fundamentals of the Army as a profession. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MILS 1001 and MILS 1011 or departmental consent. (Typically offered: Fall)

MILS 2012. Army Doctrine and Team Development. 2 Hours.
Continuation of MILS 2002. Topics include Troop Leading Procedures (TLP), time management, military writing, and basic tactics. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MILS 1001, MILS 1011, and MILS 2002 or departmental consent. (Typically offered: Spring)
MILS 2101. Advanced Rifle Marksmanship. 1 Hour.
Course to teach students the fundamentals of Advanced Rifle Marksmanship. Class is conducted once a week with topics including: Air rifle, small bore firing, advanced practical exercises of different shooting positions and marksmanship competition with other universities. Prerequisite: MILS 1101. (Typically offered: Spring)

\section*{MILS 3004. Applied Leadership I. 4 Hours.}

This course focuses on the development of managerial and leadership abilities and the practical application of these skills during 'hands-on' training. Students learn advanced infantry tactics and demonstrate their leadership potential using this medium. Students are required to lead in drill and ceremony, physical training, and tactical situations. This course prepares the student to excel at the ROTC Advanced Camp (normally attended during the summer between the junior and senior year). One 48 hour weekend field training exercise is required per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Corequisite: Lab component. Prerequisite: Departmental consent and (MILS 1001, MILS 1011, MILS 2002, and MILS 2012; or completion of Army ROTC Basic Camp; or completion of basic training with any component of the U.S. Armed Forces). (Typically offered: Fall)

\section*{MILS 3014. Applied Leadership II. 4 Hours.}

Continuation of MILS 3004. This course prepares the student to excel at the ROTC Advanced Camp (normally attended during the summer between the junior and senior year). Requirements include one 48 hour weekend field training exercise per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Corequisite: Lab component. Prerequisite: Departmental consent and MILS 1001, MILS 1011, MILS 2002, MILS 2012 and MILS 3004; or completion of Army ROTC Basic Camp; or completion of basic training with any component of the U.S. Armed Forces. (Typically offered: Spring)

\section*{MILS 4001. Advanced Military Issues. 1 Hour.}

Individual study for advanced undergraduates. Students will research, write a paper, and give an oral presentation of a current military issue. Prerequisite: PMS approval. (Typically offered: Fall and Spring)

MILS 4004. Advanced Leadership I. 4 Hours.
This course focuses on the study of various military organizations and their role in military operations. Discussion of command and staff management in military organizations, executive responsibility of Army commissioned officers, service customs, courtesies, and traditions. The senior year includes the study of personnel management, professional ethics, the military justice system, and the Army's training and maintenance management system. This course prepares students to assume responsibilities as a commissioned officer upon graduation. One 48 hour weekend field training exercise is required per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Corequisite: Lab component. Prerequisite: Departmental consent and MILS 3004 and MILS 3014. (Typically offered: Fall)

\section*{MILS 4011. Advanced Military Correspondence. 1 Hour.}

Practicum for advanced undergraduates. Students submit prepared military correspondence projects written in the military style using military forms and formats. Prerequisite: PMS approval. (Typically offered: Fall and Spring)

\section*{MILS 4014. Advanced Leadership II. 4 Hours.}

Continuation of MILS 4004. This course prepares students to assume responsibilities as a commissioned officer upon graduation. One 48 hour weekend field training exercise is required per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Corequisite: Lab component. Prerequisite: Departmental consent and MILS 3004, MILS 3014 and MILS 4004. (Typically offered: Spring)

\section*{Service Learning}

\section*{Carrie Nelms}

Director of Service Learning
Department of Communications
479-575-5962
cnelms@uark.edu (afoxford@uark.edu)
Website: servicelearning.uark.edu (http://servicelearning.uark.edu/)
Email: svclrn01@uark.edu

\section*{The Service Learning Initiative}

The Service Learning Initiative is a joint initiative between the University of Arkansas Provost Office, the Honors College, and the Division of Student Affairs. Service learning builds critical thinking skills while engaging in academic courses that promote experiential, community-based activities. Formulized service learning courses must meet the committee-approved service learning definition and criteria, and be approved for designation by the Service Learning Committee.

\section*{Service Learning Definition}

Service learning is a credit-bearing, faculty-directed, teaching-learning experience that is course specific. Service Learning strengthens academic content knowledge and sense of civic responsibility. Students build critical thinking skills as they engage in experiential, community-based activities that are aligned with and integral to academic course work. At the same time, the community (real people in real situations) benefits from assistance that would otherwise not be available.

\section*{Courses Page}

Students can visit the Service Learning program course page (https:// servicelearning.uark.edu/courses/) to find courses that have been designated with service-learning components. Faculty can find criteria (http://servicelearning.uark.edu/) to develop courses that will be considered for designation as service learning courses.

\section*{Service Learning Steering Committee}
- Gabriel Diaz Montemayor, Fay Jones School of Architecture and Design
- Casey Kayser, Fulbright College of Arts and Sciences
- Lisa Bowers, College of Education and Health Professions
- Kevin Hall, College of Engineering
- Donia Timby, Dale Bumpers College of Agricultural, Food and Life Sciences
- Rogelio Garcia Contreras, Department of Marketing, Sam M. Walton College of Business
- Megan Hull, Graduate School and International Education/Office of Study Abroad
- Jen Edwards, Student Success at the CORD
- Chelsea Hodge, Honors College
- Amelia McGowan and Annie Smith, School of Law
- Claire Allison, Center for Community Engagement
- Richard Cassady, Teaching and Faculty Support Center

\section*{Undergraduate Faculty}

Faculty and instructional staff are listed in alphabetical order. The first date after the listing of each name indicates the year of first appointment at the University of Arkansas; the second date indicates the year of appointment to present faculty rank. Where they coincide, only one date is given.

\section*{A}

Abbas, James, Ph.D., M.S. (Case Western Reserve University), Sc.B. (Brown University), Professor, Department of Biomedical Engineering, 2021.

Abrahams, Daniel, Ph.D. (Oakland University), M.M. (University of Nebraska at Omaha), B.M.E. (Temple University), Associate Professor, Department of Music, 2016, 2022.
Ackerson, Michael D., Ph.D. (University of Arkansas), M.S., B.S. (University of Missouri-Rolla), Associate Professor, Ralph E. Martin Department of Chemical Engineering, 1986, 1997.
Acrey, Cash, Ph.D., M.B.A. (University of Arkansas), B.A. (University of Arkansas at Little Rock), Clinical Assistant Professor, Department of Finance, 2013.
Acuff, Jennifer C., Ph.D. (Virginia Tech), M.S. (Kansas State University), B.S. (Abilene Christian University), Assistant Professor, Department of Food Science, 2020.
Acurio, Danielle D., Ph.D. (Rocky Mountain University), B.S. (Louisiana State University), B.S. (Louisiana Tech University), Clinical Assistant Professor, Department of Communication Disorders and Occupational Therapy, 2023.
Adam, Thomas, Ph.D., M.A. (University of Leipzig), Professor, Department of Political Science, 2020, 2022.
Adams, Carris, M.F.A. (University of Chicago), B.F.A. (University of Texas at Austin), Visiting Professor, School of Art, 2022.
Adams, Douglas James, Ph.D., M.A. (University of Arizona), Associate Professor, Department of Sociology and Criminology, 1995, 2002.
Adams, Paul D., Ph.D. (Case Western Reserve University), B.S. (Louisiana State University), Professor, Department of Chemistry and Biochemistry, 2006, 2021.
Adler, Jacob, Ph.D., A.B. (Harvard University), Associate Professor, Department of Philosophy, 1984, 1991.

Ahrendsen, Bruce L., Ph.D., M.S. (North Carolina State University), B.S. (lowa State University), Professor, Department of Agricultural Economics and Agribusiness, 1990, 2007.
Airola, Denise T., Ph.D., M.S. (University of Arkansas), B.S. (University of New York), Assistant Professor, Department of Curriculum and Instruction, 2013.
Al Faouri, Radwan A., Ph.D. (University of Arkansas), Research Assistant Professor, Nanotechnology, 2015.
Alam, M. Sarwar, Ph.D. (University of Arkansas), M.S. (Pittsburg State University), M.S. (University of Chittagong, Bangladesh), B.A. (University of Chittagong), Instructor, Middle East Studies Program, 2010.
Allbright, Sara, M.S.W (University of Arkansas), B.S. (John Brown University), Lecturer, School of Social Work, 2018.
Allee, Kristian, Ph.D., M.B.A. (Indiana University), B.S. (Brigham Young University), Associate Professor, William Dillard Department of Accounting, Garrison/Wilson Chair in Accounting, 2016.
Allen, Amy L., M.L.I.S. (University of Alabama), B.A. (University of Arkansas), Assistant Librarian, University Libraries, 2008, 2010.
Allen, Jeremy L., D.M.A. (Cleveland Institute of Music), M.M. (University of Kentucky), B.S. (John Brown University), Instructor, Department of Music, 2018, 2021.
Allison, Kayla, Ph.D., (Indiana University-Bloomington), M.A. (University of Arkansas), B.A. (Indiana University-Bloomington), Assistant Professor, Department of Sociology and Criminology, 2020.
Allison, Neil T., Ph.D. (University of Florida), B.S. (Georgia College), Associate Professor, Department of Chemistry and Biochemistry, 1980.
Almahakeri, Mohamed, Ph.D., M.S.M.E. (Queen's University), Teaching Assistant Professor, Department of Mechanical Engineering, 2020.
Almenara, Erika, Ph.D. (University of Michigan), M.A. (University of Wisconsin-Milwaukee), B.A. ( Feminine University of the Sacred Heart), Associate Professor, Department of World Languages, Literatures and Cultures, 2015, 2022.
Almodovar Montanez, Jorge L., Ph.D. (Colorado State University), Associate Professor, Ralph E. Martin Department of Chemical Engineering, Ralph E. Martin Professorship in Chemical Engineering, 2018.

Aloia, Lindsey S., Ph.D. (Pennsylvania State University), M.A. (University of Delaware), B.A. (College of New Jersey), Associate Professor, Department of Communication, 2015.
Aloysius, John, Ph.D. (Temple University), B.S. (University of Colombo, Sri Lanka), Professor, J.B. Hunt Transport Department of Supply Chain Management, Oren Harris Chair in Logistics, 1995, 2017.
Alrubaye, Adnan A., Ph.D., M.Ed. (University of Arkansas), M.Sc. (University of Baghdad), Assistant Professor, Department of Poultry Science, Department of Biological Sciences, 2016, 2021.
Altom, Carol, M.B.A. (San Diego State University), B.S. (United States Naval Academy), Instructor, Operations Management Program, 2012. Alverson, Andrew James, Ph.D. (University of Texas at Austin), M.S. (lowa State University), B.S. (Grand Valley State University), Associate Professor, Department of Biological Sciences, 2012, 2018.
Alwood, Nancy D., Ph.D., M.S. (University of Arkansas), Instructor, Department of Psychological Science, 2012.
Aly, Mohamed H., Ph.D. (Texas A\&M), M.S., B.S. (Zagazig University), Associate Professor, Department of Geosciences, 2013, 2020.
Alzouwain, Hawraa, Ph.D., M.ED. (University of Arkansas), B.A. (Wasit University, Iraq), Instructor, Department of World Languages, Literatures and Cultures, 2021.
Amason, Trish, Ph.D. (Purdue University), M.A. (University of Kentucky), B.S.E. (University of Arkansas), Associate Professor, Department of Communication, 1994, 2000.
Amirvaghefi, Maryamsadat, M.F.A. (University of Arkansas), B.F.A.
(Sooreh Art University, Tehran), Instructor, School of Art, 2017.

Anand, Abhijith, Ph.D. (University of Waikato), M.I.S. (University of Wollongog), B.E. (K.S. Institute of Technology), Assistant Professor, Department of Information Systems, 2017.
Anderson, John D., Ph.D. (Oklahoma State University), M.S. (Arkansas State University), B.S. (College of the Ozarks), Professor, Department of Agricultural Economics and Agribusiness, 2020.
Anderson, Paula, M.S., B.S. (University of Arkansas), Instructor, Department of Geosciences, 2014.
Andree, David, M.F.A. (State University of New York), B.F.A.
(Minneapolis College of Art and Design), Assistant Professor, School of Art, 2015.
Andree, Kara M., M.F.A. (State University of New York at Buffalo), B.F.A. (Minneapolis College of Art and Design), Instructor, School of Art, 2016.
Andrews, David, Ph.D. (Syracuse University), M.S., B.S.E.E. (University of Missouri-Columbia), Professor, Department of Computer Science and Computer Engineering, Thomas Mullins Chair of Computer Science and Computer Engineering, 2008.
Andrus, Edward, Ph.D., M.A. (University of Arkansas), B.A. (University of Utah), Instructor, Department of History, 2021.
Angel, Christopher C., M.A. (University of Arkansas), B.A. (Arkansas
Tech University), Instructor, Middle East Studies Program, 2015.
Angton, Alexia, Ph.D., M.S., B.A. (lowa State University Ames),
Assistant Professor, Department of Sociology and Criminology, 2022.
Antov, Nikolay Atanasov, Ph.D. (University of Chicago), M.A. (Bilkent University, Turkey), B.A. (American University in Bulgaria), Associate Professor, Department of History, 2011, 2017.
Apple, Laurie Marie McAlister, Ph.D. (Oklahoma State University), M.S., B.S. (University of Arkansas), Associate Professor, School of Human Environmental Sciences, 2000, 2007.
Arellano, Betina, M.A. (University of Arkansas), B.A. (Universidad Nacional del Sur, Argentina), Instructor, Department of World Languages, Literatures and Cultures, 2016.
Arenberg, Nancy M., Ph.D. (University of Arizona), M.A. (University of Illinois, Champaign-Urbana), B.A. (Grinnell College), Associate Professor, Department of World Languages, Literatures and Cultures, 1996, 2002.
Armstrong, asher, D.M.A. (University of Toronto), Teaching Assistant Professor, Department of Music, 2020.
Arnold, Mark E., Ph.D., B.S. (Northern Illinois University), A.S. (Rock Valley College), Associate Professor, Department of Mathematical Sciences, 1993, 1999.
Atungulu, Griffiths Odhiambo, Ph.D., M.S. (Iwate University, Japan), B.S. (Jomo Kenyatta University of Agriculture and Technology, Kenya), Associate Professor, Department of Food Science, 2013, 2019.
Atwood, Casey, B.S.W. (University of Arkansas), Lecturer, School of Social Work, 2013.
Atwood, T. J., Ph.D. (University of Illinois), M.B.A. (University of Texas at Austin), B.S. (Western Kentucky University), Associate Professor, William Dillard Department of Accounting, 2014.
Austin, Shawn, Ph.D., M.A. (University of New Mexico), B.A. (Brigham Young University-Idaho), Associate Professor, Department of History, 2015.

Avalos, Lisa, Ph.D. (Northwestern University), J.D. (New York University), M.A., B.A. (Northwestern University), Associate Professor, School of Law, 2013.
Ayala, Jose Transito, M.A., B.A. (University of Arkansas), Lecturer, Department of Political Science, 2021.

\section*{B}

Bacon, Robert Keith, Ph.D. (Purdue University), M.S., B.S.A., (University of Arkansas), Professor, Department of Crop, Soil and Environmental Sciences, 1984, 1993.

Bailey, Carlton, J.D. (University of Chicago), B.A. (Talladega College), Professor, School of Law, Robert A. Leflar Professor of Law, 1978, 2005. Bailey, Constance, Ph.D., M.A. (University of Missouri-Columbia), B.A. (Alcorn State University), Assistant Professor, Department of English, 2016.

Bailey, Tameka A., Ph.D. (University of Arkansas), B.S. (University of Arkansas-Pine Bluff), Research Assistant Professor, Department of Biological Sciences, 2017.
Baker, Emily, M.Arch. (Cranbrook Academy of Art), B.Arch. (University of Arkansas), Assistant Professor, Department of Architecture, 2017.
Balachandran, Kartik, Ph.D., M.S. (Georgia Institute of Technology), B.S. (National University of Singapore), Associate Professor, Department of Biomedical Engineering, 2012, 2018.
Balda, Juan Carlos, Ph.D. (University of Natal), B.S. (Universidad Nacional del Sur), University Professor, Department of Electrical Engineering, 1989, 2013.
Ballentine, Hope, D.N.P. (University of Arkansas), M.S.N. (Vanderbilt University), B.A. (Harding University), Teaching Assistant Professor, Eleanor Mann School of Nursing, 2014, 2018.
Banks, Jeff, M.S.O.M. (University of Arkansas), M.S. (Oklahoma State University), B.S. (University of Arkansas), Instructor, Operations Management Program, 2020.
Banton, Caree A., Ph.D. (Vanderbilt University), M.A. (University of Ghana), M.A. (University of New Orleans), B.A./B.P.A. (Grambling State University), Associate Professor, Department of History, 2013, 2019.
Baptist, Najja K., Ph.D. (Howard University), M.A. (Jackson State University), B.A. (North Carolina Central University), Assistant Professor, Department of Political Science, 2020.
Baranello, Micaela, Ph.D., M.A. (Princeton University), B.A. (Swarthmore College), Assistant Professor, Department of Music, 2017.
Barber, Thomas, Ph.D., M.S., B.S. (University of Arkansas), Professor, Department of Crop, Soil and Environmental Sciences, 2007, 2016.
Barkat, Sophia, Ph.D., M.A. (Northern Arizona University), B.A. (Mount Holyoke College), Visiting Assistant Professor, Department of Political Science, 2021.
Barnes, Ty, M.F.A. (University of Arkansas), B.F.A. (Mississippi State University), Instructor, School of Art, 2022.
Barnett, Tracey, PhD. (University of Texas at Arlington), M.S.W. (University of Alabama), Assistant Professor, School of Social Work, 2018.

Barraza-Lopez, Salvador, Ph.D. (University of Illinois-UrbanaChampaign), B.S. (Instituto Politecnico Nacional de Mexico), Associate Professor, Department of Physics, 2011, 2016.
Barrett, David A., Ph.D., M.A. (University of Arkansas), B.A. (Hendrix College), Instructor, Department of Philosophy, 2014.
Barry, Michelle, Ph.D., M.S.C.E., B.S.C.E. (Texas A\&M University), Associate Professor, Department of Civil Engineering, 2019.
Barta, Kathleen M., Ed.D. (University of Arkansas), M.S. (Boston College), B.S. (Marquette University), Associate Professor, Retired from NURS in 2016, 1984, 1998.
Barton, Ariel, Ph.D., M.S. (University of Chicago), B.S. (Harvey Mudd College), Associate Professor, Department of Mathematical Sciences, 2016, 2021.
Bateh, Justin, Ph.D. (University of Suderland-London), Instructor, Operations Management Program, 2020.
Bateman, Nick, Ph.D. (Mississippi State University), B.S. (University of Arkansas-Monticello), Assistant Professor, Department of Entomology and Plant Pathology, 2016.
Baum, Jamie I., Ph.D., B.S. (University of Illinois-Urbana-Champaign), Associate Professor, Department of Food Science, 2011, 2018.
Bavon, AI, Ph.D., M.S. (Florida State University), Professor, Clinton School of Public Service, 2008.

Bayram, A. Burcu, Ph.D. (Ohio State University), M.I.S. (North Carolina State University), B.A. (Middle East Technical University), Associate Professor, Department of Political Science, 2016, 2021.
Beam, Caroline, Ph.D., M.S. (University of California), B.S. (Princeton University), Teaching Assistant Professor, Operations Management Program, 2013.
Bean, Jeffrey, M.B.A. (University of Arkansas), B.A. (Rhodes College), Instructor, Operations Management Program, 2008.
Beard, Lonnie Ray, LL.M. (New York University), J.D. (University of Arkansas), B.A. (Arkansas State University), Professor, School of Law, 1983.

Beasley, Jennifer G., Ed.D. (University of Virginia), M.A. (Wichita State University), B.A. (Kansas State University), Clinical Associate Professor, Department of Curriculum and Instruction, 2009, 2018.
Beaulieu, Jeremy M., Ph.D. (Yale University), M.S., B.S. (California Polytechnic State University), Associate Professor, Department of Biological Sciences, 2016, 2021.
Beaupre, Steven J., Ph.D. (University of Pennsylvania), M.S., B.S. (University of Wisconsin), Professor, Department of Biological Sciences, 1995, 2006.
Bechtel, Don, B.A. (Lebanon Valley College), Instructor, J.B. Hunt Transport Department of Supply Chain Management, 2006.
Beck, Dennis E., Ph.D. (University of Florida), B.S. (Pennsylvania State University), Associate Professor, Department of Curriculum and Instruction, 2010, 2016.
Becknell, Natalie K., M.S.C.E., B.S.C.E. (University of Arkansas), Instructor, Department of Civil Engineering, 2012.
Becnel, Jennifer N., Ph.D. (Arizona State University), M.A. (University
of California-San Francisco). B.A. (San Diego State University), Assistant Professor, School of Human Environmental Sciences, 2014.
Becqué, Helen, (Hochschule München für Musik und Theater), Instructor, Department of Music, 2020.
Befus, Kevin, Ph.D. (University of Texas at Austin), M.S. (University of Colorado Boulder), B.S. (Wheaton College), Assistant Professor, Department of Geosciences, 2020.
Behrend, Douglas A., Ph.D. (University of Minnesota), B.A. (Kalamazoo College), Professor, Department of Psychological Science, 1989, 2009.
Beike, Denise R., Ph.D., B.A. (Indiana University), Professor, Department of Psychological Science, 1995, 2010.
Beitle, Karen, M.S.(University of Arkansas), B.S. (University of Pittsburgh), Instructor, Ralph E. Martin Department of Chemical Engineering, .
Beitle, Robert R., Ph.D., M.S.Ch.E., B.S.Ch.E. (University of Pittsburgh), Professor, Ralph E. Martin Department of Chemical Engineering, Jim L. Turpin Professorship in Chemical Engineering, 1993, 2006.
Bell, Karmen V., M.Ed. (Indiana Wesleyan University), Clinical Instructor, Department of Curriculum and Instruction, 2015.
Bell, Steven M., Ph.D. (University of Kansas), M.A. (University of Kentucky), B.A. (University of Kansas), Associate Professor, Department of World Languages, Literatures and Cultures, 1992.
Bellaiche, Laurent, Ph.D., M.S., B.S. (University of Paris VI, France), Distinguished Professor, Department of Physics, 1999, 2016.
Benamara, Mourad, Ph.D., M.S. (University of Toulouse III, France), Assistant Professor, Nanotechnology, 2007.
Benbrahim, Dina, M.F.A. (University of Florida), M.A. (Simon Fraser University), B.A. (Simon Fraser University), Endowed Assistant Professor, School of Art, 2021.
Bengtson, Ed, Ph.D. (University of Georgia), Ed.S. (George Washington University), M.A. (California State University-Sacramento), B.S. (Pennsylvania State University), Associate Professor, Department of Curriculum and Instruction, 2010, 2016.

Bennett, Marion, Ph.D. (University of North Carolina at Chapel Hill), M.S.W. (University of Pennsylvania), B.S.W (Hampton University), Assistant Professor, School of Social Work, 2023.
Bentley, Christa, Ph.D., M.A. (University of North Carolina at Chapel Hill), B.A., (Texas Christian University), Assistant Professor, Department of Music, 2022.
Benton, Hilda Morayma, M.A. (University of Arkansas), B.A. (Chihuahua Institute of Technology), Instructor, Department of World Languages, Literatures and Cultures, 2009.
Bergdall, Joohn, Ph.D. (Brandeis University), B.S. (University of Minnesota), Assistant Professor, Department of Mathematical Sciences, 2022.

Bergman-Lanier, Leyah, Ph.D. (Claremont Graduate University), Instructor, English Language and Cultural Studies Program, 2014.
Berkovich, Nadja, Ph.D. (University of Illinois), M.A. (Boston College), B.A. (St. Petersburg Pedagogical Herzen University), Teaching Associate Professor, Department of World Languages, Literatures and Cultures, 2015, 2023.
Bernhardt-Barry, Michelle, Ph.D., M.S.C.E., B.S.C.E. (Texas A\&M University), Associate Professor, Department of Civil Engineering, 2013, 2019.

Bertucci, Matthew, Ph.D., M.S. (North Carolina State University), B.S. (Spring Hill College), Assistant Professor, Department of Horticulture, 2020.

Bhattacharya, Puja, Ph.D., M.A. (Ohio State University), M.S. (Indian Statistical Institute), B.S. (Presidency College), Assistant Professor, Department of Economics, 2019.
Bhave, Ashutosh, Ph.D., M.S. (University of Texas Dallas-Naveen Jindal School of Management), B.Eng. (University of Pune-India), Assistant Professor, Department of Marketing, 2022.
Biehle, Scott, M.L.A. (University of Texas at Austin), B.A. (St. Olaf College), Teaching Associate Professor, Department of Landscape Architecture, 2012, 2023.
Billig, Noah Scott, Ph.D. (Clemson University), M.Ur.P., M.L.A., B.A. (University of Minnesota), Associate Professor, Department of Landscape Architecture, 2011, 2018.
Blackwell, Marlon, M.Arch. (Syracuse University), B.Arch. (Auburn University), Distinguished Professor, Department of Architecture, 1992, 2010.

Blair, Alissa, Ph.D. (University of Wisconsin-Madison), M.E.D. (University of Notre Dame), B.A. (Saint Mary's College), Assistant Professor, Department of Curriculum and Instruction, 2020.
Blakinger, John, Ph.D., M.A. (Stanford University), B.A. (Wesleyan University), Associate Professor, School of Art, Endowed Chair in Art History, 2020.
Blisard, Paul, Ed.D. (University of Arkansas), M.C., B.S., B.S. (Southwest Missouri State University), Clinical Assistant Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2014. Bluhm, Burt H., Ph.D., M.S. (Purdue University), B.S. (University of Oklahoma), Associate Professor, Department of Entomology and Plant Pathology, 2008, 2014.
Blunschi, Jane, M.F.A. (University of Arkansas), B.A. (University of Louisiana at Lafayette), Instructor, Department of English, 2018.
Boelkins, Jonathan, M.Arch. (Washington University in St. Louis), B.Arch. (University of Arkansas), Instructor, Department of Architecture, 2017.

Booker, M. Keith, Ph.D. (University of Florida), M.S., M.A. (University of Tennessee), B.A. (Vanderbilt University), Professor, Department of English, 1990, 1997.
Boss, Steve K., Ph.D. (University of North Carolina at Chapel Hill), M.S. (Utah State University), B.S. (Bemidji State University), University Professor, Department of Geosciences, 1996, 2022.

Bostian-Neal, Elisabeth, M.S.W., B.S.W. (University of Arkansas), Lecturer, School of Social Work, 2020.
Bostick, David A., Ed.D. (Baker University), M.A. (Fort Hays State University), B.A. (University of Oklahoma), Teaching Associate Professor, School of Journalism and Strategic Media, 2019, 2023.
Bottje, Walter G., Ph.D. (University of Illinois-Urbana-Champaign), M.S. (Southern Illinois University), B.S. (Eastern Illinois University), Professor, Department of Poultry Science, 1985, 1993.
Bouchillon, Brandon C., Ph.D. (Texas Tech University), Associate Professor, School of Journalism and Strategic Media, 2019, 2023.
Bourland, Fred, Ph.D. (Texas A\&M University), M.S., B.S.A. (University of Arkansas), Professor, Department of Crop, Soil and Environmental Sciences, 1988.
Bowers, Andrew L., Ph.D. (University of Tennessee Health Science Center), M.A., B.A. (University of Tennessee), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2012, 2019.
Bowers, Lisa Marie, Ph.D. (University of Tennessee Health Science Center), M.A., B.A. (Louisiana State University), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2012, 2019.
Bowles, Freddie A., Ph.D., M.A. (University of Arkansas), B.A. (Arkansas State University), Associate Professor, Department of Curriculum and Instruction, 2004, 2013.
Bowling, Hilary, D.N.P. (University of Pittsburgh), M.S.N., B.S.N. (University of Arkansas), Clinical Assistant Professor, Eleanor Mann School of Nursing, 2014, 2022.
Bowman, Jennifer, M.S., B.S. (University of Arkansas), Instructor, School of Human Environmental Sciences, 2020.
Bowman, Margaret Warigia, Ph.D. (Harvard University), Professor, 2012.

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Catron-Ping, Peggy Lee, Ed.D. (University of Arkansas), M.T.S. (Phillips Theological Seminary), M.A. (Missouri State University), B.A. (Central Bible College), Instructor, Department of Communication, 2004.
Cavell, Timothy A., Ph.D. (Louisiana State University), M.S. (Texas A\&M University), B.A. (Louisiana State University), Professor, Department of Psychological Science, 2002.
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Chapman, Kate M., Ph.D., M.S. (Penn State University), B.A. (New Florida College), Teaching Assistant Professor, Department of Psychological Science, 2016.
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Chen, Jialie, Ph.D. (Cornell University), B.A. (Shanghai University of Finance and Economics), Assistant Professor, Department of Marketing, 2018.

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Chen, Zhong, Ph.D. (North Carolina State University), M.Eng. (National University of Singapore), B.S. (Zhejiang University), Assistant Professor, Department of Electrical Engineering, 2015.
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Chevrier, Vincent Francois, Ph.D. (CEREGE, Aix-en-Provence, France), M.E.S. (University Paris VII), B.S. (Academy of Versaille, France), Research Associate Professor, Department of Chemistry and Biochemistry, 2005.

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Churchill, Hugh O.H., Ph.D., A.M. (Harvard University), B.A. (Oberlin College), B.M. (Oberlin Conservatory of Music), Associate Professor, Department of Physics, 2015, 2021.
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Clausen, Ed, Ph.D., M.S.Ch.E., B.S.Ch.E. (University of MissouriRolla), University Professor, Ralph E. Martin Department of Chemical Engineering, Charles W. Oxford Professorship in Chemical Engineering, 1981, 2018.
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Cleveland, Todd, Ph.D. (University of Minnesota), M.A., B.A. (University of New Hampshire), Professor, Department of History, 2015, 2021.
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Clowney, Stephen, J.D. (Yale University), A.B. (Princeton University), Associate Professor, School of Law, 2014.

Cochran, Mark J., Ph.D., M.S. (Michigan State University), B.S.
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Cochran, Robert Brady, Ph.D. (University of Toronto), M.A., B.S. (Northwestern University), Professor, Department of English, 1976, 1987.
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Dobbs, Page, Ph.D., M.S., B.S., (University of Arkansas), Assistant Professor, Department of Health, Human Performance and Recreation, 2020.

Dobrzykowski, David, Ph.D., M.B.A., B.B.A. (University of Toledo), Associate Professor, J.B. Hunt Transport Department of Supply Chain Management, 2019.
Dobrzykowski, Sarah, J.D. (Ohio Northern University), M.O.D., B.S.B.A.
(Bowling Green State University), Instructor, William Dillard Department of Accounting, 2019.
Domínguez, Freddy C., Ph.D., M.A. (Princeton University), B.A. (Brown University), Assistant Professor, Department of History, 2014.
Donatelli, David, M.A. (Central Michigan University), B.A. (University of Pittsburgh), Instructor, Operations Management Program, 2014.
Dong, Bin, Ph.D. (lowa State University), B.S. (Xiamen University), Assistant Professor, Department of Chemistry and Biochemistry, 2022.
Donoghue, Annie, Ph.D. (F. Edward Herbert School of Medicine), M.S. (Texas A\&M University), B.S. (San Diego State University), Research Professor, Department of Poultry Science, 2000.
Donohue, Jenna L.A., Ph.D., M.A. (University of California, Los Angeles), M.Ed., B.S., B.A. (Notre Dame), Assistant Professor, Department of Philosophy, 2023.
Dopp, Alex R., Ph.D., M.A. (University of Missouri), B.A. (University of Michigan), Assistant Professor, Department of Psychological Science, 2016.

Dorjee, Thupten, Ph.D. (Foreign Institution), Instructor, Humanities Program, 2008.
Dorogan, Vitaliy, Ph.D. (University of Arkansas), Assistant Professor, Nanotechnology, 2011.
Doss, Will, Ph.D. (Texas Tech University), M.S., B.S., (Texas A\&M University), Assistant Professor, Department of Agricultural Education, Communications and Technology, 2022.
Doucet, Annie, Ph.D., M.A. (Tulane University), B.A. (Southeastern Louisiana University), Assistant Professor, Department of World Languages, Literatures and Cultures, 2020.
Douglas, Marlis R., Ph.D., M.S., B.S. (University of Zurich), Professor, Department of Biological Sciences, Bruker Life Sciences Chair, 2012.
Douglas, Michael Edward, Ph.D. (University of Georgia), M.S., B.S. (University of Louisville), Professor, Department of Biological Sciences, 21st Century Chair in Global Change Biology, 2011.

Dowdle, Andrew J., Ph.D. (Miami University), M.A. (University of lowa), B.A. (University of Tennessee), Professor, Department of Political Science, 2003, 2015.
Dowling, Ashley Patrick Gregg, Ph.D. (University of Michigan-Ann
Arbor), B.S. (University of Arizona), Professor, Department of Entomology and Plant Pathology, 2008, 2019.
Drawve, Grant R., Ph.D. (University of Arkansas at Little Rock), M.A., B.A. (Southern Illinois University), Associate Professor, Department of Sociology and Criminology, 2016, 2021.
Dridi, Sami, Ph.D., M.S. (National Polytechnic Institute of Lorraine, France), B.S. (Superior Institute of Mateur, Tunisia), Professor, Department of Poultry Science, 2013, 2018.
Driver, Nelson G., B.S. (University of Arkansas), Instructor, Department of Finance, 1997.
Drolen, Rebecca, M.F.A., B.A. (Indiana University, Bloomington), Assistant Professor, School of Art, 2015.
Du, Wei, Ph.D. (Institute of Semiconductors, Chinese Academy of Science), B.S. (Peking University), Associate Professor, Department of Electrical Engineering, 2008, 2022.
Du, Yuchun, Ph.D. (Kagoshima University, Japan), B.S. (Shaanxi University of Technology, China), Associate Professor, Department of Biological Sciences, 2007, 2013.
Dumond, Gregory, Ph.D. (University of Massachusetts), M.S. (Texas Tech University), B.S. (University of Texas El Paso), Associate Professor, Department of Geosciences, 2010, 2018.
Dunbar, Diana, M.S.N. (University of Central Arkansas), B.S.N. (University of Central Oklahoma), Clinical Instructor, Eleanor Mann School of Nursing, 2015, 2019.
Duncan, James M., Ph.D. (Florida State University), M.S. (University of Arkansas), Instructor, School of Human Environmental Sciences, 2017.
Durand-Morat, Alvaro, Ph.D., M.S. (University of Arkansas), B.S.E.
(National University of Entre Rios), Assistant Professor, Department of Agricultural Economics and Agribusiness, 2016.
DuRant, Sarah Elizabeth, Ph.D. (Virginia Polytechnic Institute and State University), B.S. (University of South Carolina), Associate Professor, Department of Biological Sciences, 2017, 2021.
Durdik, Jeannine M., Ph.D. (Johns Hopkins University), B.S. (Purdue University), Professor, Department of Biological Sciences, 1994, 2004. Díaz Montemayor, Gabriel, M.L.A. (Auburn University), B.Arch. (Universidad Autónoma de Chihuahua), Assistant Professor, Department of Landscape Architecture, 2019.

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Edmonston, Craig, M.S. (University of Kansas), B.S. (Kansas State University), Instructor, Department of Health, Human Performance and Recreation, 2016.
Edwards, Martin, Ph.D., M.Sc., M.Math. (University of Warwick), Assistant Professor, Department of Chemistry and Biochemistry, 2020.
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Edwards, Vincent A., M.F.A. (Herron School of Art and Design), B.F.A. (Indiana University), Instructor, School of Art, 2016.
Efstathiou, Kes, M.F.A. (Rochester Institute of Technology), B.A. (Montana State University), Visiting Assistant Professor, School of Art, 2022.

Egan, Martin J., Ph.D., B.Sc. (University of Exeter, United Kingdom), Assistant Professor, Department of Entomology and Plant Pathology, 2016.

Eidelman, Scott H., Ph.D. (University of Kansas), B.A. (University of Wisconsin-Madison), Associate Professor, Department of Psychological Science, 2008, 2013.

Ekhalid, Amnee, Ph.D. (University of Missouri), M.S. (University of North Texas), B.A. (University of North Texas), Assistant Professor, Department of Communication, 2023.
Eksioglu, Burak, Ph.D. (University of Florida), M.S.E.B.M. (University of Warwick), B.S.I.E. (Bogazici University), Professor, Department of Industrial Engineering, 2019.
Eksioglu, Sandra, Ph.D. (University of Florida), M.S.E.M.S.
(Mediterranean Agronomic Institute of Chania), B.S.B.A. (University of Tirana), Professor, Department of Industrial Engineering, Hefley Professor in Logistics and Entrepreneurship, 2019.
El-Ghazaly, Samir M., Ph.D. (University of Texas at Austin), M.S., B.S. (Cairo University), Distinguished Professor, Department of Electrical Engineering, 2007.
El-Shenawee, Magda O., Ph.D. (University of Nebraska-Lincoln), M.S., B.S. (Assiut University, Egypt), Professor, Department of Electrical Engineering, 2001, 2010.
Elberfeld, Nathaniel, S.M.Arch.S. (Massachusetts Institute of Technology), M.Arch. (Washington University in St. Louis), B.S. (William and Mary), Visiting Assistant Professor, Department of Architecture, 2021. Elbin, R. J., Ph.D. (Michigan State University), M.A., B.A. (University of New Orleans), Associate Professor, Department of Health, Human Performance and Recreation, 2013, 2018.
Elliot, Jonathan, M.S.W. (University of Texas at Austin), B.S.W. (University of Alabama), Lecturer, School of Social Work, 2019.
Ellstrand, Alan E., Ph.D. (Indiana University at Bloomington), M.B.A. (North Illinois University), B.S. (University of Illinois-Urbana), Professor, Department of Strategic, Entrepreneurship and Venture Innovation, 2000, 2002.

Elsaadany, Mostafa, Ph.D. (University of Toledo), Teaching Assistant Professor, Department of Biomedical Engineering, 2019.
Elsass, Angela Carlton, Ed.D., Ed.S. (University of Arkansas), M.Ed. (Harding University), B.S.E. (University of Central Arkansas), Clinical Associate Professor, Department of Curriculum and Instruction, 2010, 2016.

Embaye, Abel, Ph.D. (Georgia State University), M.A. (Tilburg University), B.A. (University of Asmara), Clinical Assistant Professor, Department of Economics, 2010.
Emory, DeAnna Jan, Ph.D. (University of Arkansas), M.S., B.S.N. (University of Oklahoma Health Sciences Center), Associate Professor, Eleanor Mann School of Nursing, 2012, 2018.
Endacott, Jason L., Ph.D., M.S. (University of Kansas), B.S. (Kansas State University), Associate Professor, Department of Curriculum and Instruction, 2011, 2016.
Engen, Mindy Sue, Ph.D., M.A. (Pennsylvania State University), B.S. (Georgia State University), Professor, Department of Sociology and Criminology, 2005, 2017.
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English, John R., Ph.D. (Oklahoma State University) P.E., M.S.O.R., B.S.E.E. (University of Arkansas), Professor, Department of Industrial Engineering, 1991, 1998.
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Espinoza, Leonel A., Ph.D., M.S. (University of Florida), B.S. (Iowa State University), Associate Professor, Department of Crop, Soil and Environmental Sciences, 2003, 2007.
Essary, Michael L., D.B.A. (Northcentral University), M.B.A. (Florida Institute of Technology), M.B.A. (University of South Carolina), B.S. (University of Tennessee), Instructor, Operations Management Program, 2019.

Estepp, Chris, Ph.D. (University of Florida), M.Ed., B.S. (Texas A\&M University), Associate Professor, Department of Agricultural Education, Communications and Technology, 2019.
Estes, Hanna, M.S., B.S. (University of Arkansas), Instructor, Department of Agricultural Education, Communications and Technology, 2014.
Estes, Stuart, M.S., B.S. (University of Arkansas), Instructor, Department of Agricultural Education, Communications and Technology, 2021.
Etges, William J., Ph.D. (University of Rochester), M.S. (University of Georgia), B.S. (North Carolina State University), Professor, Department of Biological Sciences, 1987, 2004.
Evans, Matthew James, Ph.D. (Northern Arizona University), M.A, B.A.
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Evans, Timothy A., Ph.D. (Indiana University), B.S. (Slippery Rock
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Evans-White, Michelle Allayne, Ph.D. (University of Notre Dame), M.S., B.S. (Kansas State University), Professor, Department of Biological Sciences, 2008, 2018.
Eveleth, William, M.B.A., B.B. (University of North Texas), Instructor, Operations Management Program, 2012.
Ewelukwa, Uche U., S.J.D., LL.M. (Harvard University), LL.M. (University College, London), J.D. equivalent (University of Nigeria), Professor, School of Law, Arkansas Bar Foundation Professor of Law, 2001, 2010. F
Fairey, Julian, Ph.D., M.S.C.E. (University of Texas at Austin), B.S.C.E. (University of Alberta, Canada), Associate Professor, Department of Civil Engineering, 2008, 2014.
Fan, Chenguang, Ph.D. (lowa State University), B.S. (Nanjing University), Assistant Professor, Department of Chemistry and Biochemistry, 2016.
Fang, Di, Ph.D., W.P. (Arizona State University), B.A. (Nankai University), Assistant Professor, Department of Agricultural Economics and Agribusiness, 2015.
Farmer, Amy Lynn, Ph.D., M.A. (Duke University), B.S. (Purdue University), University Professor, Department of Economics, Margaret Gerig and R.S. Martin Jr. Chair in Business, 1999, 2003.
Farnell, Chris, Ph.D., M.S.E.E., B.S.E.E. (University of Arkansas), Research Assistant Professor, Department of Electrical Engineering, 2021.

Faske, Travis, Ph.D. (Texas A\&M University), M.S. (Oklahoma State University), B.S. (Tarleton State University), Associate Professor, Department of Entomology and Plant Pathology, 2015.
Fatema, Jinat, M.S. (Sam Houston State University), B.S. (University of Dhaka), Instructor, Department of Mathematical Sciences, 2014.
Feldman, William A., Ph.D. (Queen's University), M.S. (Northwestern University), B.S. (Tufts University), Professor, Department of Mathematical Sciences, 1971.
Feldner, Matthew T., Ph.D. (University of Vermont), M.A. (West Virginia University), B.S. (University of Wisconsin-Stevens Point), Professor, Department of Psychological Science, 2005, 2015.

Feng, Song, Ph.D., M.S. (Chinese Academy of Sciences), B.S. (Yunnan University), Associate Professor, Department of Geosciences, 2013, 2018.

Ferguson, Alishia Juanelle, Ph.D., M.S., B.A. (University of Texas Arlington), Clinical Associate Professor, School of Social Work, 2008, 2022.

Fernandes, Katia de Avila, Ph.D. (Georgia Institute of Technology), M.S. (Instituto Nacional de Pesquisas Espaciais, Brazil), B.S. (Universidade Federal de Pelotas, Brazil), Assistant Professor, Department of Geosciences, 2019.
Fernstrom, Eric, Ph.D. (University of Arkansas), Teaching Assistant Professor, Department of Civil Engineering, 2014, 2021.
Ferrier, Gary D., Ph.D. (University of North Carolina-Chapel Hill), B.A. (University of Wisconsin-Madison), University Professor, Department of Economics, Lewis E. Epley Jr. Professorship in Economics, 1993, 2012. Fields, Lashawnda, Ph.D., M.S.W. (Washington University), Assistant Professor, School of Social Work, 2020.
Fillastre, Michelle D., PH.D., M.S. (Louisiana State University), Instructor, School of Human Environmental Sciences, 2020.
Fitzpatrick, Ellen Therese, Ph.D. (Michigan State University), Professor, Clinton School of Public Service, 2012.
Fitzpatrick, Kevin M., Ph.D. (State University of New York at Albany), M.A. (University of South Carolina at Columbia), B.A. (Susquehanna University), University Professor, Department of Sociology and Criminology, Bernice Jones Chair in Community, 2005, 2014.
Fitzpatrick, Lynn, M.Arch. (Rice University), B.S. (Cornell University), Teaching Associate Professor, Department of Architecture, 1999, 2023.
Flaccus, Janet A., LL.M. (University of Illinois-Urbana-Champaign), J.D., M.A. (University of California-Davis), Professor, School of Law, 1984.

Flynn, John, M.B.A., J.D. (Case Western Reserve University), B.S. (John Carroll University), Instructor, Operations Management Program, 2012.
Folan, John, M.Arch (University of Pennsylvania), B.S.Arch (University of Illinois), Professor, Department of Architecture, 2019.
Foley, Larry D., M.S. (University of Central Arkansas), B.A. (University of Arkansas), Professor, School of Journalism and Strategic Media, 1993, 2005.

Folse, Judith Anne Garretson, Ph.D. (University of Arkansas), M.B.A., B.B.A (Pittsburg State University), Professor, Department of Marketing, R.A. and Vivian Young Endowed Chair, 2022.

Forbes, Kristian M., Ph.D. (University of Jyväskylä), M.P.H. (Latrobe University), B.Sc. (Latrobe University), Assistant Professor, Department of Biological Sciences, 2018.
Forscher, Patrick, Ph.D. (University of Wisconsin), B.A. (Macalester College), Assistant Professor, Department of Psychological Science, 2017.

Foster, Sharon Elaine, Ph.D., LL.M. (University of Edinburgh, Scotland), J.D. (Loyola Marymount University), B.A. (University of California-Los Angeles), Associate Professor, School of Law, 2000, 2009.
Foster, William, LL.M. (New York University), J.D. (University of Arkansas), B.S. (University of Central Arkansas), Assistant Professor, School of Law, 2014.
Frank, Kate L., M.F.A. (University of Arkansas), B.F.A. (California State University-Los Angeles), Lecturer, Department of Theatre, 2006.
Franklin, Carly T.S., M.S.W. (University of Arkansas), Clinical Associate Professor, School of Social Work, 2014, 2021.
Franks, Lisa, D.N.P. (University of Missouri-Columbia), M.S.N., B.S.N. (University of Arkansas), Instructor, Eleanor Mann School of Nursing, 2014.

Frazier, Kimberly Frances, Ph.D. (University of South CarolinaColumbia), M.S., B.S.E. (University of Arkansas), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2007, 2013.

Fredrick, David Charles, Ph.D. (University of Southern California), M.A., B.A. (University of Kansas), Associate Professor, Department of World Languages, Literatures and Cultures, 1991, 1997.
Freeman, Katherine, M.S.W. (University of Georgia), B.A. (University of Arkansas), Lecturer, School of Social Work, 2017.
Freeze, Ron, Ph.D. (Arizona State University), M.B.A. (University of Missouri-Kansas City), B.S. (General Motors Institute), Clinical Professor, Department of Information Systems, 2015, 2021.
Friscoe, Louis F., M.S., B.S. (Embry Riddle Aeronautical University), Instructor, Operations Management Program, 2014.
Fritsch, Ingrid, Ph.D. (University of Illinois-Urbana-Champaign), B.S. (University of Utah), Professor, Department of Chemistry and Biochemistry, 1992, 2005.
Fritz, Angela I., Ph.D. (Loyola University), M.A. (University of WisconsinMadison), B.A. (University of lowa), Associate Librarian, University Libraries, 2014.
Fu, Huaxiang, Ph.D., M.S. (Fudan University), B.S. (University of Science and Technology of China), Professor, Department of Physics, 2002, 2017. Fugate, Brian, Ph.D., M.B.A., B.S. (University of Tennessee), Professor, J.B. Hunt Transport Department of Supply Chain Management, Oren Harris Chair in Transportation, 2015, 2018.
Fukushima, Tatsuya, Ph.D., M.A. (Oklahoma State University), B.A. (Kanto Gakuin University, Japan), Associate Professor, Department of World Languages, Literatures and Cultures, 2000, 2007.
Fuller, Serena M., Ph.D. (University of California, Davis), Associate Professor, School of Human Environmental Sciences, 2014.
Funkhouser, Eric M., Ph.D. (Syracuse University), M.A., B.A. (University of Nebraska-Lincoln), Professor, Department of Philosophy, 2002, 2016.
Furlong, Kimberley J., M.Arch. (U. Texas at Austin), B.F.A. (Pratt Institute), Associate Professor, Department of Interior Architecture and Design, 2013, 2018.

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Gadberry, M. Shane, Ph.D., M.S., B.S. (University of Arkansas), Professor, Department of Animal Science, 2006, 2019.
Gaduh, Arya, Ph.D. (University of Southern California), M.Phil. (Cambridge University), B.A. (University of California-Berkeley), Associate Professor, Department of Economics, 2013, 2019.
Gallagher, Brian P., Ph.D. (Colorado State University), M.S. (Florida Institute of Technology), B.Tech. (Peru State College), Instructor, Operations Management Program, 2019.
Gallagher, John M., Ph.D., M.S.W. (Arizona State University), B.A. (State University of New York at Plattsburgh), Associate Professor, School of Social Work, 2016, 2022.
Gallagher, Kaitlin, Ph.D., B.Sc. (University of Waterloo, Canada), Associate Professor, Department of Health, Human Performance and Recreation, 2015.
Gallini, Brian R., J.D. (University of Michigan-Ann Arbor), LL.M. (Temple University), B.A. (College of the Holy Cross), Professor, School of Law, 2008, 2011.
Ganio, Matthew Stueck, Ph.D. (University of Connecticut), M.S., B.S. (University of Georgia), Professor, Department of Health, Human Performance and Recreation, 2011, 2020.
Ganson, Judy, M.P.A. (University of California-Riverside), M.S.
(University of Illinois-Urbana-Champaign), B.A. (Purdue University), Associate Librarian, University Libraries, 2001.
Garcia Contreras, Rogelio, Ph.D., M.A. (University of Denver), B.A. (Universidad Nacional Autonoma de Mexico), Teaching Assistant Professor, Department of Strategic, Entrepreneurship and Venture Innovation, 2015.
Garner, Jerald, M.S. (University of Arkansas), B.S. (Park University), Instructor, Operations Management Program, 1997.

Garrett, B. J., M.S.N. (Angelo State University), Instructor, Eleanor Mann School of Nursing, 2018.
Garrison, Mary Elizabeth, Ph.D., M.S. (lowa State University), B.S. (Benedictine College), Professor, School of Human Environmental Sciences, 2014.
Gastineau, Jana, M.S., B.S. (Arkansas State University), Instructor, Department of Information Systems, 2022.
Gauch, John Michael, Ph.D. (University of North Carolina at Chapel Hill), M.Sc., B.Sc. (Queen's University, Canada), Professor, Department of Computer Science and Computer Engineering, 2008.
Gauch, Susan E., Ph.D. (University of North Carolina at Chapel Hill), M.Sc., B.Sc. (Queen's University, Canada), Professor, Department of Computer Science and Computer Engineering, 2007.
Gauri, Dinesh K., Ph.D., M.A. (State University of New York-Buffalo), M.S. (Indian Institute of Technology, New Delhi), Professor, Department of Marketing, Walmart Chair in Marketing, 2016.
Gay, Rocky, Ph.D. (Texas A\&M University), M.S. (U.S. Army War College \& Texas A\&M University), B.S. (U.S. Military Academy), Assistant Professor, Operations Management Program, 2019.
Gbur, Edward E., Ph.D., M.S. (The Ohio State University), B.S.
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Gea-Banacloche, Julio R., Ph.D. (University of New Mexico), Licenciado en Ciencias Fisicas (Universidad Autonoma de Madrid), Professor, Department of Physics, 1989, 2000.
Geng, Difei, Ph.D. (Vanderbilt University), M.A. (Southern Methodist University), M.A. (Nankai University), B.A. (Tianjin University of Finance and Economics), Assistant Professor, Department of Economics, 2016.
Ghadbian, Najib, Ph.D. (City University of New York), M.A. (City University of New York), M.A. (Rutgers University), B.Sc. (United Arab Emirates University), Associate Professor, Department of Political Science, 1999, 2005.
Gibeault, Michelle J., M.S. (University of North Carolina), B.A. (University of California, Berkeley), Assistant Librarian, University Libraries, 2013.
Gibson, Andrew R., Ph.D. (University of Arkansas), M.B.A. (London Business School), B.Sc. (University of Manchester Institute of Science and Technology), Instructor, J.B. Hunt Transport Department of Supply Chain Management, 2019, 2022.
Gibson, Kristen Elizabeth, Ph.D. (Johns Hopkins University), B.S. (University of Central Florida), Associate Professor, Department of Food Science, 2012, 2017.
Gibson, Tess, M.A. (University of South Dakota), M.L.S. (Emporia State University), B.A. (Baker University), Associate Librarian, University Libraries, 2005, 2011.
Gigantino, Jim, Ph.D. (University of Georgia), B.A. (University of Richmond), Professor, Department of History, 2010, 2018.
Gilber, Courtney, J.D., B.A. (University of Arkansas), Instructor, William Dillard Department of Accounting, 2022.
Gilbert, Kerry, M.A. (University of Georgia), B.A. (University of West Georgia), Instructor, School of Journalism and Strategic Media, 2018.
Gilbertson, Mary A., M.L.S. (University of North Texas), B.A. (University of Arkansas), A.A. (NorthWest Arkansas Community College), Associate Librarian, University Libraries, 2001, 2008.
Gilmet, Kelsey, Ph.D. (University of Illinois-Chicago), M.S.N. (University of Minnesota), B.A. (Kalamazoo College), Instructor, Eleanor Mann School of Nursing, 2016.
Girshner, Joshua M., M.A., B.A. (University of Arkansas), Instructor, Department of Mathematical Sciences, 2012.
Glade, Rachel E., Ph.D. (University of Arkansas), M.S. (University of Arkansas for Medical Sciences), M.A. (University of Arkansas), B.S. (University of Arkansas at Little Rock), Clinical Associate Professor,

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Gliszinski, Ryan, M.A., B.A. (University of Arkansas), Instructor, Department of Communication, 2018.
Goering, Christian Z., Ph.D., M.S. (Kansas State University), B.A. (Washburn University), Professor, Department of Curriculum and Instruction, 2007, 2018.
Goforth, Carol Rose, J.D., B.A. (University of Arkansas), University Professor, School of Law, Clayton N. Little Endowed Professor of Law, 1993, 2012.
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Goggin, Fiona, Ph.D. (University of California-Davis), B.S. (Cornell University), Professor, Department of Entomology and Plant Pathology, 2001, 2011.
Goodman-Strauss, Chaim, Ph.D., B.S. (University of Texas at Austin), Professor, Department of Mathematical Sciences, 1994, 2006.
Goodstein-Murphree, Ethel S., Ph.D. (University of Michigan-Ann Arbor), B.Arch., B.S. (City University of New York), Professor, Department of Architecture, 1992, 1998.
Gordon, Joel Samuel, Ph.D. (University of Michigan-Ann Arbor), B.A. (University of Illinois), Professor, Department of History, 1999, 2007.
Gosman, Alan R., Ph.D. (Harvard University), Associate Professor,
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Greene, Nicholas P., Ph.D. (Texas A\&M University), M.S., B.S. (University of South Carolina), Professor, Department of Health, Human Performance and Recreation, 2013, 2022.
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Grover, Varun, Ph.D. (University of Pittsburg), M.B.A. (Southern Illinois University), B.S. (Indian Institute of Technology), Distinguished Professor,

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Gruenewald, Jeffrey A., Ph.D. (Michigan State University), Professor, Department of Sociology and Criminology, 2019, 2022.
Gu, Jingping, Ph.D. (Texas A\&M University), M.A. (Peking University), B.A. (Renmin University of China, Bejiing), Associate Professor, Department of Economics, 2008, 2014.
Guo, Lei, Ph.D. (University of California, Berkeley), B.S. (Lanzhou University, China), Assistant Professor, Department of Civil Engineering, 2022.

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Haghighi, Mohammad, Ph.D. (Ohio University), Assistant Professor, Department of Communication Disorders and Occupational Therapy, 2019.

Hagstrom, Fran W., Ph.D. (Clark University), M.S. (University of Texas Health Science Center-Houston), M.A. (St. Louis University), B.A. (Southwest Baptist University), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2002, 2008.
Halbert, Katey, D.M.A. (University of lowa), M.M. (Ohio State University), B.M. (Bowling Green State University), Visiting Assistant Professor, Department of Music, 2021.
Hale, Micah, Ph.D., M.S.C.E., B.S.C.E. (University of Oklahoma), Professor, Department of Civil Engineering, 21st Century Leadership Chair in Civil Engineering, 2002, 2013.
Hall, David, M.S.N., B.S.N. (University of Arkansas), Instructor, Eleanor Mann School of Nursing, 2020.
Hall, Kevin D., Ph.D. (University of Illinois-Urbana-Champaign), M.S.C.E., B.S.C.E. (University of Arkansas), University Professor, Department of Civil Engineering, 1993, 2020.
Hallett, LewEllyn, M.F.A. (Bowling Green State University), B.A. (University of New Mexico), Instructor, Department of English, 2013.
Ham, Garret Richard, M.Div. (Yale University, J.D. (University of Arkansas), B.A.C.S. (Ouachita Baptist University), Instructor, Operations Management Program, 2019.
Ham, Richard, Ed.D. (University of Arkansas at Little Rock), M.A.S.
(Embry-Riddle Aeronautical University), B.S. (Park University), Instructor, Operations Management Program, 2014.
Ham-Holm, Lindsay S., Ph.D., M.A., B.A. (University of NebraskaLincoln), Associate Professor, Department of Psychological Science, 2007, 2012.
Hamilton, Clayton, Ph.D., M.S. (University of Arkansas), B.S.B.A. (United States Sports Academy), Instructor, Department of Health, Human Performance and Recreation, 2013.
Hamilton, John H., M.S., B.S. (University of Arkansas), Instructor, Department of Mechanical Engineering, 2002.
Hammel, Alice, D.M.A. (Shenandoah University), M.M. (Florida State University), B.M. (Shenandoah University), Instructor, Department of Music, 2016.
Hammig, Bart, Ph.D. (University of Kansas), M.P.H. (University of Kansas Medical Center), B.S. (University of Kansas), Professor, Department of Health, Human Performance and Recreation, 2008, 2018.

Hammond, Kelly, Ph.D. (Georgetown University), M.A. (Simon Frazer University), B.A. (Bishop's University), Associate Professor, Department of History, 2015, 2020.
Hanning, Casey Owens, Ph.D., M.S., B.S. (Texas A\&M University), Professor, Department of Poultry Science, 2000, 2017.
Hapgood, Thomas Layley, M.F.A., B.A. (University of Arizona),
Associate Professor, School of Art, 2005, 2012.
Harding, Lorna, M.S. (University of Alberta, Canada), B.A. (University of Western Ontario, Canada), Instructor, School of Human Environmental Sciences, 2004.
Hardke, Jarrod T., Ph.D. (Louisiana State University), B.S.A. (University of Arkansas), Professor, Department of Crop, Soil and Environmental Sciences, 2013, 2020.
Hare, J. Laurence, Ph.D., M.A. (University of North Carolina at Chapel Hill), B.A. (University of Tennessee at Chattanooga), Associate Professor, Department of History, 2010, 2015.
Hargis, Billy M., Ph.D., D.V.M. (University of Minnesota-Twin Cities), M.S. (University of Georgia), B.S. (University of Minnesota), Distinguished Professor, Department of Poultry Science, Sustainable Poultry Health Chair, 2000, 2017.
Harmon, Kevin, Ph.D., M.B.A., M.S. (Texas Tech University), B.S.
(Truman State University), Assistant Professor, Department of Information Systems, 2022.
Harrington, Brett P., M.F.A. (University of Arkansas), B.A. (University of Houston-Clear Lake), Instructor, 2007.
Harrington, Phil, Ph.D., M.S. (University of Notre Dame), B.S. (Whitworth College), Professor, Department of Mathematical Sciences, 2009, 2019.
Harris, Casey Taggart, Ph.D., M.A. (Pennsylvania State University), B.S. (Texas A\&M University), Professor, Department of Sociology and Criminology, 2011, 2023.
Harris, Flint, Ed.D., M.Ed., B.S.E (University of Arkansas), Instructor, Department of Marketing, 2023.
Harris, Leonard, Ph.D. (Cornell University), B.S. (University of Colorado, Boulder), Assistant Professor, Department of Biomedical Engineering, 2020.

Harriss, Edmund O., Ph.D. (Imperial College, London), M.M. (University of Warwick), Assistant Professor, Department of Mathematical Sciences, 2010, 2022.
Hartenberger, Craig, M.F.A. (Kent State University), B.F.A. (Missouri State University), Instructor, School of Art, 2022.
Harter, William G., Ph.D. (University of California-Irvine), B.S. (Hiram College), Professor, Department of Physics, 1986.
Hatfield, Joe, Ph.D. (University of Colorado), M.A. (Syracuse University), B.A. University of North Texas), Assistant Professor, Department of Communication, 2020.
Haydar, Adnan Fuad, Ph.D. (University of California-San Diego), M.A., B.A. (American University of Beirut), Professor, Department of World Languages, Literatures and Cultures, 1993.
Haydar, Paula Marie, Ph.D., M.F.A. (University of Arkansas), M.Ed., B.S. (University of Massachusetts), Associate Professor, Department of World Languages, Literatures and Cultures, 2006, 2023.
Hayes, Thomas P., Ph.D. (University of North Texas), M.Acc. (University of Missouri), B.A. (Westminster College), Teaching Associate Professor, William Dillard Department of Accounting, 2019.
Hays, Phillip D., Ph.D., M.S. (Texas A\&M University), B.S. (University of Arkansas), Assistant Professor, Department of Geosciences, 2017.
He, Maggie, Ph.D. (ETH Zürich), M.S. (University of Pennsylvania), B.S. (City College of New York), Assistant Professor, Department of Chemistry and Biochemistry, 2019.
Henry, Christopher Garrett, Ph.D. (University of Nebraska-Lincoln), M.S., B.S. (Kansas State University), Associate Professor, Department of Biological and Agricultural Engineering, 2011, 2018.

Henry, Erin E., Ph.D. (University of Connecticut), M.S. (University of Memphis), B.Acc. (Mississippi State University), Associate Professor, William Dillard Department of Accounting, 2019, 2023.
Henry, Leah Jean, Ph.D. (Texas Woman's University), M.A. (Michigan State University), B.S. (Texas A\&M University), Associate Professor, Department of Health, Human Performance and Recreation, 2008, 2011. Henry, Ralph Leroy, Ph.D., M.S. (Kansas State University), B.S.E. (University of Kansas), Distinguished Professor, Department of Biological Sciences, W.M. Keck Endowed Professorship, 1996, 2012.
Herman, Greg, M.Arch. (Rice University), B.Arch. (University of Cincinnati), Associate Professor, Department of Architecture, 1991, 1998. Hermanson, Karl, M.F.A. (University of South Dakota), B.A. (Dana College), Instructor, Department of Theatre, 2018.
Hernandez, Gaby, M.F.A. (University of Florida), B.A. (Universidad de Costa Rica), Endowed Associate Professor of Graphic Design, 2022.
Hernandez, Gaby, M.F.A. (University of Florida), B.A. (Universidad de Costa Rica), Endowed Associate Professor of Graphic Design, School of Art, 2021.
Hernandez, Sarah, Ph.D., M.S. (University of California, Irvine), B.S. (University of Florida), Associate Professor, Department of Civil Engineering, Walter E. Hicks and Blossom Russel Hicks Professorship for Infrastructure Engineering, 2015, 2021.
Hernandez-Miranda, Michael, Ph.D., M.A. (Texas A\&M University), B.A. (University of Oriente), Instructor, Department of World Languages, Literatures and Cultures, 2015.
Herold, Laura K., Ph.D., M.A. (University of Michigan), B.A. (Oberlin College), Teaching Assistant Professor, School of Human Environmental Sciences, 2015.
Herold, Warren, Ph.D. (University of Michigan), Instructor, Department of Philosophy, 2014.
Hershberger, Margaret, Ph.D., M.S. (University of Chicago), B.S. (The Ohio State University), Instructor, Department of Chemistry and Biochemistry, 2015.
Hertzog, Jacob, Ph.D. (University of Arkansas), M.M. (Manhattan School of Music), B.M. (Berklee College of Music), Assistant Professor, Department of Music, 2022.
Herzberg, Amy, M.F.A. (California Institute of the Arts), B.A. (Arizona State University), Distinguished Professor, Department of Theatre, 1989, 2015.

Herzog, Jacob, M.M. (Manhattan School of Music), B.M. (Berklee College of Music), Instructor, Department of Music, 2016.
Hestekin, Christa, Ph.D. (Northwestern University), B.S.Ch.E. (University of Kentucky), Associate Professor, Ralph E. Martin Department of Chemical Engineering, Ansel and Virginia Condray Endowed Professorship in Chemical Engineering, 2006, 2013.
Hestekin, Jamie A., Ph.D. (University of Kentucky), B.S.Ch.E. (University of Minnesota-Duluth), Professor, Ralph E. Martin Department of Chemical Engineering, Maurice E. Barker Chair in Chemical Engineering, 2006, 2017.

Hettiarachchy, Navam S., Ph.D. (University of Hull, England), M.S. (Edinburgh University, Scotland), B.S. (University of Madras, India), University Professor, Department of Food Science, 1992, 2006.
Hevel, Michael Stephen, Ph.D. (University of lowa), M.A. (Bowling Green State University), B.A. (University of Kansas), Associate Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2012, 2017.
Heyes, Colin David, Ph.D. (Georgia Institute of Technology), B.S. (Loughborogh University), Professor, Department of Chemistry and Biochemistry, 2008, 2021.
Heymsfield, Ernie, Ph.D. (City University of New York), M.S.C.E. (Polytechnic University), Associate Professor, Department of Civil Engineering, 2001, 2007.

Hicks, Morgan, M.F.A. (University of Arkansas), M.A. (Missouri State University), B.F.A. (Arkansas State University), Teaching Assistant Professor, Department of Theatre, 2007.
Higgins, Kristin Kay, Ph.D., M.S. (University of Arkansas), B.A. (Vanderbilt University), Associate Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2006, 2014. Hill, Julie, Ph.D. (University of Arkansas), M.E (Colorado State University), B.S. (Brigham Young University), Assistant Professor, 2023. Hill, Kennedy, Ph.D., M.P.A., B.A. (University of Arkansas), Lecturer, Department of Political Science, 2022.
Hinrichsen, Lisa, Ph.D., M.A. (Boston University), B.A. (Wellesley College), Associate Professor, Department of English, 2008, 2015. Hodges, Amy M., B.A. (Louisiana Tech College Acadian Campus), Instructor, 2005.
Hodges, Beverly, M.Ed., B.S.B.A. (University of Arkansas), Instructor, 2004.

Hodges, Karen L., Ph.D. (University of Arkansas), Lecturer, Graduate School and International Education, 2019.
Hoehle, Hartmut, Ph.D., B.Com. (Victoria University of Wellington), Visiting Professor, Department of Information Systems, 2013, 2022.
Hofer, Christian, Ph.D. (University of Maryland University College), B.A. (European School of Business), Associate Professor, J.B. Hunt Transport Department of Supply Chain Management, 2007, 2012.
Hoffpauir, Susan Annette, Ph.D. (University of Michigan-Ann Arbor), Distinguished Professor, Clinton School of Public Service, 2011.
Hogan, Adam S., M.A, M.F.A (Washington University in St. Louis), Assistant Professor, School of Art, 2014.
Holland, Brian, M.Arch.,(University of Pennsylvania), B.Arch., (California State Polytechnic University, Pomona), Assistant Professor, Department of Architecture, 2018.
Holland, Edward C., Ph.D., M.A. (University of Colorado, Boulder), B.A. (Princeton University), Associate Professor, Department of Geosciences, 2016, 2022.
Holm, Jeremy, M.A., B.S. (University of Nebraska), Instructor, Department of Psychological Science, 2008.
Holyfield, Christine E., Ph.D. (Pennsylvania State University), M.A. (University of Kansas), B.S. (Central Michigan University), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2017, 2022.
Holyfield, Lori C., Ph.D. (University of Georgia), M.A., B.S.E. (University of Arkansas), Professor, Department of Sociology and Criminology, 1995, 2012.

Hong, Ye "Abby", Ph.D. (University of Tennessee), M.S. (University of Illinois), B.S. (Nanjing University of Science and Technology), Teaching Assistant Professor, Department of Economics, 2022.
Hood, Shanda, Ph.D. M.S. (University of Arkansas), B.S. (University of Arkansas-Fort Smith), Teaching Assistant Professor, Department of Mathematical Sciences, 2013.
Hopkins, John D., Ph.D. (University of Arkansas), M.S., B.S. (Clemson University), Associate Professor, Department of Entomology and Plant Pathology, 2001.
Hossain, Md Amzad, Ph.D., M.A. (University of Virginia), B.S.S. (University of Dhaka), Assistant Professor, Department of Economics, 2022.

Houin, Cameron B., Ph.D. (University of Arkansas), Lecturer, Human Resource and Workforce Development Education Program, 2019.
Howard, John E., Ed.D. (John Hopkins University), M.A. (Bowie State University), Lecturer, Department of Curriculum and Instruction, 2020. Howard, Luke R., Ph.D., M.S. (University of Arkansas), B.S. (Purdue University), Professor, Department of Food Science, 2002.

Howie-Hickey, Erin, Ph.D. (University of South Carolina), B.S. (University of Maryland), Associate Professor, Department of Health, Human Performance and Recreation, 2016, 2022.
Hoyer, Jennifer M., Ph.D., M.A. (University of Minnesota-Twin Cities), B.A. (University of Tulsa), Associate Professor, Department of World Languages, Literatures and Cultures, 2007, 2013.
Hsu, Hung-Chia Scott, Ph.D. (University of North Carolina-Chapel Hill), M.A. (University of Southern California), B.A. (National Taiwan University), Associate Professor, Department of Finance, 2015, 2021.
Hu, Han, Ph.D. (Drexel University), Assistant Professor, Department of Mechanical Engineering, 2019, .
Hu, Jin, Ph.D. (Tulane University), B.S. (University of Science and Technology of China), Assistant Professor, Department of Physics, 2017.
Huang, Lifa, Ph.D., M.B.A. (University of Arkansas), M.S. (Southern Illinois University), Teaching Assistant Professor, Department of Finance, 2019.

Huang, Miaoqing, Ph.D. (George Washington University), B.S. (Fudan University), Associate Professor, Department of Computer Science and Computer Engineering, 2010, 2016.
Huang, Po-Hao Adam, Ph.D., M.S., B.S. (University of California-Los Angeles), Associate Professor, Department of Mechanical Engineering, 2006, 2012.
Huang, Quiqiong, Ph.D. (University of California-Davis), B.S. (Remin University of China), Professor, Department of Agricultural Economics and Agribusiness, 2013, 2018.
Huang, Xiao, Ph.D. (University of South Carolina), M.S. Georgia Institute of Technology (2016), B.S. (Wuhan University), Assistant Professor, Department of Geosciences, 2020.
Huang, Yan, Ph.D. (University of Wyoming), M.S. (Dankook University), B.S. (China Agricultural University), Assistant Professor, Department of Animal Science, 2015.
Huett, Briana Marie, Ph.D., M.S., M.P.A. (University of Arkansas), B.A. (Davidson College), Lecturer, Department of Political Science, 2021. Hughes, Claretha, Ph.D. (Virginia Polytechnic Institute and State University), M.S. (North Carolina State University), M.B.A. (University of Arkansas), B.A. (Clemson University), Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2004, 2017.

Huh, Michelle Boyong, M.I.D. (University at Texas, Austin), B.Arch. (Korea University), Assistant Professor, Department of Interior Architecture and Design, 2022.
Huitink, David, Ph.D., M.S.M.E., B.S.M.E. (Texas A\&M University), Associate Professor, Department of Mechanical Engineering, 2016, 2022. Hulen, Jeannie, M.F.A. (Louisiana State University), B.F.A. (Kansas City Art Institute), Professor, School of Art, 2002, 2018.
Hunt, Valerie H., Ph.D., J.D., B.A. (University of Arkansas), Associate Professor, Department of Political Science, 2005, 2014.
Hunter, Justin R., Ph.D. (University of Hawai'i at M\#noa), M.M., B.A. (University of Arkansas), Instructor, Department of Music, 2017.
Hunthrup, Mindy R., M.S., B.S.B.A. (Arkansas Tech University), Instructor, Operations Management Program, 2019.
Hurd, Debra, Ph.D., M.P.A., B.A. (University of Arkansas), Clinical Professor, School of Social Work, 1992, 2012.
Hurt, Bryan M., Ph.D. (University of Southern California), B.A. (Ohio State University), Assistant Professor, Department of English, 2019.
Hutchins, Rhett J., Ph.D. (University of Georgia), M.Ed., B.S. (Clemson University), Clinical Associate Professor, Department of Curriculum and Instruction, 2014, 2020.
Hutto, Gregory T., M.S. (Stanford University), B.S. (U.S. Naval Academy), Instructor, Operations Management Program, 2014.

Hux, Glenda, O.T.D. (Boston University), B.S. (University of Mississippi Medical Center), Assistant Professor, Department of Communication Disorders and Occupational Therapy, 2023.
Hyman, Jeremy S., C.Phil. (University of California, Los Angeles), M.A. (Princeton University), B.A. (University of Michigan), Instructor, Department of Philosophy, 2018.
I
Imbeau, Marcia B., Ph.D. (University of Connecticut), M.Ed. (University of Arkansas at Little Rock), B.A. (Hendrix College), Professor, Department of Curriculum and Instruction, 1991, 2013.
Irish, Shawn D., M.F.A. (University of Arkansas), B.A. (Missouri Southern State University), Associate Professor, Department of Theatre, 2013, 2020.

Issa, Nadia, Ph.D. (Academy of Fine Arts in Warsaw), Teaching Assistant Professor, School of Art, 2022.
Ivey, Mack, Ph.D., B.S. (University of Georgia), Associate Professor, Department of Biological Sciences, 1992, 1998.
Iyer, Shilpa, Ph.D. (University of Georgia), M.Sc., B.Sc. (University of Pune, India), Assistant Professor, Department of Biological Sciences, 2016.

J
Jacobs, Lynn Frances, Ph.D., M.A. (New York University), B.A. (Princeton University), Distinguished Professor, School of Art, 1989, 2016. Jacobus, Frank R., M.Arch. (University of Texas at Austin), Associate Professor, Department of Architecture, 2012, 2015.
Jaduh, Arva, Ph.D. (University of Southern California), M.Phil.
(Cambridge University), B.A. (University of California, Berkeley), Assistant Professor, Department of Economics, 2013.
Jandik, Dobrina, Ph.D. (University of Arkansas), M.Sc.Eng. (University of Chemical Technology), M.B.A. (University of Montana), Clinical Associate Professor, Department of Finance, 2017.
Jandik, Tomas, Ph.D. (University of Pittsburgh), M.S., B.S. (Czech Technical University), Professor, Department of Finance, Dillard Chair in Corporate Finance, 2000, 2016.
Jarnagin, Robyn, LL.M. (New York University), J.D., B.S. (University of Montana), Clinical Associate Professor, William Dillard Department of Accounting, 2016, 2020.
Jarrett, Anna Lee, Ph.D., M.S.N. (University of Missouri-Columbia), B.S.N. (Missouri Southern State College), Associate Professor, Eleanor Mann School of Nursing, 2012, 2018.
Javad, M., Ph.D. (University of Kansas), M.B.A. (University of Tehran, Iran), B.Sc. (Sharif University of Technology, Iran), Assistant Professor, Department of Marketing, 2022.
Jefferis, Neal, M.S.Ed. (Old Dominion University), B.E.S.(University of Missouri), Instructor, Operations Management Program, 2017.
Jennings, Freddie, Ph.D. (University of Missouri), M.A., B.A.
University of Arkansas), Teaching Assistant Professor, Department of Communication, 2018.
Jennings, John A., Ph.D. (University of Missouri), M.S. (University of Arkansas), B.S. (Southwest Missouri State University), Professor, Department of Animal Science, 1998.
Jensen, David C., Ph.D., M.S., B.S. (Oregon State University), Associate Professor, Department of Mechanical Engineering, 2012, 2018.
Jensen, Hanna Katariina, Ph.D. (University of Oulu, Finland), Research Assistant Professor, Department of Biomedical Engineering, 2015.
Jensen, Molly R., Ph.D., M.A. (University of Arkansas), B.S. (Southwest Missouri State University), Clinical Associate Professor, Department of Marketing, 2003.
Jensen, Morten O., Ph.D. (University of Aarhus, Denmark), M.Sc. (Georgia Institute of Technology), Associate Professor, Department of Biomedical Engineering, 2014.

Jensen, Sarah D., Ed.D. (University of Arkansas), M.B.A., B.A. (Webster University), Instructor, Department of Marketing, 2009.
Jensen, Thomas D., Ph.D., M.A., B.A. (University of Arkansas),
Professor, Department of Marketing, Wal-Mart Lecturer in Retailing, 1982, 2009.

Jensen, Toni, Ph.D. (Texas Tech University), M.A., B.A. (University of South Dakota), Associate Professor, Department of English, 2014, 2019. Jilka, Elizabeth C., M.F.A., B.A. (University of Arkansas), Instructor, Department of Theatre, 2017.
Jin, Kevin, Ph.D., M.S., (University of Illinois at Urbana-Champaign), B.E. (Nanyang Technological University, Singapore), Associate Professor, Department of Computer Science and Computer Engineering, , 2021.
Joffe Minor, Tacy Marie, Ph.D. (Northwestern University), M.A., B.S. (University of Arkansas), Teaching Assistant Professor, Department of Physics, 2011, 2018.
Johnson, Alex, M.S., B.A. (University of Arkansas), Lecturer, Department of Political Science, 2020.
Johnson, Donald M., Ph.D. (University of Missouri-Columbia), M.A., B.S. (Western Kentucky University), Professor, Department of Agricultural Education, Communications and Technology, 1993, 1999.
Johnson, Jon, Ph.D. (Indiana University at Bloomington), M.B.A., B.S. (University of Arkansas), Professor, Department of Strategic, Entrepreneurship and Venture Innovation, Walton College Professorship in Sustainability, 1996, 2007.
Johnson, Kelly Vowell, Ed.D. (University of Arkansas), M.N.Sc. (University of Arkansas for Medical Sciences) B.S.N. (Arkansas Tech University), Associate Professor, Eleanor Mann School of Nursing, 2013, 2021.

Johnson, Mark, Ph.D. (Michigan State University), M.S. (Purdue
University), B.S. (City University of New York, Brooklyn College), Professor, Department of Mathematical Sciences, 1995, 2015.
Johnson, Noah, B.A. (Fort Lewis College), Instructor, Department of Theatre, 2020.
Johnson, Normastel Mosby, M.L.S. (Simmons College), B.A. (Vanderbilt University), Associate Librarian, University Libraries, 1989.
Johnson-Carter, Charlene M., Ph.D. (Emory University), M.B.A. (Atlanta University), M.Ed., B.A. (University of Cincinnati), Associate Professor, Department of Curriculum and Instruction, 1992, 1998.
Jones, Chase, M.M., B.M. (University of Arkansas), Instructor, Department of Music, 2022.
Jones, Ches, Ph.D. (University of Alabama at Birmingham), B.S.E.
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Jones, Clinton G., Ed.D. (Arkansas Tech University), Ed.S. (Harding University), Assistant Professor, Department of Curriculum and Instruction, 2019.
Jones, Garret, B.M. (University of Arkansas), Lecturer, Department of Music, 2022.
Jones, Linda Carol, Ph.D. (University of New Mexico), M.A. (University of Arkansas), M.A. (University of Arizona), B.A. (Northeast Louisiana University), Professor, Department of World Languages, Literatures and Cultures, 1988, 2022.
Jones, Phillip J., M.S. (University of Illinois-Urbana-Champaign), M.A. (University of California-Irvine), B.A. (University of California-Santa Barbara), Associate Librarian, University Libraries, 2003.
Jones, Phillip, M.B.A., B.S. (University of Arkansas), Instructor, Department of Civil Engineering, 2013, 2022.
Jones, Ringo, M.F.A. (Miami University), B.A. (Northern Kentucky University), Assistant Professor, Department of Communication, 2020. Joseph, Qwist, M.F.A. (University of Nebraska-Lincoln), Instructor, School of Art, 2022.

Joshi, Neelendra, Ph.D. (Pennsylvania State University), Assistant Professor, Department of Entomology and Plant Pathology, 2015. Judah, Matt, Ph.D., M.S. (Oklahoma State University), B.A. (Ozark Christian College), Assistant Professor, Department of Psychological Science, 2020.
Judges, Donald P., Ph.D. (University of Tulsa), J.D. (University of Maryland University College), B.A. (Johns Hopkins University), Professor, School of Law, E.J. Ball Professor of Law, 1989.
Juhl, Beth, M.L.S. (Columbia University), B.A. (University of Texas at Austin), Librarian, University Libraries, 1993, 1999.
Jung, Hyunseok, Ph.D. (Syracuse University), M.A. (Korea Development Institute), B.A. (Seoul National University), Assistant Professor, Department of Economics, 2018.

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Kahf, Mohja, Ph.D., B.A. (Rutgers State University-New Brunswick), Professor, Department of English, 1995, 2019.
Kahng, Er-Gene, D.M. (Northwestern University), A.D., M.M. (Yale University), B.A. (University of California-Los Angeles), Associate Professor, Department of Music, 2007, 2012.
Kali, Raja, Ph.D., M.A. (University of Maryland University College), B.S.C. (University of Calcutta), Professor, Department of Economics, ConocoPhillips Chair in International Education, 1999, 2013.
Kaman, Tulin, Ph.D. (Stony Brook University), M.S. (Istanbul Technical University), B.S. (Yildiz Technical University), Assistant Professor, Department of Mathematical Sciences, 2017.
Kandora, Acadia, M.F.A. (University of Arkansas), B.F.A. (Shepherd University), Instructor, 2022.
Kapoor, Gaurav, Ph.D. (University of Florida), M.S. (Drexel University), B.E. (University of Mumbai), Teaching Assistant Professor, Department of Information Systems, 2023.
Karcher, Douglas Edward, Ph.D., M.S. (Michigan State University), B.S. (The Ohio State University), Professor, Department of Horticulture, 2000, 2016.

Kashiwagi, Tomoko, D.M.A. (University of Texas at Austin), M.M., B.M. (Indiana University), Associate Professor, Department of Music, 2012, 2022.

Kayser, Casey Lee, Ph.D. (Louisiana State University), M.A. (University of Missouri-Columbia), B.A. (Westminster College), Associate Professor, Department of English, 2012, 2022.
Keethler, Gregory A., M.S.O.R. (Air Force Institute of Technology), B.S. (University of Texas at El Paso), Instructor, Operations Management Program, 2019.
Kegley, Beth, Ph.D., M.S. (North Carolina State University), B.S. (Virginia Polytech Institute and State University), Professor, Department of Animal Science, 1996, 2007.
Keiffer, Elizabeth, Ph.D., M.A. (University of Arkansas), B.S. (East Central University), Teaching Assistant Professor, Department of Information Systems, 2016, 2019.
Kellams, Kyle, B.A. (University of Arkansas), Instructor, Campus Radio, 1989.

Kelley, Christopher Rowand, LL.M. (University of Arkansas), J.D.
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Kelley, Jason, Ph.D., M.S. (Oklahoma State University), B.S. (Kansas State University), Professor, Department of Crop, Soil and Environmental Sciences, 2003, 2019.

Kemper, Nathan, Ph.D., M.S. (University of Arkansas), B.S. (Missouri State University), Clinical Professor, Department of Agricultural Economics and Agribusiness, 2014.
Kennedy, David, M.Des. (Harvard University), B.Arch. (Carnegie Mellon University), Assistant Professor, Department of Architecture, 2021.
Kennefick, Daniel John, Ph.D., M.A. (California Institute of Technology), B.S. (University College Cork, Ireland), Professor, Department of Physics, 2003, 2021.
Kennefick, Julia Dusk, Ph.D. (California Institute of Technology), B.S. (University of Arkansas), Associate Professor, Department of Physics, 2003, 2014.
Kent, John, Ph.D. (University of Tennessee), M.B.A. (University of Dallas), B.S. (Henderson State University), Clinical Associate Professor, J.B. Hunt Transport Department of Supply Chain Management, 2014, 2018.

Kent, Laura B., Ph.D. (University of Wisconsin-Madison), M.S. (Purdue University Calumet), B.S. (Purdue University), Associate Professor, Department of Curriculum and Instruction, 2006.
Kern, Jack C., Ph.D. (Texas Woman's University), M.Ed. (Texas State University-San Marcos), B.S. (University of Wisconsin-LaCrosse), Clinical Professor, Department of Health, Human Performance and Recreation, 1996, 2013.
Kerr, Brinck, Ph.D. (Texas A\&M University), B.A. (University of Texas at Austin), University Professor, Department of Political Science, 1994, 2021.

Khan, Abraham, Ph.D. (University of Minnesota), M.A., B.A (Florida State University), Assistant Professor, Department of Communication, 2022.
Kidd, Michael T., Ph.D. (North Carolina State University), M.S., B.S.A. (University of Arkansas), Professor, Department of Poultry Science, 2010. Killenbeck, Ann Mallatt, Ph.D. (University of Michigan-Ann Arbor), J.D. (University of Nebraska-Lincoln), Associate Professor, School of Law, 2003, 2010.
Killenbeck, Mark R., J.D., Ph.D. (University of Nebraska-Lincoln), B.A. (Boston College), Distinguished Professor, School of Law, Wylie H. Davis Professor of Law, 1988, 2003.
Killian, Timothy Scott, Ph.D. (University of Missouri-Columbia), M.A. (Wheaton College), B.A. (Central Bible College), Associate Professor, School of Human Environmental Sciences, 2001, 2007.
Kilmer, Michele, D.N.P. (University of Alabama), M.S.N (Texas Tech University), B.S.N. (Harding University), Assistant Professor, Eleanor Mann School of Nursing, 2017, 2018.
Kilyanek, Stefan M., Ph.D., M.S. (University of Chicago), B.S. (Grand Valley State University), Associate Professor, Department of Chemistry and Biochemistry, 2014, 2019.
Kim, Daesoo, Ph.D., M.S. (University of Arkansas), B.S. (Suncheon National University), Instructor, Ralph E. Martin Department of Chemical Engineering, 2022.
Kim, Hyun, Ph.D., D.M.A. (University of Colorado), M.M. (University of Cincinnati), M.M. (Sung-Shin Women's University), B.M. (Chung-Ang University), Visiting Assistant Professor, Department of Music, 2018. Kim, Jin-Woo, Ph.D. (Texas A\&M University), M.S. (University of Wisconsin-La Crosse), B.S. (University of lowa), Professor, Department of Biological and Agricultural Engineering, 2001, 2011.
Kim, Seokeun, Ph.D. (University of Georgia), M.P.A. (lowa State University), B.P.A. (University of Seoul), Visiting Assistant Professor, Department of Political Science, 2022.
King, Bonnie, M.A.T., B.S.E. (University of Arkansas), Clinical Instructor, Department of Curriculum and Instruction, 2015.
King, Leldon Dale, B.S. (University of Central Oklahoma), Instructor, 2010.

King, Michele S., M.L.S., B.F.A. (University of Oklahoma), Associate Librarian, University Libraries, 1987.

King, Sam, M.F.A. (Indiana University at Bloomington), B.F.A. (University of Tulsa), Assistant Professor, School of Art, 2011, 2016.
King, Tiffany, M.A. (University of Arkansas), B.J. (University of Missouri), Instructor, School of Journalism and Strategic Media, 2014.
Kippenbrock, Thomas A., Ed.D. (Indiana University at Bloomington), M.S. (Indiana University-Purdue University-Indianapolis), B.S.N. (Indiana State University), Professor, Eleanor Mann School of Nursing, 2003.
Kirkwood, Patricia Elaine, M.S. (University of Illinois-Urbana-
Champaign), B.S. (Pacific Lutheran University), Associate Librarian, University Libraries, 2004.
Kizsonas, Elizabeth, Ph.D. (University of Arkansas), Th.M., M.Div. (Trinity Evangelical Divinity School), B.A. (Rutgers University), Instructor, Department of History, 2020.
Knies, Cambry, M.A., B.A. (University of Arkansas), Instructor, Department of Communication, 2020.
Knighten, Chris, D.M.A., M.M. (University of Colorado), B.M. (Baylor University), Associate Professor, Department of Music, 2009.
Knighten, Janet Whitman, M.M., B.M. (East Carolina University), Assistant Professor, Department of Music, 2009.
Koh, Dongya, Ph.D. (Washington University-St. Louis), M.A. (Boston University), B.A. (Keio University), Assistant Professor, Department of Economics, 2014.
Kohanek, Julia, Ph.D. and M.S. (University of Illinois UrbanaChampaign), B.S. (University of Michigan), Instructor, Department of Chemistry and Biochemistry, 2019, 2022.
Kong, Byungwhi, Ph.D., M.S. (University of Minnesota-Twin Cities), B.S. (Korea University), Associate Professor, Department of Poultry Science, 2006, 2012.
Kopp, Steven W., Ph.D. (Michigan State University), M.B.A. (University of Southern Mississippi), B.S. (University of Missouri-Rolla), Associate Professor, Department of Marketing, 1992, 2000.
Korth, Deborah, Ed.D. (University of Arkansas), M.Ed. (North Carolina State University), B.S. (University of Nebraska-Lincoln), Teaching Professor, Fulbright College of Arts and Sciences, 2004, 2020.
Korth, Ken L., Ph.D. (North Carolina State University), B.S. (University of Nebraska), Professor, Department of Entomology and Plant Pathology, 1999, 2009.
Kovacs, Kent F., Ph.D. (University of California-Davis), B.A. (Vassar College), Associate Professor, Department of Agricultural Economics and Agribusiness, 2012, 2018.
Kowalski, Jessica Anne, Ph.D. (University of Alabama), Research Assistant Professor, Department of Anthropology, 2019.
Koziol, Kathryn, Ph.D. (University of Arkansas), Teaching Associate Professor, Department of Anthropology, 2019, 2022.
Kral, Timothy Alan, Ph.D. (University of Florida), B.S. (John Carroll University), Professor, Department of Biological Sciences, 1981, 2008.
Krupa, Trent, Ph.D. (University of Connecticut), M.B.A. (Bryant University), B.S.B.A., Assistant Professor, William Dillard Department of Accounting, 2022.
Kruse, Audrey, M.S. (Arkansas State University), B.S. (Brigham Young University), Instructor, Department of Mathematical Sciences, 2014.
Kucharczyk, Suzanne, Ed.D. (Columbia University Teacher's College), M.Ed., B.S. (University of Illinois-Urbana-Champaign), Associate Professor, Department of Curriculum and Instruction, 2014, 2020. Kuenzel, Wayne J., Ph.D. (University of Georgia), M.S., B.S. (Bucknell University), Professor, Department of Poultry Science, 2000.
Kuhns, Alyssa, M.I.D. (Pratt Institute), B.Arch. (Carnegie Mellon University), Assistant Professor, Department of Architecture, 2021.
Kulczak, Deborah E., M.L.S., B.A. (Kent State University), Librarian, University Libraries, 1988, 2013.

Kumar, Pradeep, Ph.D. (Boston University), M.Sc. (Indian Institute of Technology, Mumbai, India), Associate Professor, Department of Physics, 2013, 2019.
Kutz, Bryan Richard, M.S. (Western Kentucky University), B.S. (Oklahoma State University), A.S. (Northern Oklahoma College), Instructor, Department of Animal Science, 1997.
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Lacity, Mary, Ph.D. (University of Houston), B.S.B.A. (Pennsylvania State University), Distinguished Professor, Department of Information Systems, David D. Glass Chair in Information Systems, 2018, 2022.
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Lamb, Andrew P., Ph.D. (Boise State University), M.S. (Florida Institute of Technology), B.S. (University of Dublin, Trinity), Assistant Professor, Department of Geosciences, 2017.
Lambert, Lauren, M.A., B.A. (Missouri State University), Instructor, Department of Communication, 2020.
Lamm, Connie, Ph.D., M.A. (University of Toronto, Canada),
B.A. (University of Waterloo), Assistant Professor, Department of Psychological Science, 2016.
Lampinen, James Michael, Ph.D., M.S. (Northwestern University), B.S. (Elmhurst College), Distinguished Professor, Department of Psychological Science, 1998, 2016.
Landman, Michael, M.F.A. (Columbia University), B.A. (State University of New York at Binghamton), Associate Professor, Department of Theatre, 2004, 2011.
Lane, Marty Maxwell, M.G.D. (North Carolina State University), B.F.A. (University of Illinois at Chicago), Associate Professor, School of Art, 2014, 2019.
Lane, Valerie Jean, M.F.A. (Pennsylvania State University), B.F.A. (University of Memphis), Instructor, Department of Theatre, 2008. Langsner, Steve, Ph.D. (Indiana University at Bloomington), M.S. (University of Baltimore), B.S. (Springfield College), Associate Professor, Department of Health, Human Performance and Recreation, 1989.
LaPorte, Angela M., Ph.D. (Pennsylvania State University), M.A. (Arizona State University), B.S. (La Roche College), Professor, School of Art, 1998, 2016.

Lasater, Kara A., Ed.D. (University of Arkansas), Ed.S., M.S. (Pittsburg
State University), B.A. (Drury University), Associate Professor,
Department of Curriculum and Instruction, 2014, 2023.
Lau, Wing, Ph.D. University of Oregon), M.M. (Indiana University), Instructor, Department of Music, 2016.
Launder, John, M.A. (University of Missouri), B.A. (Westminster College), Instructor, Department of Management, 2011.
Lavery, Richard J., B.A. (University of South Florida), Assistant Professor, Air Force ROTC, Major, 2016.
Lawson, Connor, Ph.D., M.E. (North Carolina State University), B.A. (Macalester College), Assistant Professor, Department of Agricultural Economics and Agribusiness, 2022.
Lay, Jackson, Ph.D. (University of Nebraska-Lincoln), Professor, Department of Chemistry and Biochemistry, 2002.
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Leblanc, Michelle, M.A (New York University), B.S. (Louisiana State University), Instructor, Department of Theatre, 2018.
Lee, Jisun, Ph.D. (Yonsei University), M.S. (Yonsei University), B.S. (Yonsei University), Assistant Professor, Department of Interior Architecture and Design, 2020.
Lee, Joomi, Ph.D. (Michigan State University), M.A. (Indiana University), B.A. (The Catholic University of Korea), Assistant Professor, Department of Communication, 2023.
Lee, Jung Ae, Ph.D., M.S. (University of Georgia), M.A., B.A., (Ewha Womans University), Assistant Professor, Department of Crop, Soil and Environmental Sciences, 2016.
Lee, Oh Mee, M.A. (University of Oregon), Visiting Assistant Professor, School of Art, 2019.
Lee, Peggy B., Ed.D. (University of Arkansas), M.S. (University of Southern Mississippi), B.S.N. (Mississippi College), Teaching Associate Professor, Eleanor Mann School of Nursing, 2009, 2021.
Lee, Richard N., Ph.D. (Stanford University), B.A. (Luther College), Associate Professor, Department of Philosophy, 1982, 1988.
Lee, Seungtaek, Ph.D. (Arizona State University), M.S. (Chung-Ang University), Instructor, Department of Civil Engineering, 2021.
Lee, Sun-Ok, Ph.D., M.S. (lowa State University), M.S., B.S. (Dongduk Women's University, South Korea), Associate Professor, Department of Food Science, 2008, 2016.
Lee, Wayne Y., Ph.D. (University of California-Los Angeles), M.B.A. (Santa Clara University), B.S.M.E. (De La Salle College, Philippines), Professor, Department of Finance, Alice L. Walton Chair in Finance, Garrison Chair in Finance, 1998.
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Leeds, Stacy, LL.M. (University of Wisconsin-Madison), J.D. (University of Tulsa), M.B.A. (University of Tennessee), B.A. (Washington University in St. Louis), Professor, School of Law, 2011.
Leen-Feldner, Ellen Winifred, Ph.D. (University of Vermont), M.A.
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Leflar, Rob, M.P.H., J.D., A.B. (Harvard University), Professor, School of Law, 1982.
Leftwich, Matthew, Ph.D., M.S. and B.S. (University of Arkansas), M.B.A. (Webster University), Research Professor, Department of Physics, 2021.
Lehman, Kathleen A., M.L.I.S. (University of Wisconsin-Milwaukee),
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Lehmann, Michael Herbert, Ph.D., Diploma in Biology (Philipps
University of Marburg, Germany), Professor, Department of Biological Sciences, 2002, 2018.
Lehmer, Bret Darby, Ph.D. (Pennsylvania State University), B.S. (University of lowa), Associate Professor, Department of Physics, 2015, 2021.

Lennertz, Lora, M.I.S. (University of Arkansas), M.L.I.S., B.A. (University of Illinois-Urbana-Champaign), Librarian, University Libraries, 1991, 2011. Lens, Joshua, J.D. (University of lowa), B.A. (University of Northern Iowa), Assistant Professor, Department of Health, Human Performance and Recreation, 2018.
Leong, Josiah, Ph.D. (Stanford University), B.A. (University of California, Berkeley), Assistant Professor, Department of Psychological Science, 2020.

Lessner, Daniel J., Ph.D. (University of lowa), B.S. (University of Wisconsin-Stevens Point), Professor, Department of Biological Sciences, 2008, 2020.

Lessner, Faith H., Ph.D. (University of lowa), B.S. (Cornell University), Teaching Assistant Professor, Department of Biological Sciences, 2016, 2018.

Lester, Henry, Ph.D., M.S.(University of Alabama), M.S. (University of Arkansas), Instructor, Operations Management Program, 2020.
Levenson, Abra, Ph.D., M.A.(Princeton), B.A. (University of California, Berkeley), Assistant Professor, School of Art, 2018.
Levine, Daniel, Ph.D. (University of Cincinnati), B.A. (University of Minnesota), University Professor, Department of World Languages, Literatures and Cultures, 1980, 2016.
Levine, William H., Ph.D., M.S. (State University of New York at Binghamton), B.S. (DePaul University), Associate Professor, Department of Psychological Science, 2001, 2007.
Lewis, Jeffrey A., Ph.D. (University of Wisconsin-Madison), B.S. (University of California-Santa Barbara), Associate Professor, Department of Biological Sciences, 2013, 2020.
Leylek, Jim, Ph.D. (University of Illinois-Urbana-Champaign), M.S., B.S. (University of Illinois at Chicago), Professor, Department of Mechanical Engineering, 2011.
Li, Jiali, Ph.D., M.S. (The City College of the City University of New York), M.S. (University of Science and Technology of China), B.S. (Hei Long Jiang University), Professor, Department of Physics, 2002, 2016. Li, Qinghua, Ph.D. (Pennsylvania State University), M.S. (Tsinghua University), B.E. (Xi'an Jiaotong University), Associate Professor, Department of Computer Science and Computer Engineering, 2013.
Li, Xi, Ph.D. (Vanderbilt University), M.A. (Tulane University), B.S. (Hunan University), Associate Professor, Department of Finance, 2018.
Li, Xin "Sherry", Ph.D. (University of Michigan), M.A. (Syracuse University), M.A., B.A. (Renmin People's University of China), Professor, Department of Economics, 2018.
Li, Yanbin, Ph.D. (Pennsylvania State University), M.S. (University of Nebraska-Lincoln), B.S. (Shenyang Agricultural University), Distinguished Professor, Department of Biological and Agricultural Engineering, Tyson Endowed Chair in Biosensing Engineering, 1989, 2003.
Liang, Xinya, Ph.D. (Florida State University), B.S. (Zhejiang Gongshang University, China), Associate Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2014, 2021.
Liang, Yi, Ph.D. (University of Alberta, Canada), M.S., B.S. (China Agricultural University, Beijing, China), Associate Professor, Department of Biological and Agricultural Engineering, 2007, 2014.
Liao, Haitao, Ph.D., M.S., M.S.I.S.E. (Rutgers University), B.S.E.E.
(Beijing Institute of Technology), Professor, Department of Industrial Engineering, John and Mary Lib White Endowed Systems Integration Chair, 2015.
Liles, Alex, M.A., B.A. (University of Arkansas), Instructor, Department of Communication, 2014.
Liner, Christopher L., Ph.D. (Colorado School of Mines), M.S. (University of Tulsa), B.S. (University of Arkansas), Professor, Department of Geosciences, 2012.
Lirgg, Cathy D., Ph.D. (Michigan State University), M.S. (Indiana State University), B.A. (Muskingum College), Professor, Department of Health, Human Performance and Recreation, 1991, 2018.
Littlejohn, Brittni P., Ph.D. (Texas A\&M University), Assistant Professor, Department of Animal Science, 2019.
Littrell, Rita, Ph.D. (University of Kansas), Ed.S., M.Ed., B.S.E.
(University of Arkansas), Visiting Assistant Professor, Department of Economics, 1997.
Liu, Andrew Yizhou, Ph.D., M.A. (University of California, Santa
Barbara), B.A. (Nanjing University), Assistant Professor, Department of Economics, 2020.
Liu, Kuan, Ph.D. (Boston College, Rutgers University), M.S., B.S.
(Wuhan University), Assistant Professor, Department of Finance, 2020.

Liu, Pu, Ph.D., M.B.A. (Indiana University at Bloomington), B.S. (National Cheng Kung University), Professor, Department of Finance, Harold Dulan Chair in Capital Formation, Robert E. Kennedy Chair in Finance, 1984, 2009.

Liu, Yanran, Ph.D. (Georgia State University), M.M., B.Mgt. (China University of Geosciences), Visiting Assistant Professor, Department of Information Systems, 2021.
Livingston, Mark A., Ph.D. (University of Maryland), Instructor, Operations Management Program, 2017.
Lloyd, Larry, M.B.A., B.S.C.E. (University of Arkansas), Instructor, Department of Civil Engineering, 2020.
Lo, Wen-Juo, Ph.D., M.A. (Arizona State University), B.S. (SooChow University), Associate Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2008, 2014.
Loftin, Kelly M., Ph.D. (New Mexico State University), M.S. (University of Arkansas), B.S. (Arkansas Tech), Associate Professor, Department of Entomology and Plant Pathology, 2002, 2010.
Lofton, Annelle L., M.S.N. (University of Arkansas), B.S.N. (University of Arkansas), Clinical Instructor, Eleanor Mann School of Nursing, 2013.
Lofton, Barbara A., Ed.D. (Grambling State University), M.A. (University of lowa), B.S. (Jackson State University), Assistant Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 1996.
Long, Christiane, Ph.D. (Our Lady of the Lake University-San Antonio), M.S.W. (University of Arkansas at Little Rock), B.S. (University of Central Arkansas), Assistant Professor, School of Social Work, 2022.
Long, Mary Beth, Ph.D., M.A. (University of Massachusetts, Amherst), B.A. (Ouachita Baptist University), Assistant Professor, Department of English, 2014.
Looney, Charles R., Ph.D. (Louisiana State University), Professor, Department of Animal Science, 2019.
Looney, Nathan C., J.D. (University of Arkansas at Little Rock), M.P.S. (University of Arkansas Clinton School of Public Service), B.A. (University of Arkansas), Lecturer, Department of Political Science, 2012.
Looper, Michael L., Ph.D. (Oklahoma State University), M.S., B.S. (University of Arkansas), Professor, Department of Animal Science, 2011.
Lopez, Linda Nguyen, M.F.A. (University of Colorado-Boulder), B.F.A. (California State University-Chico), Instructor, School of Art, 2012.
Lopez, Trish A., M.A.T. (Arkansas Tech University), Research Associate, Department of Curriculum and Instruction, 2020.
Lorah, Elizabeth R., Ph.D., M.S.Ed., B.A. (Temple University), Associate Professor, Department of Curriculum and Instruction, 2013, 2018.
Lorenz, Gus M., Ph.D., B.S.A., M.S. (University of Arkansas), Distinguished Professor, Department of Entomology and Plant Pathology, 1997, 2013.
Lorenzo, Benjamin, D.M.A., M.M. (University of Texas), B.M. (Florida International University), Assistant Professor, Department of Music, 2015. Lorenzo, Violeta, Ph.D. (University of Toronto), M.A., B.A. (University of Florida), Associate Professor, Department of World Languages, Literatures and Cultures, 2014, 2020.
Lorince, Tammy, M.A., B.S. (University of Arkansas), Instructor, Department of Biological Sciences, 2000.
Lorne, Lorraine Kay, J.D. (University of Detroit Mercy), M.A. (University of Denver), B.A. (Alma College), Associate Librarian, University Libraries, 1992.

Lower, Otto, Ph.D. (Purdue University), M.S. (Michigan State and Louisiana State University), B.S. (Louisiana State University), Instructor, Operations Management Program, 2014.
Luecking, Daniel H., Ph.D., M.S., B.A. (University of Illinois-UrbanaChampaign), Professor, Department of Mathematical Sciences, 1981, 1990.

Lueke, Sarah B., Ph.D. (University of Akron), M.S. (Indiana UniversityPurdue University-Indianapolis), B.A. (University of Wisconsin-Madison), Teaching Assistant Professor, Department of Management, 2019. Lundeen, Lindsay, Ph.D. (University of Georgia), M.A. (Wake Forest University), B.S. (Kennesaw State University), Assistant Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2023.
Luoni, Stephen D., M.Arch. (Yale University), B.S.Arch. (Ohio State University), Professor, Department of Architecture, 2003, 2006. Luu, Khoa, Ph.D. (Concordia University), Assistant Professor, Department of Computer Science and Computer Engineering, 2018. Lynch, Andrew, Ph.D., M.A. (University of Missouri), B.S. (Southwest Baptist University), Assistant Professor, Department of Finance, 2020.

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MacDuff, Timothy, D.M.A. (University of Maryland), Lecturer, Department of Music, 2021.
Mackay, Wayne A., Ph.D. (University of Maryland), M.S. (University of Delaware), B.S. (Virginia Polytechnic Institute and State University), Professor, Department of Horticulture, 2014.
MacKeith, Peter, M.Arch. (Yale University), B.A. (University of Virginia), Professor, Department of Architecture, 2014.
Mackler, Robert F., M.A.T. (Saint Michael's College), Instructor, Graduate School and International Education, 2019.
Madison, Karen L., Ph.D., M.A., B.A. (University of Arkansas), Instructor, Department of English, 2013.
Madison, Robert D., Ph.D. (Northwestern University), M.A. (Clark University), B.A. (University of Rhode Island), Instructor, Department of English, 2016.
Magnetti, Brenda Monica, M.A. (University of Arkansas), B.A. (Ouachita Baptist University), Teaching Assistant Professor, Department of World Languages, Literatures and Cultures, 2007, 2020.
Magoulick, Daniel D., Ph.D. (University of Pittsburgh), M.S. (Eastern Michigan University), B.S. (Michigan State University), Research Professor, Department of Biological Sciences, 2000, 2010.
Mahaffey, Jacob, M.S. (University of Arkansas), B.S. (University of Arkansas, Little Rock), Instructor, Operations Management Program, 2021.

Mahmoud, Rania, Ph.D. (University of Washington), M.A. (Old Dominion University), B.A., (University of Alexandria, Egypt), Assistant Professor, Department of World Languages, Literatures and Cultures, 2017. Mains, Ronda M., D.M.A. (University of Oregon), M.A., B.M. (Boise State University), Professor, Department of Music, 1987, 2002.
Makhanova, Anatasia, Ph.D. (Florida State University), B.A. (Hendrix College), Assistant Professor, Department of Psychological Science, 2019.

Malakhov, Alexey, Ph.D. (Northwestern University), Ph.D. (University of North Carolina at Charlotte), M.S. (Moscow State University),
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Malis, David H., M.M. (University of Cincinnati), B.M. (Mars Hill College), Associate Professor, Department of Music, 2002, 2013.
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Mamiseishvili, Ketevan, Ph.D., M.A. (University of Missouri-Columbia), B.A. (Akaki Tsereteli State University), Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2008, 2017.

Manasreh, Bothina H., Ph.D., M.Sc. (University of Jordan), Research Assistant Professor, Department of Physics, 2017.
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Mantero, Paolo, Ph.D. (Purdue University), M.Sc., B.Sc. (University of Genova, Italy), Associate Professor, Department of Mathematical Sciences, 2015, 2021.
Mantooth, Alan, Ph.D. (Georgia Institute of Technology), M.S., B.S. (University of Arkansas), Distinguished Professor, Department of Electrical Engineering, Twenty-First Century Chair in Mixed-Signal IC Design and CAD, 1998, 2011.
Mao, Ruoyun, Ph.D. (Indiana University), B.A. (Sun Yat-sen University), Assistant Professor, Department of Economics, 2023.
Maranto, Robert Anthony, Ph.D. (University of Minnesota), B.S. (University of Maryland), Professor, Department of Education Reform, Endowed Chair in Leadership, 2008.
Marcy, John A., Ph.D., M.S. (lowa State), B.S. (University of Tennessee), Extension Professor, Department of Poultry Science, 1993, 2006.
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Marshall, Jill A., Ph.D. (University of Oregon), M.S. (San Francisco State University), B.S. (California State University, Hayward), Assistant Professor, Department of Geosciences, 2017.
Marshfield, Jonathan, LL.M. (New York University), J.D. (Rutgers University-Camden), B.A. (Cedarville University), Associate Professor, School of Law, 2013, 2016.
Martin, Terry W., Ph.D., M.S.E.E., B.S.E.E. (University of Arkansas), Professor, Department of Electrical Engineering, 1990, 2002.
Marzolf, Steven, M.F.A. (University of San Diego), B.A. (University of Wisconsin-Green Bay), Teaching Assistant Professor, Department of Theatre, 2015.
Mason, Richard Esten, Ph.D., B.A. (Texas A\&M University), Associate Professor, Department of Crop, Soil and Environmental Sciences, 2010, 2016.

Matlock, Marty D., Ph.D., M.S., B.S. (Oklahoma State University), Professor, Department of Biological and Agricultural Engineering, 2001, 2009.

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Matthews, Mary Beth, J.D., B.S.E. (University of Arkansas), Professor, School of Law, Sidney Parker Davis Jr. Professor of Business and Commercial Law, 1981.
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Maxwell, Charles, Ph.D. (University of Wisconsin-Madison), M.S., B.S. (University of Georgia), Professor, Department of Animal Science, 1996.

Mayes, Eric, Ph.D. (Howard University), Associate Professor, Department of Curriculum and Instruction, 2019.
Mazur, Yuriy, Ph.D. (Institute of General Physics, Moscow), M.S. (Moscow Institute of Physics and Engineering, Russia), Professor, Nanotechnology, 2001, 2011.
Mazzanti, Christopher L., Ph.D., M.S. (University of Arkansas), B.S. (University of Arkansas at Monticello), Instructor, Department of Chemistry and Biochemistry, 2012.
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McCartney, Nancy Glover, Ph.D., M.A., B.A. (University of WisconsinMadison), Assistant Curator, Assistant Professor, University Museum, 1974.

McComas, Kim Krusen, Ph.D. (University of Arkansas), M.A. (West Chester University of Pennsylvania), B.A. (University of Arizona), Teaching Associate Professor, Department of Curriculum and Instruction, 2012, 2020.
McComas, William, Ph.D. (University of lowa), M.S. (West Chester University of Pennsylvania), B.S. (Lock Haven University of Pennsylvania), Distinguished Professor, Department of Curriculum and Instruction, Parks Family Professor of Science Education, 2006, 2018.
McCombs, Davis, M.F.A. (University of Virginia), A.B. (Harvard), Professor, Department of English, 2002, 2018.
McConnell, Mathew S., M.F.A. (University of Colorado-Boulder), B.F.A. (Valdosta State University), Associate Professor, School of Art, 2011, 2016.

McCown, Ken, M.Arch. (University of Illinois at Urbana Champaign), Professor, Department of Landscape Architecture, 2019.
McCray, Suzanne, Ph.D. (University of Tennessee), M.A., B.A. (University of Arkansas), Associate Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2010.
McDermott, Brendon P., Ph.D. (University of Connecticut), M.S. (Indiana University at Bloomington), B.S. (Northeastern University), Professor, Department of Health, Human Performance and Recreation, 2012, 2023. McDermott, Emily, Ph.D. (University of California-Riverside), B.S. (The Ohio State University), Assistant Professor, Department of Entomology and Plant Pathology, 2020.
McDermott, Reba, Ph.D. (Oklahoma State University), M.B.A. (University of Texas- San Antonio), B.S.B.A (Virginia Commonwealth University, University of Arkansas), Executive-in-Residence Instructor, William Dillard Department of Accounting, 2021.
McDonald, Candice, D.B.A. (Walden University), M.A. (Malone University), B.A. (Malone College), Instructor, Operations Management Program, 2022.
McDonald, Garry Vernon, Ph.D., M.S., B.S.A. (Texas A\&M University), Clinical Assistant Professor, Department of Horticulture, 2016.
McGee, Joshua B., Ph.D., M.S., B.S. (University of Arkansas), Research Assistant Professor, Department of Education Reform, 2019.
McGee, Peter J., Ph.D. (Ohio State University), B.S. (Tulane University), Associate Professor, Department of Economics, 2014, 2018.
McGlynn, Moira, Ph.D., M.B.A. (Union College of Union University), Instructor, Operations Management Program, 2013.

McIntosh, Matt, Ph.D. (Pennsylvania State University), B.A. (Virginia Tech), Professor, Department of Chemistry and Biochemistry, 1996, 2011. McKee, Elizabeth Chadbourn, M.L.S. (University of Oklahoma), B.A. (University of Arkansas), Librarian, University Libraries, 1974.
McKenzie, Andrew Malcolm, Ph.D. (North Carolina State University), M.Sc. (Stirling University), B.Admin. (University of Dundee), Professor, Department of Agricultural Economics and Agribusiness, 1998, 2010.
McKenzie, Sarah C., Ph.D. (University of Arkansas), M.A. (Mills College), B.A. (Claremont McKenna College), Research Assistant Professor, Department of Education Reform, 2018.
McKern, Jacquelyn A., Ph.D., M.S. (University of Arkansas), B.S. (Arkansas Technical University), Associate Professor, Department of Horticulture, 2016.
McMahon, Bree, M.A., B.A. (North Carolina State University), Assistant Professor, School of Art, 2018.
McMullen, Amanda, Ph.D. (University of Miami), B.A. (Stetson University), Assistant Professor, Department of Philosophy, 2019.
McNabb, David S., Ph.D. (Louisiana State University Health Sciences Center), B.S. (University of Texas at Arlington), Associate Professor, Department of Biological Sciences, 2000, 2006.
McNally, Shelley Ann, Ph.D. (University of Toledo), M.S., B.S. (Ohio University), Professional Practice Assistant Professor, School of Human Environmental Sciences, 2016.
McNeal, Travis G., M.A. (University of Nevada), B.S. (Utah State University), Instructor, Operations Management Program, 2014. McVey, Thomas Matthew, M.S. (Penn State University), B.S. (University of Arkansas), Instructor, Department of Biological and Agricultural Engineering, 2022.
McWhirt, Amanda L., Ph.D. (North Carolina State University), M.S. (Louisiana State University), B.S. (Tarleton State University), Assistant Professor, Department of Horticulture, 2016.
Mears, Derrick, Ph.D. (University of Arkansas), M.S., B.S. (University of Central Missouri), Teaching Associate Professor, Department of Curriculum and Instruction, 2014.
Melton, Kerry D., Ph.D. (Oklahoma State University), M.S., B.S. (University of Arkansas), Instructor, Operations Management Program, 2013.

Meng, Xiangbo, Ph.D. (University of Western Ontario), M.S.E.E. (China University of Petroleum), B.S.C.E. (Northwestern University), Associate Professor, Department of Mechanical Engineering, 2016, 2022.
Mensah, Angela, Ph.D. (Bowling Green State University), M.A. (Western Michigan University), B.A. (Ferris State University), Teaching Assistant Professor, Department of Communication, 2022.
Mertens, Nathan, D.M.A., M.M. (University of Texas at Austin), B.M., B.A. (Hastings College), Teaching Assistant Professor, Department of Music, 2022.

Messadi, Tahar, Ed.D., M.Arch. (University of Michigan-Ann Arbor), B.Arch. (Universite de Constantine, Algeria), Associate Professor, Department of Architecture, 2003, 2009.
Michealson, Kirk, M.S. (Naval Postgraduate School), B.S. (United States Naval Academy), Instructor, Operations Management Program, 2014. Micheel, Tyler, M.F.A. (University of South Dakota), B.S. (Dakota State University), Instructor, Department of Theatre, 2016.
Mihalka, Matthew W., Ph.D. (University of Minnesota), M.A. (University of Minnesota-Duluth), M.A. (University of Minnesota-Twin Cities), Instructor, Department of Music, 2011.
Milburn, Ashlea R., Ph.D. (Georgia Institute of Technology), M.S.I.E. (Virginia Polytechnic Institute and State University), B.S.I.E. (University of Arkansas), Associate Professor, Department of Industrial Engineering, 2010, 2018.

Miles, Rebecca S., Ph.D. (Oklahoma Christian University), M.Ed. (Central State University), B.S. (Oklahoma Christian College), Clinical Assistant Professor, Department of Marketing, 2007, 2015.
Miller, Bettie Gale, M.S.N. (University of Phoenix), M.S., B.S.E., B.S.N. (University of Arkansas), Instructor, Eleanor Mann School of Nursing, 2003.

Miller, David M., Ph.D. (University of Georgia), M.S., B.S. (Purdue University), Professor, Department of Crop, Soil and Environmental Sciences, 1988, 2001.
Miller, Jefferson Davis, Ph.D., M.A. (Oklahoma State University), B.A. (Northeastern State University), Professor, Department of Agricultural Education, Communications and Technology, 2001, 2012.
Miller, Lance E., Ph.D. (University of Connecticut), M.S. (New Mexico State University), Associate Professor, Department of Mathematical Sciences, 2013, 2019.
Miller, Logan, Ph.D., M.S., B.A. (University of Arkansas), Teaching Assistant Professor, Department of Economics, 2023.
Miller, Michael T., Ed.D. (University of Nebraska), M.S., B.A. (Southern Illinois University), Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2003, 2005.
Millett, Francis, Ph.D. (Columbia University), B.S. (University of Wisconsin), Distinguished Professor, Department of Chemistry and Biochemistry, 1972, 2003.
Millett, Joseph D., M.F.A. (University of Southern California), B.A. (Union College), Teaching Assistant Professor, Department of Theatre, 2015.
Millett, Paul, Ph.D., M.S. (University of Arkansas), B.E. (Vanderbilt University), Associate Professor, Department of Mechanical Engineering, Twenty-First Century Professor, 2013, 2019.
Mills, Jonathan, Ph.D. (University of Arkansas), M.A., B.S. (University of Missouri-Columbia), Research Associate, Department of Education Reform, 2018.
Minar, Edward H., Ph.D., A.M., A.B. (Harvard University), Professor, Department of Philosophy, 1994, 2013.
Miri, Marjan, M.I.D. (University of Texas, Austin), M.U.D. (Science \& Research University, Hamedan, Iran), Assistant Professor, Department of Interior Architecture and Design, 2021.
Misenhelter, Dale D., Ph.D. (Florida State University), M.A. (University of Wyoming), B.M. (Florida State University), Professor, Department of Music, 2002, 2014.
Mitchell, James, Ph.D. (Kansas State University), M.S., B.S. (Oklahoma State University), Extension Assistant Professor, Department of Agricultural Economics and Agribusiness, 2020.
Mitchell, Joshua Lee, Ph.D. (Southern Illinois University), M.P.A., B.S. (Murray State University), Associate Professor, Department of Political Science, 2010, 2019.
Mitchell, Marc E., M.F.A. (Boston University), Associate Professor, School of Art, 2014, 2019.
Mitra, Suman, Ph.D. (University of California, Irvine), M.S., B.S. (Bangladesh University of Engineering and Technology), Assistant Professor, Department of Civil Engineering, 2019.
Miuri, Motoko, M.A. (Akita International University), Instructor, Department of World Languages, Literatures and Cultures, 2022.
Mixdorf, Cory, D.M.A., M.M. (Indiana University), B.A. (University of Northern lowa), Assistant Professor, Department of Music, 2013.
Mobley, Veronica, M.A., B.A. (University of Arkansas), Instructor, Department of Communication, 2021.
Moiseichik, Merry Lynn, J.D. (University of Arkansas), R.Ed. (Indiana University at Bloomington), M.S., B.S.E. (State University of New York at Cortland), Professor, Department of Health, Human Performance and Recreation, 1989, 2007.
Monroe, Jacob, Ph.D. (University of California, Santa Barbara), B.S. (University of Virginia), Assistant Professor, Ralph E. Martin Department
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Montgomery, Mike, D.M.A. (University of Miami), M.M., B.M. (University of Southern Mississippi), Lecturer, Department of Music, 2017.
Montgomery, Scott, D.M.A. (University of Illinois), Lecturer, Department of Music, 2022.
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Moore, Brian, M.S.W, B.S.W (University of Arkansas), Lecturer, School of Social Work, 2004.
Moores, John, M.A. (Ball State University), B.B.A. (Kent State
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Moradi, Mahmoud, Ph.D. (North Carolina State University), M.S., B.S. (Sharif University of Technology), Associate Professor, Department of Chemistry and Biochemistry, 2015, 2021.
Morawicki, Ruben O., Ph.D. (Pennsylvania State University), M.Eng. (State University of New York-Buffalo), B.S. (Universidad Nacional de Misiones, Argentina), Associate Professor, Department of Food Science, 2006, 2016.
Morello, Valentina Angela, M.A. (Boston University), Instructor, Department of World Languages, Literatures and Cultures, 2022.
Morimoto, Shauna, Ph.D., M.S. (University of Wisconsin-Madison), B.A. (University of Pittsburgh), Professor, Department of Sociology and Criminology, 2008, 2023.
Morris, Adam, Ed.D. (University of Arkansas), M.S., B.S. (Friends University), B.S. (Newman University), Instructor, Operations Management Program, 2011.
Morris, Jack, M.S., M.B.A. (University of Arkansas), B.A. (University of Central Arkansas), Instructor, Operations Management Program, 2012.
Morris, John, M.A. (University of Arkansas), B.A. (University of Central Arkansas), Instructor, Department of Communication, 2021.
Morris, Noel, B.A. (Arkansas Tech University), Instructor, Department of Finance, 2007.
Morrow, Tommy K., Ph.D. (University of Texas at Austin), M.S. (North Carolina State University), B.S. (University of Arkansas), Instructor, Department of Civil Engineering, 2019.
Mortensen, Jennifer, Ph.D. (Tufts University), M.S. (Villanova
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Mosley, Jacquelyn Dee, Ph.D. (Texas Tech University), M.S. (Arizona State University), B.A. (University of Northern lowa), Professor, School of Human Environmental Sciences, 2021, 2016.
Mounts, Denise Ann, Ed.D. (Saint Louis University), B.S.E. (Northwest Missouri State University), Clinical Associate Professor, Department of Curriculum and Instruction, 2005, 2016.
Mourot, Michael, B.S. (University of Arkansas), Instructor, Ralph E. Martin Department of Chemical Engineering, .
Moxley, Shari Coleman, Ph.D. (University of North Carolina), Instructor, School of Human Environmental Sciences, 2013.
Moyer, Rachael M., Ph.D., M.S., M.A. (University of Arkansas), B.A. (University of Missouri), Lecturer, Department of Political Science, 2020.
Mozaffari, Morteza, Ph.D. (University of Delaware), M.S., B.S. (University of Massachusetts), Assistant Professor, Department of Crop, Soil and Environmental Sciences, 2002.
Mozzoni, Leandro, Ph.D. (University of Arkansas), M.S. B.S. (Rosario National University), Associate Professor, Department of Crop, Soil and Environmental Sciences, 2017.

Mueller, Robert K., D.M.A. (University of Cincinnati), M.M. (Bowling Green State University), B.A. (Northern Michigan University), Professor, Department of Music, 1988, 2004.
Muir, Sherry, Ph.D. (Walden University), M.O.T. (Texas Women's University), Associate Professor, Department of Communication Disorders and Occupational Therapy, 2017.
Muldoon, Timothy J., M.D. (Baylor College of Medicine), Ph.D. (Rice University), B.S. (Johns Hopkins University), Associate Professor, Department of Biomedical Engineering, 2012, 2018.
Mullins, Jeff, Ph.D., M.A., B.S. (University of Arkansas), Assistant Professor, Department of Information Systems, 2006, 2018.
Muntz, Charles E., Ph.D. (Duke University), B.A. (Swarthmore College), Associate Professor, Department of History, 2008, 2018.
Murach, Kevin A., Ph.D. (Ball State), M.S. (James Madison University), B.S. (University of North Carolina), Assistant Professor, Department of Health, Human Performance and Recreation, 2021.
Murdock, Jeffrey A., Ph.D. (University of Memphis), M.M., B.M.
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Murff, Zora J., M.F.A. (University of Nebraska), Assistant Professor, School of Art, 2018.
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Muriithi, Jennifer, O.T.D. (University of Utah), M.S. (Grand Canyon University), M.A. (University of Southern California), B.A. (Baylor University), Clinical Assistant Professor, Department of Communication Disorders and Occupational Therapy, 2023.
Murphy, Cheryl Ann, Ed.D., M.A., B.A. (West Virginia University), Professor, Department of Curriculum and Instruction, 1996, 2017.
Murphy, Tiffany, J.D., B.A. (University of Michigan), Associate Professor, School of Law, 2014.
Murphy-Erby, Yvette, Ph.D. (University of North Carolina at Greensboro), M.S.W. (University of North Carolina, Chapel Hill), B.A. (University of North Carolina, Charlotte), Professor, School of Social Work, 2004, 2013.
Murray, Cameron, Ph.D. (University of Oklahoma), M.S.C.E, B.S.C.E. (University of Arkansas), Assistant Professor, Department of Civil Engineering, 2017.
Murray, Jeff B., Ph.D. (Virginia Polytechnic Institute and State University), M.A., B.A. (University of Northern Colorado), Professor, Department of Marketing, R.A. and Vivian Young Chair in Marketing, 1989, 2004.
Murray, Lori M., D.N.P. (University of Kansas Medical Center), M.S., B.S.N. (University of Oklahoma Health Sciences Center), Teaching Assistant Professor, Eleanor Mann School of Nursing, 2015, 2017.
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Nair, Arun, Ph.D. (Virginia Polytechnic State University), M.S. (Colorado State University), B.T. (Mahatma Gandhi University), Associate Professor, Department of Mechanical Engineering, 2013, 2019.
Naithani, Kusum, Ph.D. (University of Wyoming), M.Sc. (G.B. Pant University of Agriculture and Technology-India), B.Sc. (University of

Lucknow-India), Associate Professor, Department of Biological Sciences, 2014, 2021.
Nakamura, Hiroyuki, Ph.D., M.S., B.S. (University of Tokyo), Assistant Professor, Department of Physics, 2019.
Nakanishi, Nagayasu, Ph.D. (University of California, Los Angeles), B.S. (University of California, San Diego), Assistant Professor, Department of Biological Sciences, 2017.
Nakarmi, Ukash, Ph.D. (University at Buffalo), M.S. (Oklahoma State University), Assistant Professor, Department of Computer Science and Computer Engineering, 2020.
Nalley, Lawton Lanier, Ph.D. (Kansas State University), M.S. (Mississippi State University), B.S. (The Ohio State University), Professor, Department of Agricultural Economics and Agribusiness, 2008, 2018.
Namakshi, Nama, Ph.D., M.Ed. (Texas State University), B.S. (Angelo State University), Teaching Assistant Professor, Department of Mathematical Sciences, 2016.
Nance, Cynthia, M.A., J.D. (University of lowa), B.S. (Chicago State University), Professor, School of Law, Nathan G. Gordon Professor of Law, 1994, 1999.
Naseem, Hameed A., Ph.D., M.S. (Virginia Polytechnic State University), M.Sc. (Panjab University), University Professor, Department of Electrical Engineering, 1985.
Nastasi, Angelina, M.P.A. (University of Arkansas), B.A. (Texas State University), Lecturer, Department of Political Science, 2021.
Nayani, Karthik, Ph.D. (Georgia Institute of Technology), B.S.Ch.E. (Indian Institute of Technology, Kanpur), Assistant Professor, Ralph E. Martin Department of Chemical Engineering, 2020.
Needy, Kim LaScola, Ph.D. (Wichita State University), P.E., M.S.I.E., B.S.I.E. (University of Pittsburgh), Professor, Department of Industrial Engineering, 2008.
Nelson, Alexander H., Ph.D. (University of Maryland), M.S., B.S. (University of Arkansas), Associate Professor, Department of Computer Science and Computer Engineering, 2017, 2023.
Nelson, Christopher, Ph.D. (Vanderbilt University), Assistant Professor, Department of Biomedical Engineering, 2019.
Nethercutt, Leonard, M.B.A., B.S (University of Arkansas), Instructor, Operations Management Program, 1996.
Neville-Shepard, Meredith D., Ph.D. (University of Kansas), M.A. (University of Kansas), B.A. (Furman University), Assistant Professor, Department of Communication, 2016.
Neville-Shepard, Ryan M., Ph.D. (University of Kansas), M.A. (University of Kansas), B.A. (Bates College), Associate Professor, Department of Communication, 2016.
Nickol, Benjamin T., B.A. (University of Notre Dame), Instructor, 2007.
Niu, Wenbo, Ph.D. (University of Illinois at Chicago), M.S., B.S. (Fudan University, China), Associate Professor, Department of Mathematical Sciences, 2015, 2021.
Niu, Yuanlu, Ph.D., M.B.A. (Southern Illinois University), Assistant Professor, Human Resource and Workforce Development Education Program, 2019.
Niño, Michael D., Ph.D. (University of North Texas), M.A., B.S. (West Texas A\&M University), Assistant Professor, Department of Sociology and Criminology, 2020.
Nolan, Steve, Ph.D., M.A. (University of Missouri-Columbia), B.A. (Westminster College), Instructor, Department of Information Systems, 2017.

Nolen, Erin, Ph.D. (University of Texas at Austin), M.S.W., B.S.W. (Baylor University), Assistant Professor, School of Social Work, 2023.
Norman, Mya A., Ph.D. (University of Colorado-Boulder), M.S., B.S. (University of Arkansas), Instructor, Department of Chemistry and Biochemistry, 2006.

Norsworthy, Jason Keith, Ph.D., M.S. (University of Arkansas), B.S. (Louisiana Tech University), Distinguished Professor, Department of Crop, Soil and Environmental Sciences, 2006, 2019.
Norvell, Phillip E., J.D. (University of Oklahoma), B.A. (University of Oklahoma), Professor, School of Law, Arkansas Bar Foundation Professor of Law, 1975.
Nutter, Darin W., Ph.D. (Texas A\&M University), M.S.M.E., B.S.M.E. (Oklahoma State University), Professor, Department of Mechanical Engineering, Twenty-First Century Leadership Chair in Engineering, 1994, 2012.

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O'Brien, Catherine, Ph.D. (University of Illinois, Chicago), M.P.H. (San Diego State University), M.A. (University of California, San Diego), B.S.Ed. (University of Wisconsin, Madison), Instructor, School of Human Environmental Sciences, 2016.
O'Leary-Kelly, Anne M., Ph.D. (Michigan State University), B.A.
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Offerman, Heather, Ph.D., M.A. (Purdue University), B.A. (University of Southern Indiana), Assistant Professor, Department of World Languages, Literatures and Cultures, 2022.
Oliver, William, Ph.D., M.S. (University of Colorado-Boulder), B.S. (University of Arizona), Associate Professor, Department of Physics, 1992, 1998.
Olmedo Gobante, Manuel, Ph.D. (University of Chicago), M.A. (University of Chicago), B.A. (Universidad de Sevilla), Assistant Professor, Department of World Languages, Literatures and Cultures, 2021.
Omura, Mafumi, M.A. (University of lowa), B.A. (Kansai Gaidai
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Orlowski, Sara K., Ph.D., M.S. (University of Arkansas), B.S. (Cornell University), Assistant Professor, Department of Poultry Science, 2019. Orr, Betsy, Ed.D., M.Ed. (University of Arkansas), B.A. (University of Arkansas at Monticello), Associate Professor, Department of Curriculum and Instruction, 1989, 2000.
Ortega, Catalina, M.M. (University of Arkansas), B.A. (Pontificia Universidad Javeriana, Colombia), Instructor, Department of Music, 2014. Ortega, Jason, M.S. (University of Texas-Pan American), B.S. (Cornell University), Instructor, Department of Biological Sciences, 2019.
Osborn, G. Scott, Ph.D. (North Carolina State University), M.S., Ag.E., B.S. (University of Kentucky), Associate Professor, Department of Biological and Agricultural Engineering, 2001, 2007.
Osborne, Cara, M.S., Sc.D. (Harvard University), M.S.N. (Vanderbilt University), B.A. (Transylvania University), Assistant Professor of Practice, Department of Strategic, Entrepreneurship and Venture Innovation, 2020.
Otoshi, Elais, M.B.A. (Grand Canyon University), Professor, Army ROTC, 2020.

Overby, Theresa, B.A. (University of Arkansas, Little Rock), Instructor, School of Human Environmental Sciences, 2020.
Overstreet, Tyler, M.A. (University of Illinois), B.S. (Missouri Southern State University), Lecturer, Department of Political Science, 2022.
Owen, Donna S., M.S., B.S., B.A. (University of Arkansas), Clinical Instructor, Department of Curriculum and Instruction, 2005.

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Paez, Rocio Alejandra, Ph.D., M.A., B.A. (University of Arkansas at Little Rock), Teachinig Associate Professor, Department of Sociology and Criminology, 2018, 2023.
Page, Patricia, J.D. (University of Arkansas at Little Rock), M.S.W. (Florida State University), B.S.W. (University of Arkansas), Lecturer, School of Social Work, 2014.
Pan, Yanjun, Ph.D., (University of Arizona), B.E. (Nanjing University of Aeronautics and Astronautics, China), Assistant Professor, Department of Computer Science and Computer Engineering, 2022.
Panayotova, Miroslava Saifur, Ph.D. (University of Arizona), Instructor, Department of Music, 2014.
Panda, Brajendra Nath, Ph.D. (North Dakota St. University), M.S. (Utkal University, India), Professor, Department of Computer Science and Computer Engineering, 2001, 2007.
Paradise, Thomas R., Ph.D. (Arizona State University), M.Sc. (Georgia State University), F.G.A. (Goldsmith Hall Gem-A, London), G.G.
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Park, Doyoung, Ph.D., M.A. (University of Colorado) B.S. (Sogang University, Seoul), Assistant Professor, Department of Economics, 2019. Park, Jinoh, Ph.D. (North Carolina State University), E.M.B.A. (Aalto University), M.B.A. (Seoul School of Integrated Sciences \& Technology), B.S. (Hanyang University), Assistant Professor, Department of Interior Architecture and Design, 2021.
Park, Joon, Ph.D. (University of Oregon), M.A., B.M. (Eastman School of Music), Assistant Professor, Department of Music, 2016.
Park, Moon-Sook, D.M.A. (University of Cincinnati), M.M. (Staatliche Hochschule fur Musik in Freiburg), B.M. (University of Seoul National), Associate Professor, Department of Music, 2012, 2017.
Parke, Elizabeth A., Ph.D. (University of Hawaii), M.S. (University of Utah), B.A. (Hope College), Assistant Professor, Department of Health, Human Performance and Recreation, 2021.
Parker, Betty, M.S.W., B.S.W. (University of Arkansas), Lecturer, School of Social Work, 2013, 2017.
Parker, Martha A., M.L.I.S. (University of North Carolina at Greensboro), B.A. (Queens University of Charlotte), A.A. (Central Piedmont Community College), Assistant Librarian, University Libraries, 2012.
Parker-Gibson, Necia T., M.L.I.S. (Louisiana State University), B.S.A. (University of Arkansas), Librarian, University Libraries, 1991, 2014.
Parkerson, Pat, Ph.D., B.S. (University of Arkansas), Associate
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Parks, Nathan A., Ph.D., M.S. (Georgia Institute of Technology), B.A. (University of Virginia), Assistant Professor, Department of Psychological Science, 2012.
Parnell, Gregory S., Ph.D. (Stanford University), M.S. (University of Southern California), M.E.I.S.E. (University of Florida), B.S. (University of New York at Buffalo), Professor of Practice, Department of Industrial Engineering, 2013.
Parrilla Recuero, Antonio, Ph.D. (Indiana University), M.A. (University of Memphis), Instructor, Department of World Languages, Literatures and Cultures, 2020.
Parry, Janine A., Ph.D., M.A. (Washington State University), B.A.
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Paul, Kathleen, Ph.D., M.A. (Arizona State University), B.A. (New York University), Assistant Professor, Department of Anthropology, 2019.
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Payne, Whitney, M.S.W (University of Arkansas), B.S.W (University of Alaska-Anchorage), Clinical Assistant Professor, School of Social Work, 2013, 2014.
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Perkins, Asher, M.M. (University of Arkansas), Lecturer, Department of Music, 2020.
Perryman, Kristi Leann, Ph.D. (University of Arkansas), M.S., B.S.
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Peters, Gary F., Ph.D. (University of Oregon), M.S. (University of Missouri-Columbia), B.S. (Arkansas Tech University), Professor, William Dillard Department of Accounting, S. Robson Walton Chair in Accounting, 2003, 2012.
Peterson, David, Ph.D. (University of North Carolina), M.S. (Air
Force Institute of Technology), B.S. (Iowa State University), Instructor, Operations Management Program, 2018.
Peterson, Katelyn, M.S.N., B.S.N. (University of Arkansas), Instructor, Eleanor Mann School of Nursing, 2021.
Petrenko, Oleg, Ph.D. (Oklahoma State University), M.B.A., B.S.B.A. (University of Central Oklahoma), Assistant Professor, Department of Strategic, Entrepreneurship and Venture Innovation, 2020.
Petris, Giovanni, Ph.D., M.S. (Duke University), B.S. (Universita degli Studi di Milano, Italy), Professor, Department of Mathematical Sciences, 1999, 2015.
Petrone, Kim, J.D. (Northwestern University), B.A. (Southern Methodist University), Teaching Assistant Professor, William Dillard Department of Accounting, 2012, 2020.
Philipp, Dirk, Ph.D. (Texas Tech University), M.S., B.S. (University of Leizig, Germany), Associate Professor, Department of Animal Science, 2007, 2015.
Phillips, Jared, Ph.D., M.A., B.A. (University of Arkansas), Clinical Assistant Professor, International and Global Studies Program, 2017.
Philyaw Perez, Amanda, Ph.D., M.P.H. (University of Arkansas for Medical Sciences), B.S. (University of Arkansas at Little Rock), Assistant Professor, Department of Horticulture, 2020.
Pierce, Benjamin J., D.M.A., M.M. (University of Michigan-Ann Arbor), B.M. (Bowling Green State University), Professor, Department of Music, 2003, 2015.
Pierce, Lisa, M.S. (University of Georgia), B.S. (University of Tennessee), Instructor, Department of Information Systems, 2014.
Pierce, Michael C., Ph.D., M.A. (The Ohio State University), B.A. (Kenyon College), Associate Professor, Department of History, 2001, 2011.

Pijanowski, John C., Ph.D., M.S. (Cornell University), B.A. (Brown University), Professor, Department of Curriculum and Instruction, 2007, 2010.

Pinto, Ines, Ph.D. (Louisiana State University Health Sciences Center), M.S., B.S. (University of Chile), Associate Professor, Department of Biological Sciences, 2000, 2006.
Pittman, Harrison Mauzy, LL.M. (University of Arkansas), J.D., B.A. (University of Arkansas at Little Rock), Assistant Professor, 2001.
Place, Alison L., M.F.A (Miami University), Assistant Professor, School of Art, 2017.
Plassmeyer, Mark P., Ph.D. (University of Denver), M.S.W. (University of Pittsburg), B.A (Fort Lewis College), Assistant Professor, School of Social Work, 2019.
Plavcan, Joseph M., Ph.D., B.A. (Duke University), Professor, Department of Anthropology, 2001, 2010.
Plummer, Sean, Ph.D., M.S. (Texas A\&M University), B.S. (North Carolina State University), Assistant Professor, Department of Mathematical Sciences, 2022.
Pohl, Edward A., Ph.D., M.S.R.E. (University of Arizona), M.S.S.E. (Air Force Institute of Technology), M.S.E.M. (University of Dayton), B.S.E.E. (Boston University), Professor, Department of Industrial Engineering, Twenty-First Century Professorship in Engineering, 2004, 2013.
Pohl, Letitia, Ph.D. (University of Arkansas), M.S.S.E. (Air Force Institute of Technology), B.S.M.E. (Tulane University), Teaching Associate Professor, Department of Industrial Engineering, 2013, 2021.
Pohlman, Fred W., Ph.D. (Kansas State University), M.S. (University of Tennessee), B.S. (University of Missouri-Columbia), Professor, Department of Animal Science, 1997, 2009.
Pollock, Chad Aaron, M.A. (University of Missouri-Columbia), M.Div. (Baylor University), B.A. (Ouachita Baptist University), Assistant Librarian, University Libraries, 2011.
Poncet, Aurelie, Ph.D. (Auburn University), M.S. (Montpellier SupAgro,
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Assistant Professor, Department of Crop, Soil and Environmental Sciences, 2020.
Pope, Adam, Ph.D. (Purdue University), M.A. (University of Arkansas), B.A. (Freed-Hardeman University), Assistant Professor, Department of English, 2013.
Popejoy, Erin O., Ph.D. (University of Texas-San Antonio), M.A. (Texas State University), B.A. (Case Western Reserve University), Assistant Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2015.
Popp, Jennie Sheerin, Ph.D., M.S. (Colorado State University), B.S. (University of Scranton), Professor, Department of Agricultural Economics and Agribusiness, 1998, 2010.
Popp, Michael P., Ph.D. (Colorado State University), M.B.A. (University of Colorado-Boulder), B.Comm. (University of Manitoba), Professor, Department of Agricultural Economics and Agribusiness, 1998, 2006.
Porter, Errol, M.S.E.E., B.S.E.E. (University of Arkansas), Research Associate, 1997, 1999.
Posnak, Adam, M.F.A (Louisiana State University and A\&M College), Instructor, School of Art, 2010.
Post, Rana, M.B.A. (William Woods University), B.S. (University of Missouri, Columbia), Instructor, School of Human Environmental Sciences, 2008.
Potra, Adriana, Ph.D. (Florida International University), M.S., B.S. (University of Babes-Bolyai, Romania), Associate Professor, Department of Geosciences, 2012, 2019.
Powell, Jeremy G., Ph.D. (University of Arkansas), D.V.M. (Oklahoma State University), B.S. (University of Arkansas), Professor, Department of Animal Science, 2009, 2013.

Powell, Rob, M.S., B.S. (Louisiana State University), Instructor, School of Human Environmental Sciences, 2020.
Power, Daniel, B.S.M.E., (University of Arkansas), Instructor, Department of Civil Engineering, 2022.
Prinz, Gary S., Ph.D, M.S., B.S. (Brigham Young University), Associate Professor, Department of Civil Engineering, James T. Womble Professor of Computational Mechanics and Nanotechnology Modeling, 2014, 2019.
Pritchard, Eric, Ph.D., M.A., (University of Wisconsin-Madison), B.A.
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Prosandeev, Sergey, Ph.D., M.S. (Rostov State University), Research Professor, Department of Physics, 2005, 2016.
Pulido Rull, Ana, Ph.D., M.A. (Harvard University), B.A. (National Autonomous University of Mexico), Associate Professor, School of Art, 2012, 2018.
Pullen, Brian, M.A. (University of Arkansas), B.S. (Arkansas Tech University), Instructor, Department of Management, 2005.
Purcell, Larry C., Ph.D. (University of Florida), M.S., B.S. (University of Georgia), Distinguished Professor, Department of Crop, Soil and Environmental Sciences, Ben J. Altheimer Chair for Soybean Research, 1993, 2017.
Purdy, Ashley, Ph.D. (University of Pittsburgh), B.A. (State University of New York-Binghamton), Visiting Assistant Professor, Department of Philosophy, 2022.
Puvanakrishnan, Priyaveena, Ph.D. (University of Texas at Austin), Instructor, Department of Biomedical Engineering, 2015.
Pérez Arroyo, Elkin Javier, M.A. (University of Arkansas), B.A.
(Universidad de Córdoba, Montería, Colombia), Instructor, Department of World Languages, Literatures and Cultures, 2017.
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Qian, Xianghong, Ph.D., M.Phil. (George Washington University), B.S. (Nanjing University, P.R. China), Professor, Department of Biomedical Engineering, 2011, 2016.
Quetsch, Lauren, Ph.D., M.S. (West Virginia University), B.A.
(Georgetown University), Assistant Professor, Department of
Psychological Science, 2019.
Quinn, Elizabeth Hart, M.F.A. (Virginia Commonwealth University), B.A. (Sewanee University), Instructor, 2011.
Quinn, Kyle P., Ph.D. (University of Pennsylvania), B.S. (University of Wisconsin), Assistant Professor, Department of Biomedical Engineering, 2014.

Quinn, William A., Ph.D., M.A. (The Ohio State University), B.A. (Xavier University), Distinguished Professor, Department of English, 1979, 2018.
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Radan, Nikola, M.M., B.M. (University of Belgrade), Lecturer, Department of Music, 2018.
Radan, Nikola, M.M., B.M. (University of Belgrade), Instructor, Department of Music, 2018.
Ragsdale, Chal, M.M. (East Carolina University), B.S. (Auburn
University), University Professor, Department of Music, 1975, 2013.
Rahman, Muhammad, Ph.D. (Indiana University), M.S., B.S. (University of Dhaka), Clinical Assistant Professor, Department of Economics, 2014. Raich, Andrew Seth, Ph.D., M.A. (University of Wisconsin-Madison), B.A. (Williams College), Professor, Department of Mathematical Sciences, 2008, 2018.
Raines, Anne, M.A., B.A. (University of Arkansas), Instructor, Department of English, 2019.
Rainey, Daniel V., Ph.D., M.S. (Purdue University), B.S.A. (University of Arkansas), Associate Professor, Department of Agricultural Economics and Agribusiness, 2000, 2006.

Rainey, Ronald L., Ph.D., M.S., B.S.A. (University of Arkansas), Professor, Department of Agricultural Economics and Agribusiness, 1993, 2012.

Rainwater, Candace Auburn, Ph.D. (University of Florida), Instructor, Engineering, 2012.
Rainwater, Chase E., Ph.D. (University of Florida), B.S.I.E. (University of Arkansas), Professor, Department of Industrial Engineering, Twenty-First Century Professorship in Engineering, 2009, 2021.
Rajaram, Narasimhan, Ph.D. (University of Texas, Austin), B.E. (Anna University, India), Assistant Professor, Department of Biomedical Engineering, 2014.
Raley, Sheida K., PH.D. (University of Kansas), M.Ed. (Vanderbilt University), B.S. (Boston University), Assistant Professor, Department of Curriculum and Instruction, 2023.
Ralston, Christine R., Ph.D. (Purdue University), M.Ed., B.S. (Indiana Wesleyan University), Clinical Associate Professor, Department of Curriculum and Instruction, 2015, 2020.
Rao, Raj R., Ph.D. (University of Georgia), M.S. (University of Texas), M.Sc., B.E. (Birla Institute of Technology and Sciences, India), Professor, Department of Biomedical Engineering, 2016.
Raoux, Katherine, Ph.D. (Brandeis University), B.A. (New College of Florida), Assistant Professor, Department of Mathematical Sciences, 2022.

Rapert, Molly, Ph.D. (University of Memphis), M.B.A., B.S.B.A.
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Rath, Narayan C., Ph.D., M.S. (University of Delhi-India), B.S. (Utkal University-India), Research Professor, Department of Poultry Science, 1992, 1998.
Rauth, Cynthia A., M.A. (University of Washington), Instructor, English Language and Cultural Studies Program, 2014.
Rawson, Caleb, Ph.D. (University of Colorado at Boulder), B.S. (Colorado Christian University), Assistant Professor, William Dillard Department of Accounting, 2018.
Raymundo, Fellipe, Ph.D. (University of Tennessee, University of Arkansas), M.A. (University of Arkansas), B.A. (lbmec), Assistant Professor, William Dillard Department of Accounting, 2020.
Reeber, Joy Elisabeth, Ph.D., M.A. (University of Wisconsin-Madison),
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Reece, Bryan, Ph.D. (University of Toronto), M.St. (University of Oxford), M.A. (University of Oklahoma), B.A. (Oklahoma Baptist University), Assistant Professor, Department of Philosophy, 2020.
Reed, Chad, M.Acc. (University of Missouri-Columbia), Instructor, William Dillard Department of Accounting, 2022.
Reeves, Carol, Ph.D. (University of Georgia), M.A. (University of South Carolina), B.S. (Georgia Southern College), Professor, Department of Strategic, Entrepreneurship and Venture Innovation, Cecil and Gwendolyn Cupp Applied Professorship in Entrepreneurship, 1990, 2012.
Rennie, Craig, Ph.D. (University of Oregon), M.B.A. (Dalhousie University), B.A. (University of Toronto), Associate Professor, Department of Finance, Clete and Tammy Brewer Professorship in Business, 2001, 2007.

Renteria, Kimberly, J.D. (University of Arkansas at Little Rock), B.S. (Arkansas Tech University), Lecturer, Department of Political Science, 2023.

Restrepo, Luis Fernando, Ph.D., M.A. (University of Maryland-College Park), B.A. (Universidad Pontificia Bolivariana), University Professor, Department of World Languages, Literatures and Cultures, 1995, 2016. Rhoads, Douglas Duane, Ph.D. (Kansas State University), M.A., B.A. (Wichita State University), University Professor, Department of Biological Sciences, 1990, 2006.

Rice, Lanny, M.S. (University of Arkansas), Instructor, Department of Agricultural Education, Communications and Technology, 2012.
Richards, Kat, M.F.A. (University of Arkansas), B.A. (University of Kansas), Visiting Assistant Professor, School of Art, 2022.
Richardson, Mike, Ph.D. (University of Georgia), M.S. (Louisiana State University), B.S. (Louisiana Tech University), Professor, Department of Horticulture, 1998, 2007.
Richardson, Tracey, Ed.D. (Argosy University), M.S., B.A.Sc. (Troy University), Instructor, Operations Management Program, 2009.
Richardson, Vernon J., Ph.D. (University of Illinois-Urbana-Champaign), M.B.A., B.S. (Brigham Young University), Distinguished Professor, William Dillard Department of Accounting, G. William Glezen Jr. Endowed Chair in Accounting, 2005, 2016.
Richardson, Will, Ph.D. (Texas A\&M University), B.S. (University of Arkansas), Associate Professor, Ralph E. Martin Department of Chemical Engineering, Bates Teaching Professorship in Chemical Engineering, . Rickard, Brian, Ph.D., M.Ed., B.S. (University of Arkansas), Teaching Associate Professor, Department of Mathematical Sciences, 2015.
Ridge, Jason, Ph.D., M.A., B.A. (Oklahoma State University), Associate Professor, Department of Strategic, Entrepreneurship and Venture Innovation, 2015, 2017.
Rieck, Yo'av, Ph.D. (University of Texas at Austin), B.A. (Israel Institute of Technology), Professor, Department of Mathematical Sciences, 2000, 2010.

Rieske, David, M.S., B.S. (University of Arkansas), Instructor, Operations Management Program, 2007.
Riggs, Chloe B., M.P.A., B.A. (University of Arkansas), Lecturer, Department of Political Science, 2021.
Riha, Michael, M.F.A. (Indiana University at Bloomington), B.F.A. (University of Wisconsin, Stevens Point), Professor, Department of Theatre, 1992, 2008.
Riley, Nastassja, M.M. (Florida State University), Lecturer, Department of Music, 2014.
Riley, Timothy B., Ph.D., M.B.A., B.S.S. (University of Kentucky), Assistant Professor, Department of Finance, 2016.
Riva, Fernando, Ph.D. (Yale University), Visiting Assistant Professor, Department of World Languages, Literatures and Cultures, 2017.
Rivera, Daniel J., Ph.D. (New Mexico State University), M.S. (West Texas A\&M University), Associate Professor, Department of Animal Science, 2021.
Roberts, Monty, M.S., B.S. (University of Arkansas), Instructor, Department of Mechanical Engineering, 2011.
Roberts, Robin, Ph.D., M.A. (University of Pennsylvania), B.A. (Mount Holyoke College), Professor, Department of English, 2011.
Roberts, Trenton L., Ph.D. (University of Arkansas), M.S. (University of Arizona), B.S. (Oklahoma State University), Associate Professor, Department of Crop, Soil and Environmental Sciences, 2010, 2017.
Robertson, Lona, Ed.D. (Indiana University, Bloomington), M.S., B.S. (Florida State University), Professor, School of Human Environmental Sciences, 2006, 2011.
Robinson, Charles F., Ph.D. (University of Houston), M.A. (Rice University), B.A. (University of Houston), Professor, Department of History, 1999, 2011.
Robinson, Eddie, PhD. (Northcentral University), M.A.S. (Embry Riddle Aeronautical University), M.S. (University of Arkansas), B.S. (United States Air Force Academy), Instructor, Operations Management Program, 2007.

Robinson, Samantha, Ph.D., M.S., B.S. (University of Arkansas), Teaching Associate Professor, Department of Mathematical Sciences, Julia A. Hicks Chair, 2015, 2022.

Rochell, Samuel J., Ph.D. (University of Illinois at Urbana-Campaign), M.S., B.S. (Auburn University), Assistant Professor, Department of Poultry Science, 2016.
Rodriguez, Sarah, Ph.D., B.A. (University of Pennsylvania), Assistant Professor, Department of History, 2016.
Roe, Larry, Ph.D. (University of Florida), M.S., B.S.M.E. (University of Mississippi), Associate Professor, Department of Mechanical Engineering, 1994, 2000.
Roessger, Kevin, Ph.D., M.S., B.A. (University of Wisconsin-Milwaukee), Associate Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2016, 2019.
Rogers, Marilyn L., M.L.S. (Louisiana State University), B.A.
(Northwestern State University), Assistant Librarian, University Libraries, 1987.

Rojas, Alejandro, Ph.D., M.S. (Michigan State University), M.S., B.S. (Los Andes University), Assistant Professor, Department of Entomology and Plant Pathology, 2018.
Rojas, Clemencia, Ph.D. (Cornell University), M.S. (Purdue University), B.S. (Universidad de Los Andes, Colombia), Assistant Professor, Department of Entomology and Plant Pathology, 2015.
Rom, Curt R., Ph.D., M.S. (The Ohio State University), B.S. (University of Arkansas), University Professor, Department of Horticulture, 1989, 2014.
Rorie, Rick, Ph.D. (Louisiana State University), M.S., B.S. (University of Arkansas), Professor, Department of Animal Science, 1989, 2003.
Rosa, Ananda, M.S.W. (University of Arkansas at Little Rock), B.A. (University of Arkansas), Clinical Associate Professor, School of Social Work, 2010, 2022.
Rosa-Caldwell, Megan, Ph.D. (University of Arkansas), M.S. (University of Arkansas), B.S. (Baker University), Assistant Professor, Department of Health, Human Performance and Recreation, 2023.
Rosales, Claudia, Ph.D., M.S. (University of Cincinnati), B.S.
(Universidad Rafael Landivar), Assistant Professor, J.B. Hunt Transport Department of Supply Chain Management, 2021.
Rosales, Steven, Ph.D. (University of California-Irvine), B.A. (University of California-San Diego), Associate Professor, Department of History, 2013, 2018.
Rosen, Chris, Ph.D. (University of Akron), M.A. (Appalachian State University), B.A. (Washington and Lee University), Professor, Department of Management, 2006, 2015.
Rossetti, Manuel D., Ph.D., P.E., M.S.I.E. (The Ohio State University), B.S.I.E. (University of Cincinnati), University Professor, Department of Industrial Engineering, 1999, 2022.
Rossiter-Hofer, Adriana, Ph.D. (University of Maryland-College Park), M.S. (Federal University of Rio de Janeiro, Brazil), B.S. (Federal University of Pernambuco, Brazil), Associate Professor, J.B. Hunt Transport Department of Supply Chain Management, 2008, 2016. Rotolo, Chuck, M.Arch. (Washington University in St. Louis), B.Arch. (Louisiana State University), Assistant Professor, Department of Architecture, 2005.
Rowe, Stephen, Ph.D. (University of Illinois), M.S. (Loyola University Chicago), B.A. (Covenant College), Associate Professor, William Dillard Department of Accounting, 2016, 2020.
Roy, William, M.S. (University of Arkansas), B.S. (University of Memphis), Instructor, Operations Management Program, 2002.
Rucker, Kathryn Jill, Ph.D., M.B.A., B.S. (Oklahoma State University), Associate Professor, Department of Agricultural Education, Communications and Technology, 2013, 2018.
Rudzinski, Russell D., M.A. (Washington University in St. Louis), B.Arch. (Syracuse University), Assistant Professor, Department of Architecture, 2000.

Rulli, Richard J., D.M.A. (University of Wisconsin-Madison), M.M. (Ithaca College), B.M. (University of Northern Colorado), Associate Professor, Department of Music, 2003, 2009.
Rumley, Elizabeth R., LL.M. (University of Arkansas), J.D. (University of Toledo), B.A. (Michigan State University), Instructor, Department of Animal Science, 2012.
Rumley, Rusty W., J.D. (University of Oklahoma), Research Assistant Professor, Department of Agricultural Economics and Agribusiness, 2009.
Runkle, Benjamin R.K., Ph.D., M.S. (University of California-Berkeley),
B.S. (Princeton University), Assistant Professor, Department of Biological and Agricultural Engineering, 2014.
Runkles, Henry S., M.M. (University of Arkansas), Instructor, Department of Music, 2002.
Rupe, John C., Ph.D., M.S. (University of Kentucky), B.S. (Colorado State University), University Professor, Department of Entomology and Plant Pathology, 1984, 2019.
Russell, Alex, Ph.D. (Texas A \& M University), M.A. (University of Houston), B.S. (University of Houston), Assistant Professor, Department of Health, Human Performance and Recreation, 2020.
Russell, Mark, Ed.D. (Texas Tech University), M.S., B.S. (Colorado State University), Assistant Professor, Department of Animal Science, 2010. Ryan, Jeffrey J., Ph.D., M.A. (Rice University), B.A. (Colorado State University), Associate Professor, Department of Political Science, 1990, 1996.

Ryan, John, Ph.D. (University of York), M.Sc. (University of Warwick), B.A. (University of York, Britain), Distinguished Professor, Department of Mathematical Sciences, 1990, 2019.
Ryburn, Tori, M.S. (University of Arkansas), B.S. (University of ArkansasMonticello), Instructor, Department of Mathematical Sciences, 2013.

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Sabatini, Lindsey Rachel, D.N.P., M.S., B.S.N., B.S. (University of Arkansas), Instructor, Eleanor Mann School of Nursing, 2012.
Sabherwal, Rajiv, Ph.D. (University of Pittsburgh), P.G.D.M. (Indian Institute of Management), B.S.E.E. (Regional Engineering College, India), Distinguished Professor, Department of Information Systems, Edwin and Karlee Bradberry Chair, 2011, 2019.
Sabon, Lauren, Ph.D. (University of Tennessee-Knoxville), M.S/M.A. (Marshall University), B.S., B.A. (West Virginia University), Teaching Associate Professor, Department of Sociology and Criminology, 2014, 2017.

Sacharoff, Laurent A., J.D. (Columbia University), B.A. (Princeton University), Associate Professor, School of Law, 2010.
Saeidi, Shirin, Ph.D. (University of Cambridge, United Kingdom), M.A. (George Mason University), B.A. (University of Maryland-College Park), Assistant Professor, Department of Political Science, 2018.
Sakon, Joshua, Ph.D. (University of Wisconsin-Madison), B.S.
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Salamo, Gregory J., Ph.D. (City University of New York), M.S. (Indiana University-Purdue University-Indianapolis), B.S. (City University of New York, Brooklyn College), Distinguished Professor, Department of Physics, 1975, 2005.
Salas, Alexis, Ph.D. (University of Texas at Austin), Endowed Assistant Professor, School of Art, 2022.
Salisbury, Luti, M.Sc. (Loughborough University of Technology), B.Sc. (University of Guyana), Distinguished Professor, University Libraries, 1992, 2015.
Salonen, Rick, Ed.D., M.M. (University of Arkansas), B.M. (Central Michigan University), Instructor, Department of Music, 2008.

Salter, Kandy S.L., O.T.D. (University of Kansas), M.S. (University of Central Arkansas), Clinical Assistant Professor, Department of Communication Disorders and Occupational Therapy, 2018.
Samsonraj, Rebekah M., Ph.D. (Cornell University), B.S. (University of Colorado, Boulder), Assistant Professor, Department of Biomedical Engineering, 2020.
Samuels, Mandel G., M.B.A. (University of Arkansas), B.A. (Oklahoma State University), Clinical Assistant Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2012, 2018.

Sasidharan, Lekshmi, Ph.D. (Pennsylvania State University), M.S. (National Institute of Technology), B.S. (University of Kerala), Teaching Assistant Professor, Department of Civil Engineering, 2022.
Saunders, Robert F., M.S.E.E., M.S. (University of Arkansas), Instructor, Department of Electrical Engineering, 2012.
Savin, Mary Cathleen, Ph.D., M.S. (University of Rhode Island), B.S. (University of Notre Dame), Professor, Department of Crop, Soil and Environmental Sciences, 2002, 2011.
Scaif, Jacquelyn, M.E. (Harding University), B.A. (Arkansas State University), Instructor, Department of Curriculum and Instruction, 2023.
Schaffer, Meline M., Ph.D., M.S. (Clemson University), Teaching Assistant Professor, Department of Management, 2019.
Scheide, Frank Milo, Ph.D. (University of Wisconsin-Madison), M.A. (New York University), B.S. (University of Wisconsin-River Falls), Professor, Department of Communication, 1977, 2008.
Schluterman, Heath A., Ph.D., B.S. (University of Arkansas), Instructor, Engineering, 2009.
Schmitt, Abigail, Ph.D. (University of Florida), M.S. (University of Northern Colorado), B.S. (University of North Carolina), Assistant Professor, Department of Health, Human Performance and Recreation, 2020.

Schmitt, Craig, Ph.D. (University of Northern Colorado), M.B.A. (University of Central Florida), B.S. (University of Florida), Teaching Assistant Professor, Department of Health, Human Performance and Recreation, 2020.
Schmitt, Jean, M.F.A. (Vermont College), B.F.A. (Alfred University), Assistant Professor, School of Art, 2022.
Schneider, Susan, LL.M. (University of Arkansas), J.D. (University of Minnesota-Twin Cities), B.A. (College of Saint Catherine), Professor, School of Law, 1998, 2006.
Schott, Elizabeth W., Ph.D., M.S. (New Mexico State University), M.S.I.E. (Georgia Institute of Technology), Instructor, Operations Management Program, 2017.
Schreckhise, William D., Ph.D., M.A., B.A. (Washington State University), Professor, Department of Political Science, 1998, 2020.
Schroeder, Melinda, M.A. (University of Arkansas), B.S. (Northeastern State University), Instructor, Department of Mathematical Sciences, 2016.
Schubert, Karl, Ph.D. (University of Arkansas), M.S.Ch.E. (University of Kentucky), B.S.Ch.E (University of Arkansas), Professor of Practice, Department of Industrial Engineering, 2016.
Schulte, Bret J., M.F.A. (George Mason University), B.A. (University of Nebraska-Lincoln), Professor, School of Journalism and Strategic Media, 2008, 2023.
Schulte, Christopher M., Ph.D. (Pennsylvania State University), Associate Professor, School of Art, 2019.
Schulte, Stephanie Ricker, Ph.D., M.A. (George Washington University), B.A. (University of Arkansas), Professor, Department of Communication, 2008.

Scott, Adrienne R., M.S.W. (University of Texas, Arlington), B.A.
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Work, 2014, 2022.

Scott, Allison L., D.N.P. (University of Missouri-Kansas City), M.S.N., B.S.N. (University of Arkansas for Medical Sciences), Associate Professor, Eleanor Mann School of Nursing, 2006, 2021.
Scott, Marc, Ph.D. (North Dakota State University), M.S., B.S. (South Carolina State University), Assistant Professor of Practice, J.B. Hunt Transport Department of Supply Chain Management, 2016.
Scott, Robert C., Ph.D. (Mississippi State University), M.S., B.S. (Oklahoma State University), Professor, Department of Crop, Soil and Environmental Sciences, 2002, 2008.
Scroggin, Sloan, M.S. (University of Arkansas), B.B.A. (University of Arkansas-Little Rock), Instructor, Department of Mathematical Sciences, 2013.

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Selvam, R. Panneer, Ph.D. (Texas Tech University), M.S.C.E. (South Dakota School of Mines and Technology), M.E., B.E. (University of Madras, India), University Professor, Department of Civil Engineering, 1986, 2010.
Senor, Thomas D., Ph.D., M.A. (University of Arizona), B.S. (University of Oregon), Professor, Department of Philosophy, 1989, 2012.
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Sexton, Kim, Ph.D., M.A., M.Phil. (Yale University), B.A. (State University of New York at Binghampton), Associate Professor, Department of Architecture, 1999, 2005.
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Shadwick, John D.L., M.S. (University of Arkansas), B.S. (University of Central Arkansas), Instructor, Department of Biological Sciences, 2011.
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Shallcross, Nicholas, Ph.D. (University of Arkansas), M.S. (Air Force Institute of Technology), B.S. (Virginia Military Institute), Instuctor, Operations Management Program, 2020.
Shannon, Graham F., M.Arch. (Rice University), B.Arch., B.A. (University of Arkansas), Professor, Department of Architecture, 1979, 1990.
Sharma, Ashish, Ph.D. (University of Georgia), M.Fin. (University of Glasgow), M.B.A., B.S.B.A (Indraprastha University), Assistant Professor, Department of Marketing, 2020.
Sharman, Glenn R., Ph.D. (Stanford University), B.S. (Wheaton College), Associate Professor, Department of Geosciences, 2017.
Sharpless, Charles, M.Arch. (Harvard University), B.Arch. (Rice
University), Assistant Professor, Department of Interior Architecture and Design, 2020.
Shaulis, Barry J., Ph.D., M.S., B.S. (University of Houston), B.B.A. (University of Georgia), Research Associate, Department of Geosciences, 2016.

Shaw, John B., Ph.D. (University of Texas at Austin), B.A. (Oberlin College), Associate Professor, Department of Geosciences, 2014, 2019.
Shelton, Gina, B.A. (Mississippi State University), Instructor, School of Journalism and Strategic Media, 2013.
Shelton, Leslie Jo, Ph.D. (Michigan State University), M.Ed., B.A. (Ohio University), Associate Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2014, 2018.

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Shields, Christopher A., Ph.D., J.D., M.A., B.A. (University of Arkansas), Teaching Associate Professor, Department of Sociology and Criminology, 2003, 2017.
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Shields, Todd G., Ph.D., M.A. (University of Kentucky), B.A. (Miami University), Professor, Department of Political Science, 1994, 2005.
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Shook, Carole, M.S.B.A., B.S.B.A. (University of Arkansas), Teaching Associate Professor, Department of Information Systems, 1999, 2023.
Shou, Wan, Ph.D. (Missouri University of Science and Technology),
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Shreve, Marilou D., D.N.P., M.S.N. (University of Missouri-Kansas City), B.S.N. (University of Arkansas), Associate Professor, Eleanor Mann School of Nursing, 2013, 2021.
Siahmakoun, Lobat, M.S. (University of Arkansas), B.S. (Missouri Southern State University), Instructor, School of Human Environmental Sciences, 2015.
Siebenmorgen, Terrence J., Ph.D. (University of Nebraska-Lincoln), M.S.Ag.E. (Purdue University), B.S.Ag.E. (University of Arkansas), Distinguished Professor, Department of Food Science, 1984, 2015. Siebrits, Helene, M.F.A. (University of California, Los Angeles), B.A. (University of California, Los Angeles), Associate Professor, Department of Theatre, 2020.
Siepielski, Adam M., Ph.D. (University of Wyoming-Laramie), M.S. (New Mexico State University), B.S. (Pennsylvania State University-University Park), Associate Professor, Department of Biological Sciences, 2015, 2019.

Simon, Lauren, Ph.D., B.S.B.A., B.S. (University of Florida), Associate Professor, Department of Management, 2016, 2018.
Singer, Pecos, D.M.A. (University of Maryland), M.M. (San Francisco Conservatory), B.M. (University of Oregon), Instructor, Department of Music, .
Singh, Surendra P., Ph.D., M.A. (University of Rochester), M.Sc., B.Sc. (Banaras Hindu University, India), University Professor, Department of Physics, 1982, 2016.
Skinner, Stephen R., M.S., B.S. (University of Arkansas), Instructor, Department of Physics, 1998.
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Smith, Annie B., LL.M. (George Washington University), J.D. (University of Wisconsin-Madison), Associate Professor, School of Law, 2012, 2016.
Smith, Benjamin C., M.F.A. (University of Pittsburgh), B.A. (University of Dallas), Assistant Professor, Department of Theatre, 2019.
Smith, Carl Alan, Ph.D., M.A. (University of Sheffield), B.Sc. (University of Lancaster), Associate Professor, Department of Landscape Architecture, 2008, 2013.
Smith, Christy L., Ed.D., Ed.S., M.S.E., B.S.E. (University of Arkansas), Clinical Assistant Professor, Department of Curriculum and Instruction, 2019.

Smith, Joshua Byron, Ph.D., M.A. (Northwestern University), B.A. (University of Illinois at Chicago), Associate Professor, Department of English, 2011, 2019.
Smith, Leah, Ph.D. (University of Tennessee), M.B.A. (Wake Forest University), B.A. (Indiana University), Assistant Professor, Department of Marketing, 2020.
Smith, Martin, B.S. (Oklahoma State University), Assistant Professor, Air Force ROTC, 1st Lieutenant, 2018.
Smith, Scott, M.S. (University of Arkansas), M.S. (Air Force Institute of Technology), B.S. (United States Air Force Academy), Instructor, Operations Management Program, 2006.
Smith-Nix, Angela, Ph.D. (University of Arkansas), M.Ed., B.S.E. (Arkansas State University), Teaching Professor, Department of Health, Human Performance and Recreation, 1989.
Snyder, Tamara D., M.S. (University of Arkansas), B.S. (University of California-Los Angeles), Teaching Assistant Professor, Department of Physics, 2004.
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Song, Geoboo, Ph.D. (University of Oklahoma), B.A. (Korea University), B.A. (Hanyang University), Associate Professor, Department of Political Science, 2012, 2019.
Song, Xiaoqing, Ph.D. (North Carolina State University), M.S., B.S. (Beijing Institute of Technology), Assistant Professor, Department of Electrical Engineering, 2022.
Song, Young Hye, Ph.D. (Cornell University), Assistant Professor, Department of Biomedical Engineering, 2019.
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Sosa, Ninette, M.A. (University of Arkansas), B.A. (San Diego State University), Instructor, School of Journalism and Strategic Media, 2021.
Southward, Leigh, Ph.D., M.S., B.S. (University of Tennessee), B.S.
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Sparks, Leigh Pryor, Ph.D. (University of Arkansas), M.A., B.A. (Stanford University), Instructor, Department of English, 2009, 2019.
Spears, Kari R., M.S.W., B.A. (University of Arkansas), Instructor, School of Social Work, 2016.
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Sprandel, Heather, Ed.D., M.Ed. (University of Arkansas), B.A. (DePaul University), Instructor, Department of Management, 2019.
Springer, Bethany Lynn, M.F.A. (University of Georgia), B.A. (Virginia Polytechnic Institute and State University), Associate Professor, School of Art, 2006, 2012.
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Starks, Trish, Ph.D., M.A. (The Ohio State University), B.A. (University of Missouri), Professor, Department of History, 2000, 2018.
Starling-Ledbetter, Robyn M., M.A., B.A. (University of Arkansas), Instructor, School of Journalism and Strategic Media, 2007.
Stassen, Robert E., Ph.D., M.B.A. (University of Nebraska-Lincoln), B.S. (University of Minnesota), Associate Professor, Department of Marketing, 1989.

Stauss, Kim, Ph.D. (University of Utah), M.S.W. (California State University at Sacramento), B.S. (Stephen F. Austin State University), Associate Professor, School of Social Work, 2006, 2012.
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Steinkraus, Donald C., Ph.D. (Cornell University), M.S. (University of Connecticut), B.A. (Cornell University), Professor, Department of Entomology and Plant Pathology, 1989, 1999.
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Stephens, Dorothy Anne, Ph.D. (University of California-Berkeley), M.A. (University of Illinois-Chicago), B.A. (Northwestern University), Professor, Department of English, 1992, 2008.
Stephens, Mary Paige, M.S.W., B.A. (University of Missouri-Columbia), Lecturer, School of Social Work, 2013.

Stephenson, Barbara C., M.S. (West Virginia University), Instructor, Department of Mathematical Sciences, 2004.
Stephenson, Steven Lee, Ph.D., M.S. (Virginia Polytechnic Institute and State University), B.S. (Lynchburg College), Research Professor, Department of Biological Sciences, 2003.
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Stevens, Christopher W., Ph.D. (University of Maryland College Park), M.A. (City University of New York-The Graduate Center), B.A. (Humboldt State University), Instructor, Department of Philosophy, 2015.
Stewart, Patrick A., Ph.D., (Northern Illinois University), M.A., B.A. (University of Central Florida), Professor, Department of Political Science, 2008, 2021.
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Stoner, Wesley, Ph.D., M.A. (University of Kentucky), B.A. (Pennsylvania State University), Associate Professor, Department of Anthropology, 2014, 2020.
Stoverink, Adam, Ph.D. (Texas A\&M University), M.B.A. (St. Louis University), B.S.B.A. (University of Missouri), Associate Professor, Department of Management, 2017, 2021.
Streeter, Lora, Ph.D., M.S. (University of Arkansas, Fayetteville), Teaching Assistant Professor, Department of Computer Science and Computer Engineering, 2019.
Striegler, Susanne, Ph.D., M.S., B.S. (Ulm University, Germany), Professor, Department of Chemistry and Biochemistry, 2012, 2015.
Studebaker, Glenn, Ph.D., M.S. (University of Arkansas), B.S. (Missouri Southern State University), Associate Professor, Department of Entomology and Plant Pathology, 1993.
Su, Danjie, Ph.D. (University of California, Los Angeles), M.A., B.A. (Sun Yatsen University, China), Associate Professor, Department of World Languages, Literatures and Cultures, 2017, 2023.
Suarez, Celina A., Ph.D. (University of Kansas), M.S. (Temple University), B.S. (Trinity University), Associate Professor, Department of Geosciences, 2012, 2018.
Subbiah, Jeyamkondan, Ph.D. (Oklahoma State University), M.S. (University of Manitoba, Canada), B.E. (Tamil Nadu Agricultural University, India), Professor, Department of Food Science, 2019.
Sude, Yujie, Ph.D., M.A. (University of Arkansas), M.Ed. (Beijing Normal University), LL.B. (Peking University), Clinical Assistant Professor, Department of Economics, 2018.
Suggs, Hannah Gant, M.A., B.A. (University of Arkansas), Instructor, Department of Communication, 2018.
Sullivan, Amanda Lynn, Ph.D., M.A.T., B.S.E. (University of Arkansas), Clinical Associate Professor, Department of Health, Human Performance and Recreation, 2010, 2018.
Sullivan, Kelly M., Ph.D. (University of Florida), M.S.I.E., B.S.I.E.
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Sullivan, W. Curt, M.A. (University of Arkansas), B.A. (Harding
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Summers, Jeffrey P., D.M.A. (University of Miami), Instructor, Department of Music, 2020.
Sun, Xiaolun, Ph.D., M.S. (Virginia Polytech Institute and State University), B.S. (Southern China Agricultural University), Assistant Professor, Department of Poultry Science, 2016.

Sutton, James M., M.S. (Southern Methodist University), B.S. (University of West Florida), B.M. (University of Southern Mississippi), Instructor, Operations Management Program, 2017.
Svendgard, Madison, M.F.A. (University of Arkansas), B.F.A. (University of Nebraska), Instructor, School of Art, 2022.
Swanson, Shawn, Ph.D. (University of Colorado Boulder), M.A. (University of Colorado Boulder, University of Wisconsin-Milwaukee), B.S. (University of Wisconsin-Madison), Teaching Assistant Professor, Department of Economics, 2021.
Sykes, Tracy Ann, Ph.D. (University of Arkansas), B.S. (University of Maryland-College Park), Associate Professor, Department of Information Systems, 2011, 2016.
Syler, Rhonda A., Ph.D. (Auburn University), M.B.A. (Columbus State University), M.S. (Kansas State University), B.S. (Middle Tennessee State University), Teaching Assistant Professor, Department of Information Systems, 2016.
Sytsma, Janine A., Ph.D. (University of Wisconsin-Madison), M.A. (University of Denver), B.A. (Arizona State University), Assistant Professor, School of Art, 2016.
Szakasits, Monika, J.D. (Baylor University), B.A. (Sam Houston State University), Associate Librarian, University Libraries, 2004.
Szalanski, Allen Lawrence, Ph.D. (University of Nebraska-Lincoln), M.S. (Kansas State University), B.S. (University of Manitoba), Professor, Department of Entomology and Plant Pathology, 2001, 2011.
Szwydky-Davis, Lissette López, Ph.D., M.A. (Penn State University), B.A. (University of Miami), Associate Professor, Department of English, 2013.

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Terhune, Claire E., Ph.D., M.A. (Arizona State University), B.A., B.S. (College of Charleston), Associate Professor, Department of Anthropology, 2013, 2020.
Terrell, Amanda, Ph.D., M.S., B.S. (Oklahoma State University), Assistant Professor, School of Human Environmental Sciences, 2017.
Terrell, Katie, M.B.A. (University of Arkansas), B.A. (University of Central Arkansas), Instructor, William Dillard Department of Accounting, 2012.
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Thallapuranam, Suresh, Ph.D. (Osmania University), Professor, Department of Chemistry and Biochemistry, 2003, 2015.
Theiss, Hank, Ph.D. (Purdue University), M.S. (Purdue University), B.S. (Virginia Tech), Research Associate Professor, Department of Geosciences, 2020.
Thibado, Paul M., Ph.D. (University of Pennsylvania), B.S. (San Diego State University), Professor, Department of Physics, 1996, 2005.
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Thomas, Lauren, D.V.M. (Oklahoma State University), B.S. (University of Arkansas), Teaching Assistant Professor, Department of Animal Science, 2016.

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Thompson, Randy, J.D. (University of Illinois-Urbana-Champaign), M.L.S., B.A. (Indiana University), Associate Professor, School of Law, 2008.

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Thrash, Ben, , Assistant Professor, Department of Entomology and Plant Pathology, 2018.
Throop, Kathy, M.S.N. (Northeastern Oklahoma State University), B.S.N. (Baylor University), Instructor, Eleanor Mann School of Nursing, 2019.
Tian, Ryan, Ph.D. (University of Connecticut), B.S. (Fudan University, Shanghai), Associate Professor, Department of Chemistry and Biochemistry, 2004, 2010.
Timby, Donia, M.S., B.S. (University of Arkansas), Instructor, School of Human Environmental Sciences, 2017.
Tipsmark, Christian K., Ph.D., M.S. (University of Southern Denmark), Associate Professor, Department of Biological Sciences, 2010, 2016.
Tipton, John, Ph.D., M.S., B.S., (Colorado State University), Assistant Professor, Department of Mathematical Sciences, 2017.

Tjani, Maria, Ph.D. (Michigan State University), M.S. (Purdue University), B.S. (University of Ioannina, Greece), Professor, Department of Mathematical Sciences, 2003, 2020.
Torres, Maria, M.S.W., B.S.W. (University of Arkansas), Lecturer, School of Social Work, 2020.
Totten, Eric P., Ph.D. (University of Arkansas), M.A., B.A. (University of Central Florida), Instructor, Department of History, 2021.
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Traywick, LaVona S., Ph.D. (University of Kentucky), M.A. (University of Arkansas-Little Rock), B.S. (University of Central Arkansas), Associate Professor, School of Human Environmental Sciences, 2017.
Trivitt, Julie R., Ph.D., M.A. (University of Arkansas), M.A. (Southwest Missouri State University), Clinical Associate Professor, 2012, 2017.
Troiano, Eric, D.M.A., M.M. (Michigan State University), B.M. (Ithaca College), Teaching Assistant Professor, Department of Music, 2016, 2021.

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Trudo, Sabrina P., Ph.D. (University of Washington), B.S. (Brigham
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Tucci, Jake, M.S (University of North Carolina at Greensboro), B.S. (North Carolina State University), Assistant Professor, Department of Interior Architecture and Design, 2019.
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Tullis, Jason A., Ph.D., M.S. (University of South Carolina), B.S.
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Tumlison, Creed, Ph.D., M.A. (University of Arkansas), B.S. (Arkansas State University), Visiting Assistant Professor, Department of Political Science, 2020.
Tung, Steve, Ph.D., M.S.M.E. (University of Houston), B.S.M.E. (National Taiwan University), Professor, Department of Mechanical Engineering, 2000, 2013.
Turner, Aaron, M.F.A (Rutgers State University), B.A (University of Memphis), Research Associate, School of Art, 2016.
Turner, Alison, M.A. (Parsons School of Design), B.A. (Kentucky State University), Assistant Professor, Department of Architecture, 2008.
Turner, Henry L., Ph.D., M.S. (University of Arkansas), B.S. (University of Oregon), Instructor, Department of Geosciences, 2008.
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Tyler, Joel, M.B.A., B.A. (University of Arkansas), Instructor, J.B. Hunt Transport Department of Supply Chain Management, 2019.
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Van Horn-Morris, Jeremy, Ph.D. (University of Texas at Austin), B.S. (University of Oregon), Associate Professor, Department of Mathematical Sciences, 2012, 2018.
VanDevender, Karl, Ph.D. (University of Arkansas), M.S., B.S. (Mississippi State University), Professor, Department of Biological and Agricultural Engineering, 1995, 2004.
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Vargas, Ivan, Ph.D. (University of Michigan), B.S. (Notre Dame University), Assistant Professor, Department of Psychological Science, 2019.

Vazquez, Alan, Ph.D. (University of Antwerp, Belgium), M.S. (Monterrey Institute of Technology, Mexico), B.S. (Autonomous University of Nuevo Leon, Mexico), Assistant Professor, Department of Industrial Engineering, 2022.

Vega, Jose L., Ph.D. (University of Arkansas), M.S., Licenciatura (Universidad de Santiago de Compostela), Instructor, Ralph E. Martin Department of Chemical Engineering, 2020.
Veilleux, Jennifer Celene, Ph.D., M.A. (University of Illinois at Chicago), B.A. (Macalaster College), Associate Professor, Department of Psychological Science, 2011, 2017.
Vela, Luzita I., Ph.D., (Pennsylvania State University), M.S. (Barry University), B.S. (Texas Woman's University), Teaching Professor, Department of Health, Human Performance and Recreation, 2021.
Velliquette, Anne M., Ph.D. (University of Arkansas), M.A.B., B.S. (Southwest Missouri State University), Clinical Assistant Professor, Department of Marketing, 2014.
Veloso, Pedro, M.Sc. (University of Sao Paulo), B.Arch., B.U.D.
(University of Brasilia), Assistant Professor, Department of Architecture, 2021.

Vennarucci, Rhodora, Ph.D., M.A. (State University of New York at Buffalo), B.A. (University of Michigan), Assistant Professor, Department of World Languages, Literatures and Cultures, 2013, 2017.
Vera, Eric, Ph.D (University of Texas at Austin), M.A. (University of Northern Colorado), B.F.A. (University of Texas at Austin), , Department of Theatre, Gordon Morgan Fellow, 2022.
Verma, Lalit R., Ph.D. (University of Nebraska-Lincoln), M.S. (University of Montana), B. Tech. (J.N. Agricultural University, Jabalpub, India), Professor, Department of Biological and Agricultural Engineering, 2000.

Vierck, Kelly, Ph.D. (Texas Tech University), M.S. (Kansas State University), B.S. (Oklahoma State University), Assistant Professor, Department of Animal Science, 2020.
Villalonga, Patrick, Ph.D., M.S., B.A. (Florida International University), Visiting Assistant Professor, Department of Political Science, 2022.
Villanova, Daniel, Ph.D. (Virginia Tech University), B.S.B.A.
(Appalachian State University), Assistant Professor, Department of Marketing, 2018.
Villaseñor, Amelia, Ph.D. (George Washington University), B.A. (Arizona State University), Assistant Professor, Department of Anthropology, 2019.
Vining, Benjamin R., Ph.D., M.A. (Boston University), B.A. Colgate University, Associate Professor, Department of Anthropology, 2016, 2022.
Viswanathan, Padma, M.F.A. (University of Arizona), M.A. (Johns Hopkins University), B.A. (University of Alberta), Professor, Department of English, 2010, 2022.
Vyas, Reeta, Ph.D. (State University of New York at Buffalo), M.S., B.S. (Banaras Hindu University), Professor, Department of Physics, 1984, 2002.

W
Wade, Les, Ph.D. (University of California-Santa Barbara), M.F.A. (University of Georgia), M.A. (Duke University), B.A. (Tulane University), Professor, Department of Theatre, 2011.
Wai, Jonathan, Ph.D., M.S. (Vanderbilt University), M.A. (Claremont Graduate University), B.A. (Claremont McKenna College), Assistant Professor, Department of Education Reform, Endowed Chair in Educational Policy, 2018.
Walch, John S., M.F.A. (University of Texas at Austin), B.A. (Colorado College), Associate Professor, Department of Theatre, 2016, 2022.
Walker, Heather L., Ph.D., M.S.Ch.E., B.S.Ch.E. (University of Arkansas), Teaching Assistant Professor, Ralph E. Martin Department of Chemical Engineering, 2008, 2014.
Walker, James M., Ph.D. (University of Colorado-Boulder), M.S., B.S. (Louisiana Polytechnic Institute), Professor, Department of Biological Sciences, 1965.
Walker, Kasey, Ph.D., M.A. (Purdue University), B.S. (Trinity University), Teaching Assistant Professor, Department of Communication, 2006.
Walker, Kate Ireton, M.S. (University of Arkansas), B.S. (Kansas State University), Instructor, Department of Biological Sciences, 2014.
Waller, Matthew A., Ph.D., M.S. (Pennsylvania State University), B.S. (University of Missouri-Columbia), Professor, J.B. Hunt Transport Department of Supply Chain Management, Sam M. Walton Leadership Chair, 2002, 2007.
Walsh, Lora, Ph.D. (Northwestern University), M.Sc. (University of Edinburgh), B.A. (Pepperdine University), Assistant Professor, Department of English, 2014.
Walter, Keith D., Ph.D., M.S., B.S. (Clemson University), Professor, Department of Mechanical Engineering, Twenty-First Century Professorship, 2021.
Walters, D. Keith, Ph.D., M.S.M.E., B.S.M.E. (Clemson University), Professor, Department of Mechanical Engineering, 2021.
Walters, Keisha, Ph.D., M.S., B.S. (Clemson University), Professor, Ralph E. Martin Department of Chemical Engineering, Kevin W. and Marie L. Brown Department Head Chair in Chemical Engineering, Ralph E. Martin Leadership Chair in Chemical Engineering, 2021.
Wamishe, Yeshi Andenow, Ph.D. (University of Arkansas) M.S., B.S. (Addis Ababa University, Ethiopia), Associate Professor, Department of Entomology and Plant Pathology, 2011, 2016.
Wang, Dongyi, Ph.D. (University of Maryland), B.S. (Fundan University, Shanghai, China), Assistant Professor, Department of Biological and Agricultural Engineering, 2021.

Wang, Feng, Ph.D. (University of Pittsburgh), Ph.D. (Kutztown University of Pennsylvania), B.S. (Peking University), Associate Professor, Department of Chemistry and Biochemistry, Charles E. and Clydene Scharlau Endowed Professor, 2012.
Wang, Ya-Jane, Ph.D. (lowa State University), M.S. (University of Minnesota-Twin Cities), B.S. (National Taiwan University), Professor, Department of Food Science, 1999, 2009.
Wang, Yong, Ph.D., M.S. (University of California, Los Angeles), B.S. (University of Science and Technology of China), Assistant Professor, Department of Physics, 2016.
Wang, Yu, Ph.D. (Rutgers University, Boston College), M.S., B.S. (Wuhan University), Assistant Professor, Department of Finance, 2020.
Ward, Arley R., Ph.D. (University of Arkansas), M.A. (University of Tulsa), B.A. (University of North Carolina at Greensboro), Instructor, Department of History, 2021.
Ward, Barry M., Ph.D. (Rutgers State University-New Brunswick), M.Sc., B.A.Mod. (Trinity College, Dublin), Professor, Department of Philosophy, 2002, 2022.
Ward, Cortez, M.S. (Troy University), B.S. (University of Maryland), Instructor, Operations Management Program, 2006.
Ward, Heidi, Ph.D. (University of Oklahoma), D.V.M. (Oklahoma State University), B.S. (University of Oklahoma), Assistant Professor, Department of Animal Science, 2015.
Ward, Peggy, Ph.D. (University of Arkansas), M.S. (Texas A\&M University), B.S.Ed. (Southern Arkansas University), Clinical Assistant Professor, Department of Curriculum and Instruction, 2010, 2016.
Ward, Ryane, J.D. (University of Arkansas), B.A. (University of Kansas), Instructor, William Dillard Department of Accounting, 2022.
Wardlow, George W., Ph.D. (The Ohio State University), M.Ed., B.S. (University of Missouri-Columbia), Professor, Department of Agricultural Education, Communications and Technology, 1992, 1998.
Ware, Morgan, Ph.D. (North Carolina State University), B.S. (Florida State University), Assistant Professor, Department of Electrical Engineering, 2005.
Warn, Seth A., Ph.D. (University of Arkansas), B.S. (Columbia College), Research Assistant Professor, Department of Geosciences, 2019.
Warren, Ron, Ph.D. (Indiana University), M.A. (Colorado State
University), B.A. (Michigan State University), Associate Professor, Department of Communication, 1997, 2003.
Warren, W. Dale, M.M. (University of Kentucky), B.S. (Austin Peay State University), Professor, Department of Music, 1991.
Washington, Tyrone A., Ph.D., B.S. (University of South Carolina at Columbia), Associate Professor, Department of Health, Human Performance and Recreation, 2011, 2018.
Watanabe, Susumu, D.M.A. (University of Nebraska-Lincoln), M.F.A.
(City University of New York), B.M. (Berklee College of Music), Lecturer, Department of Music, 2021.
Watkins, Kenton Bradley, Ph.D. (Oklahoma State University), M.S., B.A. (University of Arkansas), Professor, Department of Agricultural Economics and Agribusiness, 2002, 2014.
Way, Kelly Ann, Ph.D., M.S., B.S. (Oklahoma State University), Associate Professor, School of Human Environmental Sciences, 2006, 2012.

Weatherby, Danielle, J.D. (University of Florida), B.A. (Franklin and Marshall College), Associate Professor, School of Law, 2013, 2016.
Webb, Jennifer D., Ph.D. (Oklahoma State University), M.S., B.S.
(University of Tennessee), Associate Professor, Department of Interior Architecture and Design, 1999, 2005.
Wejinya, Uchechukwu C., Ph.D., M.S., B.S. (Michigan State University), Associate Professor, Department of Mechanical Engineering, Twenty-First Century Professor, 2008, 2014.

Welcher, Richard, M.S.C.E., B.S.C.E. (University of Arkansas), Instructor, Department of Civil Engineering, 2011.
Wells, Michael, M.S. (Florida State University), B.S. (East Stroudsburg University), Instructor, Operations Management Program, 2011.
Weng, Qin, Ph.D. (University of Pittsburg), M.S. (Virginia Commonwealth University), B.A. (Beijing Foreign Studies University), Assistant Professor, Department of Information Systems, 2018.
Westerman, Erica L., Ph.D. (Yale University), M.Sc. (University of New Hampshire), B.S. (Yale University), Assistant Professor, Department of Biological Sciences, 2016.
Whayne, Jeannie, Ph.D., M.A., B.A. (University of California-San Diego), University Professor, Department of History, 1990, 2015.
White, Calvin, Ph.D. (University of Mississippi), M.A., B.A. (University of Central Arkansas), Associate Professor, Department of History, 2007, 2013.

White, Jessica, , Visiting Assistant Professor, Department of Economics, 2021.

Whitehead, Isabel M., M.S. (University of Arkansas), B.S. (Sul Ross
State University), Instructor, Department of Agricultural Education, Communications and Technology, 2018.
Whitmire, Daniel, Ph.D. (University of Texas), M.S. (University of Texas at El Paso), B.S. (Midwestern State University), Instructor, Department of Mathematical Sciences, 2013.
Wickramasinghe, Ranil, Ph.D. (University of Minnesota-Twin Cities), M.S., B.S. (University of Melbourne, Australia), Distinguished Professor, Ralph E. Martin Department of Chemical Engineering, Ross E. Martin Chair in Emerging Technologies, 2011, 2021.
Wicks, Jan L., Ph.D., M.A. (Michigan State University), B.A. (University of Southwestern Louisiana), Professor, School of Journalism and Strategic Media, 1994, 2006.
Wicks, Robert Howard, Ph.D. (Michigan State University), M.A. (University of Missouri-Columbia), B.A. (American University), Professor, Department of Communication, 1994, 2006.
Wideman, Robert F., Ph.D. (University of Connecticut), B.A. (University of Delaware), Professor, Department of Poultry Science, 1993.
Wiebe, Zac, Ph.D., M.Acc. (University of Kansas), B.S. (University of Saskatchewan), Assistant Professor, William Dillard Department of Accounting, 2018.
Wilke, Stephen, J.D., M.P.A. (University of Memphis), Instructor, Operations Management Program, 1996.
Wilkerson, Weston, M.F.A. (University of Tennessee), B.A. (Texas A\&M University), Associate Professor, Department of Theatre, 2014.
Wilkins, Charles L., Ph.D. (University of Oregon), B.S. (Chapman
College), Distinguished Professor, Department of Chemistry and Biochemistry, 1998.
Williams, Angela, Ed.D. (University of Arkansas), M.Ed. (University of Arkansas), B.A. (University of Arkansas), Teaching Assistant Professor, Fulbright College of Arts and Sciences, 2021.
Williams, Brent Thomas, Ph.D. (University of Illinois, Urbana-
Champaign), M.S. (University of Texas Southwestern Medical School), B.A. (Austin College), Associate Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2002, 2008.
Williams, Brent D., Ph.D., M.S. (University of Arkansas), B.A. (Lyon College), Associate Professor, J.B. Hunt Transport Department of Supply Chain Management, Garrison Chair in Supply Chain Management, 2011. Williams, Charlotte Lewellen, Ph.D., M.S. (University of Arkansas for Medical Sciences), B.S. (Howard University), Professor, Clinton School of Public Service, 2007.
Williams, Colleen C., J.D. (Washington University in St. Louis), B.A. (Western Washington University), Associate Librarian, University Libraries, 2006, 2009.

Williams, Darron, Ph.D. (Northcentral University), M.S., M.B.A., B.S. (University of Memphis), Instructor, Operations Management Program, 2015.

Williams, Donnie F., Ph.D. (Georgia Southern University), Clinical Associate Professor, J.B. Hunt Transport Department of Supply Chain Management, 2019.
Williams, Patrick George, Ph.D., M.A. (Columbia University), B.A. (University of Texas at Austin), Professor, Department of History, 1998, 2015.

Williams, Rodney D., Ph.D., M.S., B.S.C.E. (University of Arkansas), Instructor, Department of Civil Engineering, 1998.
Williams, Stacy Goad, Ph.D., M.S.C.E., B.S.C.E. (University of Arkansas), Associate Professor, Department of Civil Engineering, 1997. Willson, John David, Ph.D. (University of Georgia), B.S. (Davidson College), Associate Professor, Department of Biological Sciences, 2012, 2018.

Wilmot, Michael, Ph.D. (University of Minnesota), M.S., B.A. (University of Nebraska), Assistant Professor, Department of Management, 2020. Wilson, Nichole, M.F.A. (Northwestern University), B.F.A. (Temple University), Assistant Professor, School of Art, 2020.
Wilson-Parrish, Nichelle La Von, M.F.A. (University of North Texas), B.F.A. (University of Arkansas), M.A. (University of North Texas), Instructor, School of Art, 2013.
Wissehr, Cathy, Ed.D. (University of Missouri-Columbia), M.N.S.Ed., B.S. (Southeast Missouri State University), Clinical Associate Professor, Department of Curriculum and Instruction, 2009, 2016.
Woehr, Summer Dawn, M.A. (University of Arkansas), B.S. (Campbell University), Lecturer, Department of Political Science, 2020.
Wolchok, Jeffrey Collins, Ph.D. (University of Utah), M.S., B.S.
(University of California at Davis), Associate Professor, Department of Biomedical Engineering, 2011, 2017.
Wolf, Martha, M.S.I.E. (University of Arkansas), B.S. (University of Arkansas), Instructor, Operations Management Program, 2022.
Wolf, Patrick J., Ph.D., M.A. (Harvard University), B.A. (University of Saint Thomas), Distinguished Professor, Department of Education Reform, Endowed Chair in School Choice, 2006.
Wolfe, Marc E., M.S.A. (Central Michigan University), B.S. (Harding University), Professor, Air Force ROTC, Lieutenant Colonel, 2016.
Wood, Clinton M., Ph.D. (University of Texas at Austin), M.S.C.E., B.S.C.E. (University of Arkansas), Associate Professor, Department of Civil Engineering, 2013, 2019.
Wood, Lisa S., Ph.D., M.S., B.S. (University of Arkansas), Clinical Associate Professor, Department of Crop, Soil and Environmental Sciences, 2012, 2019.
Woodland, Janet C., Ph.D., M.A. (State University of New York at Stony Brook), B.A. (King's College), Teaching Assistant Professor, Department of Mathematical Sciences, 1993.
Woodruff, Emily, M.S.W., B.S. (University of Illinois at UrbanaChampaign), Clinical Assistant Professor, School of Social Work, 2022.
Woods, Jordan Blair, Ph.D., M.Phil (University of Cambridge), J.D.
(University of California, Los Angeles), Assistant Professor, School of Law, 2016.
Woods, Randall B., Ph.D., M.A., B.A. (University of Texas at Austin), Distinguished Professor, Department of History, John A. Cooper Sr. Distinguished Professor of Diplomacy, 1971, 1995.
Worden, Steven K., Ph.D. (University of Texas at Austin), M.A., B.A. (Portland State University), Associate Professor, Department of Sociology and Criminology, 1986.
Worrell, Dan, Ph.D., M.S., B.S. (Louisiana State University), Professor, Department of Strategic, Entrepreneurship and Venture Innovation, Corporate Responsibility Professorship in Management, 2005.

Worthington, Margaret L., Ph.D. (North Carolina State University), M.S. (University of California-Davis), B.S. (Duke University), Assistant Professor, Department of Horticulture, 2016.
Wright, Nia, M.B.A. (Tulane University), B.S. (University of Arkansas), Instructor, Operations Management Program, 2009.
Wu, Jingxian, Ph.D. (University of Missouri-Columbia), M.S. (Tsinghua University), B.S. (Beijing University of Aeronautics and Astronautics), Associate Professor, Department of Electrical Engineering, 2008, 2013. Wu, Xintao, Ph.D. (George Mason University), M.E. (Chinese Academy of Space Technology), B.S. (University of Science and Technology of China), Professor, Department of Computer Science and Computer Engineering, Charles D. Morgan/Acxiom Graduate Research Chair, 2014, 2019.

X
Xiao, Min, Ph.D. (University of Texas at Austin), B.S. (Nanjing University), Distinguished Professor, Department of Physics, 1990, 2004.
Xinya, Liang, Ph.D. (Florida State University), B.S. (Zhejiang Gongshang University, China), Assistant Professor, 2014.
Xu, Jenny, M.A. (University of Texas at Austin), Clinical Associate Professor, Department of World Languages, Literatures and Cultures, 1992, 2009.

Y
Yandell, Kay, Ph.D., M.A. (Cornell University), B.A. (University of Arkansas), Associate Professor, Department of English, 2013, 2018.
Yang, Li, M.A. (Brandeis University and Beijing Language and Culture University), B.A. (Beijing Language and Culture University), Instructor, Department of World Languages, Literatures and Cultures, 2014.
Yang, Song, Ph.D., M.S. (University of Minnesota-Twin Cities), M.A. (Nankai University, China), B.A. (Branch College of Nankai, China), Professor, Department of Sociology and Criminology, 2002, 2016.
Yazwinski, Tom, Ph.D. (North Carolina State University), M.S. (University of Maine), B.S. (University of Vermont), University Professor, Department of Animal Science, 1977, 2004.
Yeager, Timothy J., Ph.D., M.A. (Washington University in St. Louis), Professor, Department of Finance, Arkansas Bankers Association Chair in Banking, 2006, 2016.
Yoon-Ramirez, Injeong, Ph.D. (University of Arizona), Assistant
Professor, School of Art, Endowed Chair in Art Education, 2017.
Young, Amber, Ph.D. (University of Oklahoma), M.B.A. (Oklahoma Christian University), B.S.Ed. (University of Oklahoma), Associate Professor, Department of Information Systems, 2018, 2023.
Young, Chase, M.F.A. (University of Arkansas), B.F.A. (Arizona State University, Tempe), Instructor, School of Art, 2022.
Young, Elizabeth Lee, J.D. (George Washington University), B.A. (Hendrix College), Associate Professor, School of Law, 2008, 2011.
Young, Heather D., Ph.D. (University of Arkansas), M.S. (University of Tennessee), B.S. (Arkansas Tech University), Associate Professor, Department of Curriculum and Instruction, 2007, 2019.
Young, Rana N., M.F.A. (University of Nebraska), Visiting Assistant Professor, School of Art, 2019.
Young, Wes, M.P.A. (University of Arkansas), B.S. (University of Phoenix), A.S. (Ashworth University), Lecturer, Department of Political Science, 2022.
Youngblood, Joshua Cobbs, M.A. (Florida State University), B.A. (University of Louisiana at Monroe), Assistant Librarian, University Libraries, 2011.
Yu, Fisher, Ph.D. (Arizona State University), M.S., B.S. (Peking University), Associate Professor, Department of Electrical Engineering, 2008, 2014.

\section*{Z}

Zabelina, Darya, Ph.D. (Northwestern University), Assistant Professor, Department of Psychological Science, 2017.
Zajicek, Anna, Ph.D. (Virginia Polytechnic Institute and State University), M.S., B.S. (University of Silesia, Poland), Professor, Department of Sociology and Criminology, 1994, 2006.
Zamarro Rodriguez, Gema, Ph.D., M.S. (Centro de Estudios Monetarios y Financieros, Spain), B.A. (Universidad Carlos III de Madrid, Spain), Professor, Department of Education Reform, Endowed Chair in Teacher Quality, 2014, 2019.
Zamboanga, Byron L., Ph.D., M.A. (University of Nebraska), B.A. (University of California, Berkeley), Professor, Department of Psychological Science, 2020.
Zayas, Fernanda, M.S.N. (Lenoir-Rhyne University), Clinical Instructor, Eleanor Mann School of Nursing, 2018.
Zeng, Ka, Ph.D. (University of Virginia), M.A. (Virginia Polytech Institute and State University), B.A. (Foreign Affairs College, Beijing), Distinguished Professor, Department of Political Science, 2000, 2022. Zhang, Jihong, Ph.D. (University of lowa), M.S. (University of Kansas), B.A. (Soochow University), Assistant Professor, Department of Rehabilitation, Human Resource and Communication Disorders, 2023. Zhang, Lu, Ph.D. (Nanyang Technological University, Singapore), Assistant Professor, Department of Computer Science and Computer Engineering, 2018.
Zhang, Meredith, Ph.D., M.A. (The Ohio State University), B.A. (Susquehanna University), Assistant Professor, Department of Sociology and Criminology, 2022.
Zhang, Qingyang, Ph.D. (Northwestern University), M.S. (Loyola University-Chicago), B.S. (Beijing Normal University), Associate Professor, Department of Mathematical Sciences, 2015, 2021.
Zhang, Shengfan, Ph.D., M.I.E. (North Carolina State University), B.M. (Fudan University, Shanghai), Associate Professor, Department of Industrial Engineering, John L. Imhoff Chair in Industrial Engineering, 2011, 2020.
Zhang, Wen, Ph.D. (Purdue University), M.S. (University of Kansas), B.S. (Tongji University, China), Associate Professor, Department of Civil Engineering, 2011, 2018.
Zhang, Xinde, Ph.D. (University of North Carolina-Charlotte), M.S. (Youngstown State University), B.S. (Jilin University, China), Visiting Assistant Professor, Department of Finance, 2020.
Zhang, Ying, Ph.D. (University of Hong Kong), M.S. (Peking University), B.S. (Jilin University), Assistant Professor, Department of Management, 2021.

Zhao, Jiangchao, Ph.D. (University of Wisconsin-Madison), M.S., B.S. (China Agricultural University), Associate Professor, Department of Animal Science, 2015, 2019.
Zhao, Yue, Ph.D. (University of Nebraska-Lincoln), B.S. (Beijing University), Assistant Professor, Department of Electrical Engineering, 2015.

Zheng, Nan, Ph.D. (University of Michigan-Ann Arbor), M.S. (University of Rochester), B.S. (University of Science and Technology of China), Professor, Department of Chemistry and Biochemistry, 2008, 2021.
Zhou, Wenchao, Ph.D. (Georgia Institute of Technology), M.S.M.E. (Xi'an Jiaotong University, Xi'an, China), B.S.M.E. (Huazhong University of Science and Technology, Wuhan, China), Associate Professor, Department of Mechanical Engineering, 2014, 2020.
Zhu, Jun, Ph.D. (University of Illinois at Urbana-Champaign), M.S., B.S. (Zhejiang University, Hangzhou, China), Professor, Department of Biological and Agricultural Engineering, 2013.
Zhuang, Xuan, Ph.D. (University of Illinois Urbana-Champaign), Assistant Professor, Department of Biological Sciences, 2021.

Zies, Brenda June, Ph.D., M.A. (University of Arkansas), B.S. (East Texas State University), Teaching Assistant Professor, Department of Psychological Science, 2005.
Zollinger, Richard, M.B.A., B.S. (Brigham Young University), Instructor, Operations Management Program, 2016.
Zou, Min, Ph.D., M.S.M.E. (Georgia Institute of Technology), M.S.A.E., B.S.A.E. (Northwestern Polytechnical University), Professor, Department of Mechanical Engineering, Twenty-First Century Chair in Materials, Manufacturing and Integrated Systems, 2003, 2013.
Zou, Tim Jiping, Ph.D., M.S. (University of Illinois-Urbana-Champaign), B.A. (Shandong University), Librarian, University Libraries, 2004, 2010.

Zweig, Mark, M.B.A., B.S. (Southern Illinois University at Carbondale), Executive in Residence, Department of Strategic, Entrepreneurship and Venture Innovation, 2005.

\section*{Courses of Instruction}

Courses listed in this section describe all courses approved for offering by the University of Arkansas. The courses are listed alphabetically by subject with the subject code in parenthesis following. The word "course" refers to a unit of academic instruction, while the word "class" refers to a course that has been scheduled during a semester or summer session with a certain number of prescribed meetings each week. Many courses are offered as classes every semester while many others are offered less frequently. Successful completion of a class usually earns a specified number of semester hours of credit toward a degree.

To see a Schedule of Classes, which lists classes available in a specific semester, along with the instructor of record, time and place the class is being held, go to UAConnect (https://uaconnect.uark.edu/).

\section*{How to Read a Course Description}

Courses listed in this section describe all courses approved for offering by the University of Arkansas. The word "course" refers to a unit of academic instruction, while the word "class" refers to a course scheduled during a semester or summer session with a certain number of prescribed meetings each week. Successful completion of a class usually earns a specified number of semester hours of credit toward a degree.

The Schedule of Classes lists classes available in a specific semester, along with the instructor of record, time and place the class is being held.

\section*{Course Description Explanations}

A course listing comprises the following elements, in order:
Course Prefix: This alpha descriptor is the first identifying part of a course. This four-letter code represents the course prefix name. Usually the course prefix will be the same as the department offering the course, but occasionally the prefix is one of many different courses offered in a single department. For example, ARAB refers to Arabic courses, which are offered through the Department of World Languages, Literatures and Cultures; HIST refers to History courses.

Course Number: Each course is designated by a four-digit number. The first digit identifies the level of the course: 1, freshman level; 2 , sophomore level; 3 and 4, junior-senior level; 5, 6, and 7, graduate level. Any exceptions to this practice are stated in the course descriptions.

Students desiring admission to courses offered at levels beyond their standing should request the instructor's permission to enroll. (For definitions of academic level see Student Classification (p. 51).)

The second and third digits of the number identify the course within the department that offers it.

The fourth digit identifies the semester-hour value of the course. Credit for certain courses does not count toward some degrees.

Normally, courses meet once each week for 50 minutes for each hour of course credit. Laboratory, drill and other kinds of activity courses typically meet for two 50-minute periods per week for each hour of credit.

The letter ' \(V\) ' is used in place of the last digit for those courses in which credit is variable. The minimum and maximum credit hours possible are given in parentheses after the course title.

The letter ' \(X\) ' is used in place of the last digit for those courses in which fixed credit is ten or more hours.

The first three digits of the number are the same for corequisite courses (for example, a lecture and the corequisite lab or drill).

Course Suffix: A suffix to the course number further identifies the specific type of instruction:
- C - Drill or Lab Component
- L - Laboratory
- H - Honors Course
- M - Honors Laboratory

A course with no suffix is a typical lecture course (not an honors course).
Course Title: The title of the course is printed in bold letters.
Course Semester Offering: Course descriptions include a notation of the semester in which the course is typically offered. Consult the Schedule of Classes to verify that a course is being offered for a given term.

Course Description: A brief description of the course content and its major emphasis are stated. If the course is cross-listed (also offered under another subject) a statement to that effect will be included in the description. Likewise, if the course is equivalent to another course (such as an honors and non-honors offering) a statement to that effect will also be included. If the course is eligible to be repeated for degree credit more than once, a statement will appear to indicate the total hours or times a course may be repeated. If no repeat statement is listed, the course may be used for degree credit only once.

Requisites: Requisites are requirements that must be fulfilled either before a course may be taken or at the same time a course is taken. It is the student's responsibility to make sure the proper prerequisites have been completed before enrolling in any class. Prerequisites are courses or requirements that must be completed prior to enrolling in a certain course. Courses may have prerequisites from inside and outside the department. It is the student's responsibility to make sure he/she has completed the proper prerequisites before enrolling in any class. Courses listed as corequisite are to be taken in the same semester as the course desired.

A course listed as a pre- or corequisite to another course means that it must be taken during the same semester as that course, unless it has been completed in a previous term.

Students may not enroll in courses for which they do not have the necessary requisites. Students who are in doubt concerning their eligibility to enroll in specific courses should consult with their academic adviser.

Students may be dropped from courses for which they do not have the necessary requisites.

\section*{Courses of Instruction By Subject}

Accounting (ACCT) (p. 927)
Adult and Lifelong Learning (ADLL) (p. 929)
Advertising/Public Relations (ADPR) (p. 931)
African and African American Studies (AAST) (p. 932)
Agricultural Communications (ACOM) (p. 935)
Agricultural Economics (AGEC) (p. 936)
Agricultural Education (AGED) (p. 940)
Agricultural Education, Communications and Technology (AECT)
(p. 942)

Agricultural Leadership (AGLE) (p. 942)
Agricultural Statistics (AGST) (p. 943)
Agricultural Systems Technology Management (ASTM) (p. 943)
Agriculture, Food and Life Sciences (AFLS) (p. 944)
Air Force ROTC (AERO) (p. 945)
Animal Science (ANSC) (p. 945)
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\section*{Accounting (ACCT)}

\section*{Courses}

\section*{ACCT 2013. Accounting Principles. 3 Hours.}

Introduction of accounting as an information system with emphasis on processing and presenting information in the form of financial statements for use in decision making. The course emphasizes business processes and double entry accounting. Prerequisite: (Non-business majors: (ISYS 1123 with a grade of \(C\) or better) or DASC 1003 or ASTM 2903) and MATH 2043 or higher with a grade of \(C\) or better), or (Business majors: (ISYS 1123 with a grade of C or better)), BUSI 1111 with a grade of C or better, and (MATH 2053 or MATH 2554 each with a grade of C or better)). (Typically offered: Fall, Spring and Summer)

\section*{ACCT 2013H. Honors Accounting Principles. 3 Hours.}

Introduction of accounting as an information system with emphasis on processing and presenting information in the form of financial statements for use in decision making. The course emphasizes business processes and double entry accounting. This course is equivalent to ACCT 2013. Prerequisite: (Non-business majors: Honors Standing, (ISYS 1123 with a grade of C or better)), and MATH 2043 or higher with a grade of C or better) or (Business majors: Honors standing, (ISYS 1123 with a grade of C or better)), BUSI 1111 with a grade of \(C\) or better, and (MATH 2053 or MATH 2554 with a grade of C or better)). (Typically offered: Spring) This course is equivalent to ACCT 2013.

\section*{ACCT 2023. Accounting Principles II. 3 Hours.}

In this course we study managerial accounting concepts and their use in business decisions. We will examine the development and analysis of cost information for management use in decision-making, income determination, and performance evaluation. Prerequisite: ACCT 2013 with a grade of \(C\) or better. (Typically offered: Fall, Spring and Summer)

\section*{ACCT 2023H. Honors Accounting Principles II. 3 Hours.}

In this course we study managerial accounting concepts and their use in business decisions. We will examine the development and analysis of cost information for management use in decision-making, income determination, and performance evaluation. Prerequisite: ACCT 2013 with a grade of \(C\) or better and honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to ACCT 2023.
ACCT 2403. Accounting Fundamentals for Planning and Control. 3 Hours. Use of accounting information for planning and control, including interpretation of financial statements and fundamentals of managerial accounting. Topics include financial statement structures and analysis, profitability and cash flow analysis, cost behaviors, production cost analysis, budgeting, standard costs and performance reporting, sources and uses of corporate capital, and other related topics. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Fall and Spring)

\section*{ACCT 310V. Accounting Internship. 1-3 Hour.}

This class is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the accounting profession.
Prerequisite: Department consent and ACCT 3723 with a grade of \(C\) or better.
(Typically offered: Spring) May be repeated for up to 3 hours of degree credit.

\section*{ACCT 310VH. Honors Accounting Internship. 1-3 Hour.}

This class is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the accounting profession. Prerequisite: Honors standing, Department consent and ACCT 3723 with a grade of C or better. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.
This course is equivalent to ACCT 310 V .
ACCT 3533. Accounting Technology. 3 Hours.
This course provides an overview of accounting information systems and illustrates the importance of technology to accountants. Students are exposed to a variety of information technologies including manual, file-oriented, and database systems. The relative advantages and disadvantages of each type of system are highlighted and discussed. Prerequisite: ACCT 2013 with a grade of B or better. (Typically offered: Fall and Spring)

\section*{ACCT 3543. Accounting Analytics. 3 Hours.}

This course provides students with an overview of the data analytics process in accounting: asking appropriate accounting questions, finding and mastering appropriate accounting data to address those questions, performing test analysis and communicating the results of the data through data visualizations. Extensive hands-on, experiential learning using short Excel and Tableau labs is a key part of the course. Basic knowledge of excel is recommended. Prerequisite: (Non-business majors: (ACCT 2013 with a grade of \(B\) or better) and (INEG 2314 or STAT 3013 with a grade of \(C\) or better)) or (Business majors: (ACCT 2013 with a grade of \(B\) or better) and (BUSI 1033 with a grade of C or better)). (Typically offered: Fall and Spring)

\section*{ACCT 3723. Intermediate Accounting I. 3 Hours.}

This course is designed to study the theoretical basis for financial accounting concepts and principles related to financial reporting. This course emphasizes researching technical accounting pronouncements for application to external financial reporting issues. Prerequisite: ACCT 2013 with a grade of B or better. (Typically offered: Fall and Spring)

\section*{ACCT 3753. Intermediate Accounting II. 3 Hours.}

This is the second financial accounting course designed to continue study of financial accounting concepts and principles. This course emphasizes research of technical accounting pronouncements for application to external financial reporting issues. Prerequisite: ACCT 3723 with a grade of \(C\) or better. (Typically offered: Fall and Spring)

\section*{ACCT 3843. Fundamentals of Taxation I. 3 Hours.}

Introduction to federal income taxation with a focus on individuals, including basic tax concepts, income tax principles applicable to individual taxpayers, primary tax law authorities, tax research techniques, and tax planning strategies. Prerequisite: ACCT 2013 with a grade of B or better. (Typically offered: Fall and Spring)

ACCT 4003H. Honors Accounting Colloquium. 3 Hours.
Explores events, concepts and/or new developments in the field of accounting. Prerequisite: Honors standing, Senior standing and ACCT 3723 with a grade of \(C\) or better. (Typically offered: Fall)

ACCT 410V. Special Topics in Accounting. 1-3 Hour.
Explore current events, concepts and new developments relevant to Accounting not available in other courses. Prerequisite: Department consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ACCT 4123H. Professional Ethics and Corporate Governance. 3 Hours.}

An examination of various aspects of accounting and business ethics including ethical theories; ethical reasoning; ethical values - including integrity, objectivity, auditor independence, and other values relevant for accountants; and ethics codes. The course provides students with a framework of ethical reasoning, professional values and attitudes for exercising professional skepticism and other behavior that is in the best interest of the public and accounting profession. Aspects of corporate governance related to establishing an ethical corporate culture will also be addressed. Prerequisite: Senior standing, Honors standing, and ACCT 3723 with a grade of C or better. (Typically offered: Spring)

\section*{ACCT 4203. Fundamentals of Taxation II. 3 Hours.}

Study of federal income taxation with a focus on entities other than individuals (C corporations, S corporations, partnerships, estates, and trusts) as well as an introduction to federal transfer taxes, state and local taxes, and multinational tax issues, including applicable tax principles and continued development of tax research techniques, and tax planning strategies. Prerequisite: ACCT 3723 and ACCT 3843 each with a grade of \(C\) or better. (Typically offered: Fall and Spring)

\section*{ACCT 4673. Product, Project and Service Costing. 3 Hours.}

Cost systems with emphasis on information generation for cost management of products, projects and services. The course includes spreadsheet and other computer program analysis. Prerequisite: ACCT 2023 and ACCT 3723 each with grades of \(C\) or better. (Typically offered: Fall)

\section*{ACCT 4703. Governmental/Nonprofit Accounting. 3 Hours.}

Governmental and non-profit accounting, financial statement and internal controls compliance, and auditing for government and other non-profit organizations. Industry specific issues in accounting for health care organizations and colleges and universities; and federal governmental accounting. Prerequisite: ACCT 2013 and ACCT 2023 each with a grade of \(C\) or better. (Typically offered: Irregular)
ACCT 4963. Audit and Assurance Services. 3 Hours.
Professional standards and procedures as applied to external and internal assurance engagements. Including coverage of the economic role of assurance providers, engagement planning, risk assessment, evidence gathering, and reporting. Prerequisite: ACCT 3723 with a grade of C or better. (Typically offered: Fall and Spring)

ACCT 510V. Special Topics in Accounting. 1-3 Hour.
Explore current events, concepts and new developments relevant to Accounting not available in other courses. Graduate degree credit will not be given for both ACCT 410V and ACCT 510V. Prerequisite: ACCT 3723 with a grade of \(C\) or better. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ACCT 5123. Corporate Governance and Professionalism. 3 Hours.}

Aspects of corporate governance related to establishing an ethical corporate culture are addressed. The course examines various aspects of accounting and business ethics including frameworks for ethical reasoning; professional values - including integrity, objectivity, accounting independence, and professional skepticism; and other core values relevant for accountants. Accounting professional ethics codes and rules are also addressed. Corporate governance structures are examined. Prerequisite: Graduate standing in the Masters of Accountancy or Professional Accounting program. (Typically offered: Irregular)

\section*{ACCT 5223. MBA Accounting Analysis. 3 Hours.}

Highlights the role played by accounting information in managing supply chains and retail operations. Provides tools for managing cost flows, including activity-based costing, retail accounting, and operational budgeting. Focuses on improving decision making processes, and linking the impact of retail/supply chain decisions to financial statements and shareholder value. (Typically offered: Fall and Spring)

ACCT 5263. Financial Statement Analysis for Executives. 3 Hours.
This course provides a framework for understanding the intersection between business strategy, accounting, economics, and finance. Using historical financial statements as the primary information input, you will employ tools that enable you to better understand the drivers of current performance and risk, forecast future performance, and construct a value estimate. These tools can be applied in a number of contexts including equity valuation, project selection, and managerial evaluation. Not eligible for MAcc program students. Prerequisite: MBA Director consent. (Typically offered: Summer)

\section*{ACCT 535V. Professional Accounting Internship. 1-3 Hour.}

This course allows a student to experience an internship within a business and benefit from the applied experience. The internship may be designed to offer a wide range of professional accounting experiences in Industry or Public Accounting. The internship must be supervised by a faculty member as well as a member of the firm. MACC Director approval required. Prerequisite: MAcc Director consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ACCT 5413. Advanced Financial Accounting. 3 Hours.}

Integrated course which examines the financial reporting, tax, managerial, systems and auditing aspects of major corporate restructurings arising from events such as mergers, acquisitions, spinoffs, reorganizations and downsizing. Prerequisite: ACCT 3753 or equivalent with a grade of \(C\) or better or MAcc Director consent. (Typically offered: Spring)

\section*{ACCT 5433. Fraud Prevention and Detection. 3 Hours.}

An examination of various aspects of fraud prevention and detection, including the sociology of fraud, elements of fraud, types of fraud involving accounting information, costs of fraud, use of controls to prevent fraud, and methods of fraud detection. (Typically offered: Irregular)

\section*{ACCT 5443. Asset Management. 3 Hours.}

Managing assets to achieve corporate strategy. Included are issues such as strategy formulation, acquisition processes, internal controls, system requirements, accounting measurements, inventory models, re-engineering, capital budgeting, tax issues, and discussion of current business events that have ethical implications. (Typically offered: Irregular)

\section*{ACCT 5463. Financial Statement Analysis. 3 Hours.}

This course provides a framework for understanding the current economic position and future prospects of firms using corporate financial statements. Specifically, the student will study financial statements and their related footnotes in order to understand the drivers of current performance and risk, forecast future performance, and estimate the intrinsic value implied by those forecasts. These tools can be applied in a number of contexts including equity valuation, project selection, managerial evaluation, and corporate financial statement audits. Prerequisite: ACCT 3723 or equivalent with a grade of C or better. (Typically offered: Irregular)

\section*{ACCT 5483. Financial Accounting Research and Theory. 3 Hours.}

This course explores our contemporary understanding of financial reporting incentives and outcomes. The course draws upon existing research on the determinants and consequences of financial reporting and examines the roles of various constituents including investors, lenders, financial analysts, managers, regulators, and auditors within the financial reporting environment. Prerequisite: Graduate standing and MAcc Director consent. (Typically offered: Irregular)

\section*{ACCT 549V. Special Topics in Accounting. 1-3 Hour.}

Seminar in current topics not covered in other courses. Students may enroll in one or more units. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

ACCT 5523. Advanced Accounting Information Systems. 3 Hours.
This course describes accounting systems in technologically advanced environments. Controls and other technical design considerations are described for the input, processing, storage, and reporting of accounting information. Special topics, such as expert systems and artificial intelligence applications in financial accounting, auditing, and tax also receive considerable attention. Prerequisite: MAcc Director consent. (Typically offered: Irregular)
ACCT 5673. Product, Project and Service Costing. 3 Hours.
Cost systems with emphasis on information generation for cost management of products, projects and services. The course includes spreadsheet and other computer program analysis. Graduate degree credit will not be given for both ACCT 4673 and ACCT 5673. Prerequisite: ACCT 2023 and ACCT 3723 each with grades of \(C\) or better. (Typically offered: Fall)

\section*{ACCT 5703. Governmental/Nonprofit Accounting. 3 Hours.}

The course will critically examine current issues in governmental and non-profit accounting, financial statement compliance and control for governmental and nonprofit entities, and auditing for government and other non-profit organizations. Topics will include examination of state and local government accounting and reporting; sources and applications of taxes and program resources; not-for-profit organization accounting including taxation, regulatory, performance, and compliance issues; industry specific issues in accounting for health care organizations and colleges and universities; and federal governmental accounting. The course will also examine the application processes and compliance procedures for not-for-profit organizations and grants, and will provide a brief introduction to urban planning and economics. Prerequisite: MAcc Director consent. (Typically offered: Irregular)
ACCT 5853. State and Local Taxation. 3 Hours.
This course provides an overview of the basic principles of state and local taxation and the federal constitutional limits for state and local taxing authorities. Emphasis will be on the impact on individuals and multistate entities of income tax, sales tax, property taxes and hybrid tax systems. Prerequisite: ACCT 4203 or graduate standing. (Typically offered: Spring)

\section*{ACCT 5863. Taxation of Flow-Through Entities. 3 Hours.}

In-depth coverage of the federal tax treatment of pass-through entities and their owners, including Partnerships, LLCs, and S Corporations. Prerequisite: Graduate Standing and MACC Director Consent, including completion of ACCT 4203. (Typically offered: Spring)

\section*{ACCT 5873. Advanced Taxation. 3 Hours.}

In-depth coverage of the tax treatment of corporations including advanced tax issues. Introduction to tax research including the organization and authority of tax law; accessing and using the tax law; and, applying tax law to taxpayer scenarios. Prerequisite: ACCT 4203 or equivalent with a grade of \(C\) or better. (Typically offered: Fall)

\section*{ACCT 5883. Tax Planning. 3 Hours.}

In-depth coverage of the tax treatment of passthrough business entities including advanced tax issues. Overview of the income tax treatment of estates and trusts. Overview of the essentials of estate and gift taxation. Prerequisite: ACCT 3843 or equivalent with a grade of \(C\) or better. (Typically offered: Spring)

ACCT 5893. Multi-jurisdictional Tax Issues. 3 Hours.
This course provides an in-depth examination of multi-jurisdictional tax issues including U.S. federal income taxation of inbound and outbound transactions, state and local taxation, and multi-jurisdictional tax policy issues. Pre- or Corequisite: ACCT 5873. (Typically offered: Spring)

\section*{ACCT 5953. Auditing Standards. 3 Hours.}

Professional aspects of financial statement auditing and registered auditors. Including ethics and legal responsibilities; internal control testing; critical evaluation of evidence; application of sampling; and reporting problems. Prerequisite: ACCT 4963 or equivalent with a grade of \(C\) or better. (Typically offered: Fall)

ACCT 5963. Audit and Assurance Services. 3 Hours.
Professional standards and procedures as applied to external and internal assurance engagements. Including coverage of the economic role of assurance providers, engagement planning, risk assessment, evidence gathering, and reporting. Graduate degree credit will not be given for both ACCT 4963 and ACCT 5963. Prerequisite: ACCT 3723 with a grade of \(C\) or better. (Typically offered: Fall and Spring)

\section*{ACCT 6013. Graduate Colloquium. 3 Hours.}

Presentation and critique of research papers and proposals. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ACCT 6033. Accounting Research Seminar I. 3 Hours.}

First course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, managerial accounting and behavioral accounting. (Typically offered: Irregular)

\section*{ACCT 6133. Accounting Research Seminar II. 3 Hours.}

Second course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, financial accounting, managerial accounting, behavioral accounting, tax, audit, international accounting, and education. Prerequisite: ACCT 6033. (Typically offered: Irregular)

\section*{ACCT 6233. Accounting Research Seminar III. 3 Hours.}

Third course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, financial accounting, managerial accounting, behavioral accounting, tax, audit, international accounting, and education. Prerequisite: ACCT 6033. (Typically offered: Irregular)
ACCT 636V. Special Problems in Accounting. 1-6 Hour.
Special research project under supervision of a graduate faculty member. (Typically offered: Fall and Spring)
ACCT 6633. Accounting Research Seminar V. 3 Hours.
Fifth course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, financial accounting, managerial accounting, behavioral accounting, tax, audit, international accounting, and education. Prerequisite: ACCT 6033. (Typically offered: Irregular)
ACCT 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral dissertation. Prerequisite: Candidacy. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{Adult and Lifelong Learning (ADLL)}

\section*{Courses}

ADLL 5103. Diversity and Inclusion in Adult and Lifelong Learning. 3 Hours. Broadly explores how diverse populations and contexts influence the facilitation of adult learning. Focuses on the responsibilities of the practitioner to model and foster inclusive practices to enhance educational programs and initiatives across a variety of environments. (Typically offered: Summer)

\section*{ADLL 5113. Perspectives in Adult Education. 3 Hours.}

Historical overview of the evolving field of adult education and lifelong learning in responsibilities of adult education providers and reviews the expansion of adult and lifelong learning opportunities associated with societal and demographic shifts. (Typically offered: Fall and Spring)

\section*{ADLL 5123. Principles and Practices of Adult Learning. 3 Hours.}

Overview of the adult learner including characteristics, motivation for participating in learning, and strategies for developing educational programs for diverse adult populations. (Typically offered: Fall and Summer)

\section*{ADLL 5133. Curriculum Development in ABE and ASE. 3 Hours.}

Curriculum development in Adult Basic Education (ABE) and Adult Secondary Education (ASE) settings including the various educational functioning levels, measures to asses student levels, selection of teaching materials, and development of curriculum utilizing instructional standards for ABE and ASE programs. (Typically offered: Fall)

ADLL 5143. Instructional Strategies and Assessment in Adult Education. 3 Hours.
Selection and utilization of materials and instructional methods for use in adult learning settings. Evaluative strategies to develop or select appropriate tools and techniques predicated upon the needs and goals of adult learners. (Typically offered: Spring)
ADLL 5153. Organization and Administration of Adult and Lifelong Learning Programs. 3 Hours.
Legal, ethical, staffing, and financial considerations for the development and implementation of programs for adult and lifelong learners in various programs including literacy centers, GED centers, community education, lifelong/leisure learning, and postsecondary education. (Typically offered: Spring)

ADLL 5163. Managing Change in Adult and Lifelong Learning. 3 Hours. Strategies for planning, organizing, and facilitating change in programs that serve adult learners from diverse populations, across varied developmental stages and geographic locations. Discussion of social change that has impacted adult education and analysis of change models relevant to individuals, groups and organizations. (Typically offered: Fall and Summer)

\section*{ADLL 5173. Program Planning. 3 Hours.}

Program development process for adult and lifelong learners. Overview of assessment, developing program objectives, identifying resources, and designing program plans. (Typically offered: Summer)

ADLL 5183. Technology and Innovation in Adult Learning. 3 Hours. Techniques for designing, developing, implementing, and assessing technologymediated adult and lifelong learning programs. Discussion of issues relevant to the use of innovative strategies for delivering instruction via emerging technologies and their potential impact on content and learning outcomes. (Typically offered: Summer)

\section*{ADLL 5193. Seminar in Adult and Lifelong Learning. 3 Hours.}

Seminars focused on topics related to adult and lifelong learning. (Typically offered: Spring and Summer)

\section*{ADLL 5213. Adult and Lifelong Learning Internship. 3 Hours. \\ Internship in adult and lifelong learning settings. (Typically offered: Fall and Spring)}

ADLL 5223. Adult and Lifelong Learning Applied Project. 3 Hours.
Development and Implementation of a project focused on adult and lifelong learning. Consent of advisor/instructor required. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

ADLL 6113. Advanced Adult Learning Theory. 3 Hours.
Advanced study of theories and models of adult and lifelong learning with an emphasis on current trends, recent research, and issues affecting the field. Issues covered will include critical theory and advancements in neuroscience and cognition as they relate to adult learning and lifespan development. (Typically offered: Irregular)

ADLL 6123. Leadership and Ethics in Adult and Lifelong Learning. 3 Hours. This doctoral course focuses on leadership principles and ethical considerations that are critical to developing and sustaining adult education programs that benefit individuals, organizations, and communities. Course content will include case study analysis and lectures from scholar-practitioners from the field. (Typically offered: Irregular)

ADLL 6133. Analysis of International Adult and Lifelong Programs. 3 Hours. Survey of the historical and philosophical events which have shaped adult and lifelong learning worldwide. Discussion of issues affecting adult education and lifelong learning including globalization, educational access, and variance in national policies. (Typically offered: Irregular)

\section*{ADLL 6143. Instructional Adaptation and Innovation in Adult and Lifelong} Learning. 3 Hours.
An overview of teaching and learning methods, styles, and techniques which are applicable when facilitating adult learners across diverse settings. Content to include teaching and learning style assessment, accommodating learning styles, physical and learning disabilities, language differences and cultural norms. (Typically offered: Irregular)

\section*{ADLL 6153. Policy and Public Governance of Adult and Lifelong Learning} Programs. 3 Hours.
Policy analysis and public governance issues in adult and lifelong learning with emphasis on state and federal programs. Discussions of how to evaluate, design, and implement policy focused on promoting adult and lifelong learning activities in a myriad of organizations. Overview of trends and current issues related to policy and public governance of adult and lifelong learning. (Typically offered: Irregular)

\section*{ADLL 6173. Current Issues. 3 Hours.}

Exploration and discussion of current issues relative to adult education and lifelong learning. Focus on the review and application of current research as it relates to practice. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
ADLL 6183. Organization Development, Learning, and Change. 3 Hours. Using a system perspective, this course examines the theories and practices associated with organization development, learning and change to understand the dynamic nature of organizational life. This course examines the structural frame, the human resource frame, the political frame, and the symbolic frame that influences organizational behavior and learning. The course investigates strategies and best practices for managing and leveraging this dynamism to build organizational capacity and improve performance. (Typically offered: Fall and Spring)

\section*{ADLL 6213. Signature Pedagogy: Teaching and Learning in Community Colleges. 3 Hours.}

Using a learning-centered change model, this course examines how community colleges can shift from a traditional teaching-centered paradigm to one that is learning-centered. This course examines the context of the learning college, strategic planning for a learning-outcomes approach to governance, the role of student development and technology in the learning college, and implementing and assessing learning-centered strategies. (Typically offered: Irregular)

ADLL 6223. Workforce and Community Development. 3 Hours.
This course provides an overview of how community colleges influence workforce, economic, and community development through their education missions. The course will examine the community college's expanding role in economic and community development through workforce development programs. Emphasis will be placed on program structure, best practices in program development, and partnerships and collaboration with various stakeholders. (Typically offered: Irregular)

ADLL 6233. Survey and Significance of the American Community College. 3 Hours.
A comprehensive overview of the American community college, its history, its everevolving purpose and the challenges it faces. Course content will focus on the administrators and faculty who lead, the students they serve, and components such as developmental education, integrative education and transfer education. Discussion will include occupational and community education and issues related to accountability. Special attention will be paid to how this unique and complex institution remains relevant and significant to the community. (Typically offered: Irregular)

\section*{ADLL 6243. Current Trends in Community Colleges. 3 Hours.}

This course examines environmental factors that influence the organization and administration of community colleges. Trends related to funding, policy, staffing, and workforce development are examined and contextualized to the evolving community college mission. (Typically offered: Irregular)
ADLL 6253. Professional Development in Adult and Lifelong Learning. 3 Hours.
This course examines career planning and development, performance management, and professional development in various settings. The focus of the course will be on concepts associated with Human Resource Development (HRD) and developing employees within an organization, as well as leading adults in transition in the community and in educational settings through the process of making career decisions. (Typically offered: Irregular)

ADLL 6313. Independent Study. 3 Hours.
Independent study of topics in adult and lifelong learning. (Typically offered: Irregular)

ADLL 6403. Quantitative Reasoning I for Adult Educators. 3 Hours.
Introduction to quantitative reasoning for educators and researchers in adult education. Topics include applying the hypothetico-deductive research process, describing data using statistical terminology, building statistical models, presenting data meaningfully, and using SPSS to analyze data from practical research problems. This course meets in-person three to five times during the semester. Class dates are announced to ADLL students the preceding semester. Classes are held on campus on Saturdays from 9AM to 5PM. Participation is mandatory. (Typically offered: Fall and Spring)
ADLL 6413. Quantitative Reasoning II in Adult and Lifelong Learning. 3 Hours. Methodologies for designing descriptive, correlational, and experimental studies. Development of research questions, definition of variables, selection or development of instruments, data collection, analysis, interpretation and reporting of research results. This course meets in-person three to five times during the semester. Class dates are announced to ADLL students the preceding semester. Classes are held on campus on Saturdays from 9AM to 5PM. Participation is mandatory. Prerequisite: ADLL 6403 or ESRM 6403 or equivalent. (Typically offered: Fall)
ADLL 6423. Qualitative Reasoning in Adult and Lifelong Learning. 3 Hours. Methodologies for designing qualitative research studies in adult and lifelong learning settings. Selection of the appropriate qualitative tradition, selection of research subjects, development of data collection protocols, field work strategies, data analysis, data interpretation and presentation of data results. This course meets in-person three to five times during the semester. Class dates are announced to ADLL students the preceding semester. Classes are held on campus on Saturdays from 9AM to 5PM. Participation is mandatory. (Typically offered: Spring)

\section*{ADLL 6433. Program Evaluation. 3 Hours.}

Overview of evaluation strategies in adult and lifelong learning programs that include: development of evaluation questions, selection or development of instrumentation, data collection methods, data analysis, and reporting of evaluation results. Emphasis on practical and ethical issues associated with evaluation processes. This course meets in-person three to five times during the semester. Class dates are announced to ADLL students the preceding semester. Classes are held on campus on Saturdays from 9AM to 5PM. Participation is mandatory. (Typically offered: Spring)

ADLL 6443. Adult and Lifelong Learning Dissertation Seminar. 3 Hours. Development of dissertation proposal. Formation of research question, selection of methodologies, development of problem statement, research questions, and identification of research variables, constructs of phenomena. Identification of data collection and data analysis procedures. This course meets in-person three to five times during the semester. Class dates are announced to ADLL students the preceding semester. Classes are held on campus on Saturdays from 9AM to 5PM. Participation is mandatory. Prerequisite: ADLL 6403 or ESRM 6403 or ADLL 6413 or ADLL 6423 or ADLL 6433, or equivalent. (Typically offered: Spring)
ADLL 6463. Advanced Qualitative Reasoning in Adult and Lifelong Learning. 3 Hours.
This qualitative methods course provides students with advanced instruction in qualitative data collection, field observations, records research, data analysis, and data display. In addition to reviewing various research studies that demonstrate different qualitative research approaches, students will practice some of the activities associated with executing a qualitative research study. Prerequisite: ADLL 6423 or instructor consent. (Typically offered: Irregular)
ADLL 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Advertising/Public Relations (ADPR)}

\section*{Courses}

ADPR 3553. Advertising and Public Relations Strategies. 3 Hours.
Introduction to the research, strategies and tactics used in developing advertising and public relations campaigns. Provides an overview of planning, implementing, and evaluating research-based advertising and public relations campaigns. (Typically offered: Fall and Spring)

\section*{ADPR 3723. Advertising Principles. 3 Hours.}

Introductory course to the broad field of advertising. Includes a study of the role of advertising in modern society with emphasis being given to the extent and manner of use of advertising in mass media and digital media. Prerequisite: ((At least 30 credit hours completed; at least a 2.5 cumulative GPA; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; completion of JOUR 1033 with a grade of \(C\) or better; completion of JOUR 1003 with a grade of C or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a \(75 \%\) or higher) or (At least 30 credit hours completed; at least a 2.5 cumulative GPA; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; must have completed at least 6 credit hours in JOUR courses, each with a grade of \(C\) or better.); No in-progress credit hours accepted. (Typically offered: Fall and Spring)

\section*{ADPR 3743. Public Relations Principles. 3 Hours.}

Study of theory, methods, and ethics of public relations in modern society, business, and communications. Influencing opinion through acceptable performance and 2way communication. Prerequisite: ((At least 30 credit hours completed; at least a 2.5 cumulative GPA; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; completion of JOUR 1033 with a grade of \(C\) or better; completion of JOUR 1003 with a grade of \(C\) or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a \(75 \%\) or higher) or (At least 30 credit hours completed; at least a 2.5 cumulative GPA; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; must have completed at least 6 credit hours in JOUR courses, each with a grade of \(C\) or better.); No inprogress credit hours accepted. (Typically offered: Fall and Spring)

\section*{ADPR 4143. Public Relations Writing. 3 Hours.}

Instructional and writing practice to develop the professional-level writing skills required of public relations practitioners. Emphasizes different approaches required for different audiences and media. Prerequisite: Minimum of 60 credit hours completed, 2.5 cumulative GPA, ADPR major, and completion of ADPR 3723 and ADPR 3743, each with a grade of B or better; no in-progress credit hours accepted. (Typically offered: Fall and Spring)

\section*{ADPR 4423. Creative Strategy and Execution. 3 Hours.}

The creation of advertising copy and layout for the mass media with emphasis on strategy, the written message, and the physical appearance for the advertisement. Includes laboratory component. Prerequisite: Minimum of 60 credit hours completed, 2.5 cumulative GPA, ADPR major, and completion of ADPR 3723 and ADPR 3743, each with a grade of B or better; no in-progress credit hours accepted. (Typically offered: Fall and Spring)

\section*{ADPR 4453. Media Planning \& Strategy. 3 Hours.}

Includes the study of media characteristics, market research, media strategies, media analysis, media-market measurements and the development of media plans. Emphasis is placed on the analysis of major mass media and digital strategies, tactics, and planning. Prerequisite: Minimum of 60 credit hours completed, 2.5 cumulative GPA, ADPR major, and completion of ADPR 3723 and ADPR 3743, each with a grade of \(B\) or better; no in-progress credit hours accepted. (Typically offered: Fall and Spring)

ADPR 4463. Campaigns. 3 Hours.
Applying advertising principles and techniques to preparation of a complete campaign; determining agency responsibilities, marketing objectives and research, media mix, and creative strategy. Emphasis also given to campaign presentation delivery, utilizing audio and visual techniques. Prerequisite: ADPR 3723 and ADPR 3743, each with a grade of B or better, ADPR major, and 2.5 overall GPA. (Typically offered: Fall and Spring)

ADPR 4473. Account Planning. 3 Hours.
An introduction to applied advertising research and account planning. Integrate consumers' perspectives into creative strategy to developing brand stories for clients. Write creative briefs, positioning statements and prepare copy-testing research instruments to evaluate messages. Utilize consumer research for creating messages for diverse cultures. Prerequisite: Minimum of 60 credit hours completed, 2.5 cumulative GPA, ADPR major, and completion of ADPR 3723 and ADPR 3743, each with a grade of B or better; no in-progress credit hours accepted. (Typically offered: Fall and Spring)
This course is cross-listed with AAST 4473.
ADPR 4483. Multiculturalism in Advertising and Public Relations. 3 Hours. Seminar course involving the critical examination of the major cultural, social, political, economic, ethical and persuasion theories and/or issues relevant to advertising and public relations. (Typically offered: Fall)

\section*{African and African American Studies (AAST)}

\section*{Courses}

AAST 1003. Introduction to African and African American Studies. 3 Hours. This course is an introduction to the interdisciplinary study of Africa and African Americans and their impact on the world order and society with an emphasis on that impact's manifestations in the United States of America. (Typically offered: Fall and Spring)

AAST 1233. History of Race and Medicine. 3 Hours.
Examines history of western biomedicine on the intersection of science, medicine, and race to trace origins of current racial disparities. Examples from the United States and other international developments. (Typically offered: Irregular)

This course is cross-listed with HIST 1233.
AAST 2023. The African American Experience. 3 Hours.
Examines various facets of African American culture that collectively construct the African American experience including art, literature, drama, migration, film, and education. Covers issues facing African Americans through a cultural and sociopolitical context to understand and appreciate African American impacts on the United States. (Typically offered: Fall, Spring and Summer)

\section*{AAST 2053. The Black Student-Athlete. 3 Hours.}

Examines and deconstructs the experiences of Black student-athletes as they figure in University social, political, and economic life, as well as in popular culture and other aspects of our contemporary societies. Sources include poetry, music, websites, athletic manuals, contracts, as well as other media. (Typically offered: Fall, Spring and Summer)

\section*{AAST 3023. African Americans in Sport. 3 Hours.}

Historical, sociological, and political issues and debate surrounding African Americans in sport. Contemporary issues facing African American athletes and sports figures. (Typically offered: Fall, Spring and Summer)

\section*{AAST 3103. Diversity, Pedagogy, \& Visual Culture. 3 Hours.} Investigates various issues of diversity and equity in relation to art and education. It discusses the application of the theories of diversity and equity into teaching, community organizing, activism, and art practices. Prerequisite: ARED 3003
(Typically offered: Fall, Spring and Summer)
This course is cross-listed with ARED 3103.
AAST 3123. African American Students in Higher Education. 3 Hours. Examines the impact of college environments on African American students. Focuses on the following topics regarding African American students: retention, student demographics, student characteristics, current trends, issues and problems, student success, sub-populations, student values, and implications for higher education. (Typically offered: Irregular)

AAST 3133. History of Sports in Africa. 3 Hours.
This course considers the ways that Africans have strategically employed sports to confront and overcome both domestic and external challenges and how these approaches and the range of constituent strategies have changed over time. (Typically offered: Irregular)
This course is cross-listed with HIST 3133.
AAST 3193. The Making of the Modern Caribbean. 3 Hours.
History of the Caribbean from pre-Columbian to present times focusing in particular on indigenous origins, colonialism, slavery, rebellion, independence, nationalism and political integration in the making of the modern Caribbean region. (Typically offered: Fall)
This course is cross-listed with HIST 3193.

AAST 3233. African American History to 1877. 3 Hours.
History of the African American experience in North America emphasizing economic, social, and cultural perspectives. Topics include the African slave trade, the creation of race and racism, the institution of slavery, free community formation in North, and the impact of the Civil War and Reconstruction on African Americans. (Typically offered: Fall and Spring)
This course is cross-listed with HIST 3233.
AAST 3243. African American History Since 1877. 3 Hours.
The course will study the major social, political, and economical issues relating to the African American experience beginning with the late post-Reconstruction period and will include all of the major personalities and influences in the Civil Rights Movement, from 1877 to the present. (Typically offered: Fall and Spring)
This course is cross-listed with HIST 3243.

\section*{AAST 3253. The History of Sub-Saharan Africa. 3 Hours.}

Sub-Saharan African history from the 18th century to the present, with emphasis on the impact of the slave trade, colonization, Independence, and contemporary issues of the post-colonial period. Examination of the ways Africans experienced change in terms of culture, society, economics, gender, religion, politics, and labor. (Typically offered: Fall)
This course is cross-listed with HIST 3253.
AAST 3263. African Americans in Film. 3 Hours.
A survey of the history of images of African Americans in film, especially as these images are examined in the context of stereotypical renditions and/or realistic representations of African American experiences. Issues of African American history, culture, and socio-political context will be addressed in the analyses of these films. Prerequisite: ENGL 1023 and junior or senior standing. (Typically offered: Irregular) This course is cross-listed with ENGL 3263, JOUR 3263, COMM 3263.

\section*{AAST 3273. African Americans in Documentary Film. 3 Hours.}

Exploration of the African-American image and experience in the context of time, historical record and varying production viewpoints from diverse documentarians. African-American history, culture and socio-political context are addressed in the analyses of these documentary films from the perspectives of mainstream media, independent filmmakers and minority documentarians. Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is cross-listed with JOUR 3273, COMM 3273.
AAST 3293. Black Politics. 3 Hours.
This is a survey course designed to provide students with a comprehensive overview of Black political participation in the United States and throughout the diaspora. In addition to analyzing important events in Black politics in the U.S., the course also examines evolving patterns of diasporic political participation throughout the world. (Typically offered: Irregular)
This course is cross-listed with PLSC 3293.

\section*{AAST 3353. Black Digital Storytelling. 3 Hours.}

Provides basic knowledge of the range of capabilities of available audio and video design applications through the intersection of technology, story, and pedagogy, offering perspective, personalization, and insight. (Typically offered: Fall, Spring and Summer)

\section*{AAST 3393. Civil Rights Policy and Politics. 3 Hours.}

This course will draw from linkages between the protest phase of the civil rights and American political institutions. The course explores the institutional impact of the civil rights movement on the presidency, congress, the courts, administrative regulatory agencies, and civil rights advisory organizations. (Typically offered: Spring) This course is cross-listed with PLSC 3393.

\section*{AAST 3513. Black Indians in America. 3 Hours.}

Examines the history of Black Indian slavery and Freedom in the Cherokee, Muscogee, Chickasaw, Choctaw, and Seminole Tribes. Explores the switch to chattel slavery following colonialization, the experiences of African people enslaved by the tribes and their descendants, ongoing present-day disputes over tribal citizenship, human rights, and the American Indian identity. (Typically offered: Fall and Summer Even Years)
AAST 3523. Black in the City. 3 Hours.
Covers the history of Black people's relationship with the urban landscape. Students will use a wide array of primary sources to explore the ways in which Americans not only perceived the city but also sought to understand, master, and reimagine it and the uneven social and economic development that emerged as a consequence. (Typically offered: Fall and Spring Odd Years)

\section*{AAST 3673. Distant Relatives: The Global Black Diaspora. 3 Hours.}

Examines the cultural, political, economic, and social experiences of different parts of the African diaspora in the Americas, with special attention to the Black Atlantic World, focusing on the making of the diaspora through slavery, the middle passage, and later coerced and voluntary migrations. (Typically offered: Spring and Summer Odd Years)

\section*{AAST 3853. Topics in African-American Literature and Culture. 3 Hours.}

The study of works of African-American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with ENGL 3853.

\section*{AAST 3973. South Africa: The Long, Ongoing Walk to Freedom. 3 Hours.} Examines the country's complex history and also the ways that this past is both remembered and memorialized. Closely examines the initial motivations for the colonization of South Africa, the experiences of Africans under colonial and, subsequently, apartheid rule and the ongoing legacies of these periods in contemporary South Africa. (Typically offered: Irregular)

\section*{AAST 3983. Black Movements and Messiahs. 3 Hours.}

Focuses on black movements and leaders across global African history since the Age of Revolutions to the present including political, economic, social, cultural, religious and artistic movements throughout Africa and the diaspora. (Typically offered: Irregular)

AAST 399VH. Honors African \& African American Studies Thesis. 1-6 Hour. Independent thesis research and writing under the direction of an AAST faculty member. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
AAST 4003. African \& African American Studies Study Abroad. 3 Hours. Examination of selected topics in conjunction with student participation in the biannual African \& African American Studies Study Abroad program to Ghana. Topic variable, chosen by instructor. (Typically offered: Summer Even Years) May be repeated for up to 6 hours of degree credit.
AAST 4003H. Honors African \& African American Studies Study Abroad. 3
Hours.
Examination of selected topics in conjunction with student participation in the biannual African \& African American Studies Study Abroad program to Ghana. Topic variable, chosen by instructor. (Typically offered: Summer Even Years) May be repeated for up to 6 hours of degree credit.

\section*{AAST 4043. Black Italia. 3 Hours.}

Explores the history, representation, and lived experiences, both prejudices and successes, of marginalized persons in Italy, particularly those of African heritage through an interdisciplinary lens. (Typically offered: Spring Odd Years)
This course is cross-listed with ITAL 4043.

AAST 4053. Historic Black Northwest Arkansas. 3 Hours.
Explores the history of Black NWA from settlement to the twenty-first century by examining, recovering, and documenting the lives of the region's enslaved and free people of color. Additional exploration of the communities, institutions, social, businesses, and artistic movements that define the black experience in NWA. Corequisite: Lab component. (Typically offered: Irregular)

\section*{AAST 4103. Communicating Body Image. 3 Hours.}

Examines hidden assumptions about body image as it relates to the intersections of race, class, gender, and other major identity markers. (Typically offered: Fall) This course is cross-listed with COMM 4103.

AAST 4123. Africa and the Trans-Atlantic Slave Trade. 3 Hours.
Examines the trans-Atlantic slave trade with a primary focus on the role of Africa and Africans in creating the unique economy and culture of the trans-Atlantic world. (Typically offered: Irregular)
This course is cross-listed with HIST 4123.

\section*{AAST 4153. Race and Society. 3 Hours.}

Introduction to the sociological study of race and ethnicity within the United States, with emphasis on understanding how race and ethnicity operate within contemporary social institutions. Prerequisite: SOCI 2013 or AAST 1003 or AAST 2023. (Typically offered: Fall)
This course is cross-listed with SOCI 4153.
AAST 4163. African American Perspectives of Trauma, Loss, and Recovery. 3 Hours.
Explores dimensions of trauma, loss, and recovery within the lived experiences of African American individuals, families, and communities in the United States. Prerequisite: Junior standing or instructor consent. (Typically offered: Fall) This course is cross-listed with SCWK 4163.

AAST 4173. Social Work with African American Families. 3 Hours. An overview of historical and contemporary issues of African American families using culturally competent and strengths based frameworks. Focuses on the Black family as a social institution. Covers current trends affecting Black families, historical influences, evaluation of social policies, and programs of today. Prerequisite: Junior standing or instructor consent. (Typically offered: Fall and Spring) This course is cross-listed with SCWK 4173.

AAST 4183. Black Environmental Justice. 3 Hours.
Provides an overview of the foundations of environmental justice as it relates to African-American communities. Expands the definitions of the environment and deconstructs the connection between slavery, land loss, gentrification, and food deserts. Finally, the course explores federal policies that shapes built environments, and its influence on African-American culture. (Typically offered: Irregular)

\section*{AAST 4263. Modern Africa. 3 Hours.}

Examines the last half-century of Africa's history, focusing on the last few decades. Introduction of Africa's colonial past, revolutions and struggles for independence. Review of African development in the post-colonial and contemporary era, successes and failures of independent Africa, and the challenges the continent faces today. (Typically offered: Irregular)
This course is cross-listed with HIST 4263.
AAST 4323. Racial Identity, Politics, and Public Policy. 3 Hours.
Examines how race and perceived racial differences affect political discourse, mobilization, representation, and political outcomes. Prerequisite: PLSC 3293 or AAST 1003 or Junior standing. (Typically offered: Spring Even Years)
This course is cross-listed with PLSC 4323.

\section*{AAST 4383. The American Civil Rights Movement. 3 Hours.}

Introduction to the history and development of the civil rights movement in the United States. (Typically offered: Irregular)
This course is cross-listed with HIST 4383.

\section*{AAST 4473. Account Planning. 3 Hours.}

An introduction to applied advertising research and account planning. Integrate consumers' perspectives into creative strategy to developing brand stories for clients. Write creative briefs, positioning statements and prepare copy-testing research instruments to evaluate messages. Utilize consumer research for creating messages for diverse cultures. Corequisite: Lab component. Prerequisite: Minimum 90 hours completed, no in-progress hours or coursework accepted, 2.5 overall GPA, JOUR 1033 with a grade of C or better, and ADPR 3723 and ADPR 3743, with a grade of B or better. (Typically offered: Fall and Spring)
This course is cross-listed with ADPR 4473.

\section*{AAST 4523. Black Utopias/Dystopias. 3 Hours.}

Explores how thinkers in the U.S., the Caribbean, and Africa, as well as movements such as fugitivity, colonization, and emigration to Haiti, Canada, Liberia, Ghana, Paris, and numerous other spaces, envisioned ideal forms of community that would shield them from the perils of white supremacy and racist oppression. (Typically offered: Fall Odd Years)

AAST 4563. The Old South, 1607-1865. 3 Hours.
Survey of the political, social, and economic development of the antebellum South. (Typically offered: Irregular)
This course is cross-listed with HIST 4563.

\section*{AAST 4573. The New South, 1860 to the Present. 3 Hours.}

Survey of the development of the Civil War and postwar South to the present. (Typically offered: Fall Even Years)
This course is cross-listed with HIST 4573.

\section*{AAST 4583. Cultures of Africa. 3 Hours.}

An exploration of the people and places of Africa from a variety of anthropological perspectives. Classic and contemporary works will be studied in order to underscore the unity and diversity of African cultures, as well as the importance African societies have played in helping us understand culture/society throughout the world. (Typically offered: Fall)
This course is cross-listed with ANTH 4583.

\section*{AAST 4623. African American Art History. 3 Hours.}

Surveys African American art from the seventeenth century to the present. It begins with a discussion of the transatlantic slave trade and it examines art produced in what Pratt terms the "contact zones." It then follows developments in African American art from the Antebellum Period to the present. Prerequisite: ARHS 2923. (Typically offered: Fall)
This course is cross-listed with ARHS 4623.

\section*{AAST 4813. Africans and Slavery in Colonial Latin America. 3 Hours.}

Explores the diverse experiences of slaves and free Blacks in colonial Spanish and Portuguese America from 1500 to around 1888, demonstrating that bondage and the practice of African slavery was a pillar of political authority in colonial Latin America. (Typically offered: Irregular)
This course is cross-listed with HIST 4813, LALS 4813.
AAST 4823. Black Freedom in the Age of Emancipation. 3 Hours.
Comparative study of Atlantic World freedom movements from the perspective of the African Diaspora. Focuses on the histories, meanings, and legacies of the various types of black emancipation in the Atlantic World and the cultural technologies that enabled them. (Typically offered: Spring)
This course is cross-listed with HIST 4823.
AAST 4853. Studies in African American Literature and Culture. 3 Hours.
The study of works of African American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is cross-listed with ENGL 4853.

AAST 4863. Gender, Race, and Power. 3 Hours.
Examines how communication shapes gender, race, sexuality, and power. Rather than focusing exclusively on interpersonal communication, this course looks at theories of power that shape institutional macro communication. (Typically offered: Fall Even Years)
This course is cross-listed with COMM 4363.
AAST 489V. African \& African American Independent Study. 1-6 Hour. An exploration of African \& African American Studies topics independently with a faculty member. Topic variable with permission of faculty member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
AAST 4923. History of the Black Press. 3 Hours.
Covers the historic context of contributions and innovations to U.S. newspapers by African Americans. Also investigates the role of the black press from its beginnings in 1827 through the civil rights movement. Prerequisite: Junior standing. (Typically offered: Spring Even Years)
This course is cross-listed with JOUR 4923.
AAST 4933. African American Political Ideology. 3 Hours.
A survey course designed to identify and examine characteristics and functions of several variants of black political ideology/thought. (Typically offered: Fall Odd Years)
This course is cross-listed with PLSC 4933.
AAST 499V. African and African American Studies Seminar. 1-12 Hour. Explores the various aspects of the African \& African American experience as it relates to the development of relationships in American society and the world at large. Variable topic each semester. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.
AAST 5003. Graduate Seminar in African \& African American Studies. 3 Hours. Introduction to graduate study of African \& African American Studies through an interdisciplinary examination of the history of the discipline, research methods employed, and its relationship to other disciplines. (Typically offered: Irregular)
AAST 5103. Graduate Readings in African \& African American Studies. 3 Hours.
An exploration of African \& African American Studies topics independently with a faculty member. Topic variable with permission of faculty member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

AAST 5573. Black in the City. 3 Hours.
Covers the history of Black people's relationship with the urban landscape. Students will use a wide array of primary sources to explore the ways in which Americans not only perceived the city but also sought to understand, master, and reimagine it and the uneven social and economic development that emerged as a consequence. (Typically offered: Fall and Spring Odd Years)
AAST 5673. Distant Relatives: The Global Black Diaspora. 3 Hours.
Examines the cultural, political, economic, and social experiences of different parts of the African diaspora in the Americas, with special attention to the Black Atlantic World, focusing on the making of the diaspora through slavery, the middle passage, and later coerced and voluntary migrations. (Typically offered: Spring Odd Years; Summer)
AAST 5903. Special Topics in African \& African American Studies. 3 Hours.
Graduate level seminar with varied emphasis on topics relating to African \& African American studies. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

AAST 5913. Independent Study in African and African American Studies. 3 Hours.
Graduate level independent study course with varied emphasis on topics relating to African and African American studies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

AAST 6023. Destabilizing Queer Theory. 3 Hours.
Highlights constricted and racialized ways in which people generally visualize class, gender, race, and sexualities. Students will discuss the criticality of complex dynamics of visual politics in class, gender, race, and sexualities, and theoretical issues posed and negotiated by queer theory. (Typically offered: Irregular) This course is cross-listed with ARED 6023.

\section*{AAST 6963. Visualizing Critical Race Theory. 3 Hours.}

An examination of critical theoretical approaches to the concepts of race and racism. Students will examine the ways in which these constructs perform a critical function in the construction of race(s) and racism(s) and their relevance to visual culture. (Typically offered: Fall and Spring)
This course is cross-listed with PLSC 6963, ARED 6963.

\section*{Agricultural Communications (ACOM)}

\section*{Courses}

ACOM 2143. Introduction to Agricultural Communications and Leadership. 3 Hours.
A survey of agricultural communications and leadership theories and practices for students in the ACOM and AGLE concentrations and minors and anyone seeking a basic understanding of these disciplines. The course provides an overview of the history, philosophy, and theories of the disciplines and introduces students to career options, skills and practical competencies required of agricultural communicators and leaders. (Typically offered: Fall)
This course is cross-listed with AGLE 2143.
ACOM 3143. Communicating Agriculture to the Public. 3 Hours.
An overview of public communications theory and practices in the agricultural, food, and life sciences with a particular focus on technical writing, public relations and media relations writing, campaign planning, public speaking, and various mass media communication techniques, including print, broadcast, electronic, and social media. (Typically offered: Fall, Spring and Summer)
ACOM 3143H. Honors Communicating Agriculture to the Public. 3 Hours. An overview of public communications theory and practices in the agricultural, food, and life sciences with a particular focus on technical writing, public relations and media relations writing, campaign planning, public speaking, and various mass media communication techniques, including print, broadcast, electronic, and social media. Prerequisite: Honors standing. (Typically offered: Fall, Spring and Summer) This course is equivalent to ACOM 3143.

\section*{ACOM 3243. Ag Reporting and Feature Writing. 3 Hours.}

This course will provide students an exposure to writing, interviewing, and editing news on agricultural issues in agricultural industry publications. Students will gain practical experience with journalistic interviewing, news writing, feature writing, digital photography, and writing for broadcast on agricultural issues. This course is designed for students with at least six hours of upper division courses. Pre- or Corequisite: JOUR 1033 and lab component. (Typically offered: Fall Odd Years)
ACOM 3943. Professional Development in Agricultural Communications and Leadership. 3 Hours.
Overview of professional and technical skills needed to succeed in internships and jobs in the field of agricultural communications. (Typically offered: Fall Even Years) This course is cross-listed with AGLE 3943.
ACOM 400V. Special Problems in Agricultural Communications. 1-6 Hour. Individual study or research for advanced undergraduates in the field of agricultural communication. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AGED 400V, AGLE 400V.

\section*{ACOM 401V. Special Topics. 1-4 Hour.}

Studies of selected topics in agricultural communications not covered in other courses. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

\section*{ACOM 4143. Electronic Communications in Agriculture. 3 Hours.}

An overview of communication technology in the agricultural, food and life sciences. (Typically offered: Spring Even Years)

\section*{ACOM 4243. Graphic Design in AFLS. 3 Hours.}

This course provides students with graphic design and software skills specific to industries in Agriculture, Food, and Life Sciences. Students will learn to use industry-standard software (InDesign, Photoshop, Illustrator, Microsoft Excel, etc.) to prepare text and graphics and package them for use in print production. Prerequisite: ASTM 2903 or ISYS 1123 or equivalent. (Typically offered: Fall, Spring and Summer)

\section*{ACOM 4343. Communication Campaigns in Agriculture. 3 Hours.}

Students will develop understanding of the principles, practices and applications of social marketing, integrated marketing communications, advertising and public relations as they pertain to developing communication campaign strategies for the agricultural industry. Students will develop a communication campaign for an agricultural company and/or entity focused on a specific product or service. Prerequisite: Junior standing or higher, ACOM 4243, ACOM 3243, ACOM 3143, and (ACOM 2143 or AGLE 2143), or instructor permission. (Typically offered: Spring Odd Years)

\section*{ACOM 4543. Ag Publications. 3 Hours.}

Students produce a magazine through classroom study mirroring a professional magazine staff and are provided an opportunity for their writing, advertisements, photographs and artwork to be published in the magazine. By using computer applications, students integrate various skills including writing, editing and layout in agricultural publications. Prerequisite: JOUR 1033. (Typically offered: Spring Even Years)

ACOM 4643. Agricultural Video Production. 3 Hours.
The goal of this course is for students to develop a practical understanding of video production with an emphasis on short-form videos commonly used in education and marketing in the agricultural, food and life sciences industry. The course content covers both theory and practical application and will include training with industrystandard video equipment and editing software. (Typically offered: Spring Even Years)

\section*{ACOM 475V. Internship in Ag Communications. 1-6 Hour.}

A supervised practical work experience in ag communications which is designed to give the student an insight into the role of ag communications employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AGLE 475V, ASTM 475V, EXED 475V.
ACOM 510V. Special Problems. 1-6 Hour.
Individual investigation of a special problem in agricultural communications which is not available through regular courses. These will be directed by a member of the graduate faculty. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ACOM 5143. Electronic Communications in Agriculture. 3 Hours.}

An overview of communication technology in the agricultural, food and life sciences. Graduate degree credit will not be given for both ACOM 4143 and ACOM 5143. (Typically offered: Spring Even Years)

\section*{ACOM 520V. Special Topics. 1-4 Hour.}

Topics not covered in other courses or a more intensive study of specific topics in agricultural communications. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ACOM 5243. Graphic Design in AFLS. 3 Hours.}

This course provides students with graphic design and software skills specific to industries in Agriculture, Food, and Life Sciences. Students will learn to use industry-standard software (InDesign, Photoshop, Illustrator, Microsoft Excel, etc.) to prepare text and graphics and package them for use in print production. Graduate degree credit will not be given for both ACOM 4243 and ACOM 5243. Prerequisite: ASTM 2903 or ISYS 1123 or equivalent. (Typically offered: Fall, Spring and Summer)

\section*{ACOM 5343. Communication Campaigns in Agriculture. 3 Hours.}

Students will develop understanding of the principles, practices and applications of social marketing, integrated marketing communications, advertising and public relations as they pertain to developing communication campaign strategies for the agricultural industry. Students will develop a communication campaign for an agricultural company and/or entity focused on a specific product or service. Graduate degree credit will not be given for both ACOM 4343 and ACOM 5343. Prerequisite: Graduate standing. (Typically offered: Spring Odd Years)

\section*{ACOM 5543. Ag Publications. 3 Hours.}

Students produce a magazine through classroom study mirroring a professional magazine staff and are provided an opportunity for their writing, advertisements, photographs and artwork to be published in the magazine. By using computer applications, students integrate various skills including writing, editing and layout in agricultural publications. Graduate degree credit will not be given for both ACOM 4543 and ACOM 5543. (Typically offered: Spring Even Years)

\section*{ACOM 5643. Agricultural Video Production. 3 Hours.}

The goal of this course is for students to develop a practical understanding of video production with an emphasis on short-form videos commonly used in education and marketing in the agricultural, food and life sciences industry. The course content covers both theory and practical application and will include training with industrystandard video equipment and editing software. Prerequisite: Graduate standing. (Typically offered: Spring Even Years)

\section*{ACOM 575V. Internship in Agricultural Communications. 1-6 Hour.}

Scheduled practical field experiences under supervision of a professional practitioner. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{Agricultural Economics (AGEC) \\ Courses}

AGEC 1103. Principles of Agricultural Microeconomics. 3 Hours.
Introduction to agricultural economics, including a survey of the role and characteristics of agriculture businesses in our economic system. Basic economic concepts concerning price determination, profit maximization, and resource use are emphasized. The use of economic principles as applied to the production and marketing decisions made by managers of agricultural firms is demonstrated. Credit will be allowed for only one of AGEC 1103 or ECON 2023 or ECON 2023H. Pre- or Corequisite: MATH 1203. (Typically offered: Fall, Spring and Summer) This course is cross-listed with ECON 2023.

AGEC 1103H. Honors Principles of Agricultural Microeconomics. 3 Hours. Introduction to agricultural economics, including a survey of the role and characteristics of agriculture businesses in our economic system. Basic economic concepts concerning price determination, profit maximization, and resource use are emphasized. The use of economic principles as applied to the production and marketing decisions made by managers of agricultural firms is demonstrated. Credit will be allowed for only one of AGEC 1103 or ECON 2023 or ECON 2023H. Pre- or Corequisite: MATH 1203. (Typically offered: Fall and Spring)
This course is cross-listed with ECON 2023, AGEC 1103.

AGEC 2103. Principles of Agricultural Macroeconomics. 3 Hours.
Applications of economics principles to problems of agricultural production, distribution, and income; including a study of the interrelationship between agriculture and other segments of the economy; and the dynamic forces in the economy which affect agriculture. Credit will be allowed for only one of AGEC 2103 or AGEC 2103H or ECON 2013 or ECON 2013H. Pre- or Corequisite: MATH 1203. (Typically offered: Fall and Spring)
This course is cross-listed with ECON 2013.
AGEC 2103H. Honors Principles of Agricultural Macroeconomics. 3 Hours. Applications of economics principles to problems of agricultural production, distribution, and income; including a study of the interrelationship between agriculture and other segments of the economy; and the dynamic forces in the economy which affect agriculture. Credit will be allowed for only one of AGEC 2103 or AGEC 2103H or ECON 2013 or ECON 2013H. Pre- or Corequisite: MATH 1203. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is cross-listed with ECON 2013, AGEC 2103.
AGEC 2143. Agribusiness Financial Records. 3 Hours.
Principles of small agricultural business management accounting practices are taught to allow students to gain hands-on experience with financial record keeping for a business. Resulting financial statements are analyzed to determine opportunities for enhancing financial efficiency. Prerequisite: (ASTM 2903 or ISYS 1123) and (AGEC 1103 or ECON 2023 or ECON 2143). (Typically offered: Fall)

\section*{AGEC 2303. Introduction to Agribusiness. 3 Hours.}

Introduction to agribusiness issues as they relate to the food processing, wholesale and retail sectors of the agricultural industry. Coverage of methods and tools agribusiness managers use to evaluate business opportunities. Case studies serve to communicate concepts of product distribution, design, promotion and pricing in the development of a marketing plan. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Fall, Spring and Summer)

\section*{AGEC 2403. Quantitative Tools for Agribusiness. 3 Hours.}

Introduction to quantitative methods used in agricultural economics and agribusiness with an emphasis on skills and techniques that will enhance the ability of students to perform in upper division coursework. Provides an overview of statistical and optimization methods used in research problems, economic theory, and applied decision making activities. Prerequisite: (AGEC 1103 or ECON 2023 or ECON 2143) and MATH 2043 (or higher MATH course from the University Core excluding MATH 2183). (Typically offered: Fall)

\section*{AGEC 3303. Food and Agricultural Marketing. 3 Hours.}

Surveys consumer trends in food markets and the marketing activities of the food and fiber system. Emphasizes marketing concepts for both commodities and differentiated food products. Topics include applied consumer and price theory; marketing management; structure and performance of the food system; and current agricultural marketing topics. Prerequisite: AGEC 1103 or ECON 2023 or ECON 2143. (Typically offered: Fall, Spring and Summer)

\section*{AGEC 3313. Agribusiness Sales. 3 Hours.}

Principles of professional sales and sales management techniques used in food and agricultural firms; develop a professional sales presentation; study current agribusiness industry professional sales persons and sales practices and techniques. Prerequisite: AGEC 1103 or AGEC 2103 or ECON 2013 or ECON 2023 or ECON 2143 or equivalent. (Typically offered: Spring)

\section*{AGEC 3373. Futures and Options Markets. 3 Hours.}

Theory and mechanics of commodity futures and options markets including trading, margin, fees, etc. Price relationships between cash, futures and options. Fundamental and technical price analysis. Price risk management strategies for producers and users of agricultural commodity marketing plan. Speculative and hedging simulation exercises. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Fall)

AGEC 3403. Farm Business Management. 3 Hours.
Application of economic principles for the profitable organization and operation of the farm business. Focuses upon agricultural production management decision-making tools: budgeting techniques (enterprise, partial, cash flow), balance sheet, income statement, cash flow, investment analysis and risk management. Recommended: AGEC 1103 (or ECON 2023), AGEC 2143, and ASTM 2903. (Typically offered: Fall, Spring and Summer)
AGEC 3413. Principles of Environmental Economics. 3 Hours.
An introductory, issues-oriented course in the economics of the environment. The course will focus on what is involved in how society makes decisions about environmental quality. The environmental issues important to the State of Arkansas and the United States will be emphasized. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Spring)
This course is cross-listed with ENSC 3413.
AGEC 3413H. Honors Principles of Environmental Economics. 3 Hours.
An introductory, issues-oriented course in the economics of the environment. The course will focus on what is involved in how society makes decisions about environmental quality. The environmental issues important to the State of Arkansas and the United States will be emphasized. Corequisite: Drill component. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Spring) This course is cross-listed with AGEC 3413, ENSC 3413.

\section*{AGEC 3503. Agricultural Law I. 3 Hours.}

Examination of those areas of law especially applicable to agriculture. Fundamentals of contract law, torts law, and property law will accompany discussion of major areas of agricultural law; acquisition and disposal of farmland; farm tenancies; rights and limitations in the use and ownership of farmland; water law; environmental protection; protection of the productivity of agricultural land; and the law of sales and secured transactions in an agricultural context. (Typically offered: Fall)
AGEC 3523. Environmental and Natural Resources Law. 3 Hours.
Principles of environmental and natural resources law relevant to agriculture, food and the environmental sciences; legal principles relating to regulation of water, air, hazardous substances, land, wildlife, livestock, and water rights. Principles of civil and criminal liabilities and other developing legal and regulatory issues relating to agriculture and natural resources. (Typically offered: Spring Even Years)

\section*{AGEC 400V. Special Problems. 1-6 Hour.}

Special studies and readings conducted under the direct supervision of staff members to satisfy the requirements of individual students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{AGEC 401V. Internship in Agribusiness. 1-6 Hour.}

A supervised practical work experience in an agribusiness firm or a governmental or industrial organization having direct impact on agriculture in order to gain professional competence and insight to employment opportunities. Prerequisite: junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.
AGEC 402V. Special Topics. 1-3 Hour.
Studies of selected topics in agricultural economics not available in other courses. (Typically offered: Irregular) May be repeated for degree credit.

\section*{AGEC 4041. Agribusiness Capstone. 1 Hour.}

The purpose of this course is to provide students with an opportunity to apply and integrate knowledge from previous coursework in general education and agribusiness. This course is designed for students to demonstrate mastery of a number of subjects within the agribusiness discipline. Students will provide evidence of integrated knowledge through a variety of means including oral presentations, creation of a 1250-word reflective essay, and applying problem solving and critical thinking skills. Prerequisite: Senior standing. (Typically offered: Fall and Spring)

\section*{AGEC 4113. Agricultural Prices and Forecasting. 3 Hours.}

Price theory and techniques for predicting price behavior of general economy and price behavior of individual agricultural products will be analyzed. Provides practice in the application of economics and statistics to agricultural price analysis.
Prerequisite: ((AGEC 1103 or ECON 2023) and (AGEC 2403 or STAT 2303 or BUSI 1033) and (MATH 2043 or higher, excluding MATH 2183)). (Typically offered: Spring)

\section*{AGEC 4123. Legal Issues in Animal Agriculture. 3 Hours.}

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation from local to state to federal, depending on the issue will be studied and discussed. (Typically offered: Spring Odd Years)
This course is cross-listed with ANSC 4123, POSC 4123.

\section*{AGEC 4143. Agricultural Finance. 3 Hours.}

Methods and procedures whereby agricultural firms acquire and utilize funds required for their successful operation. Emphasis is placed upon role of finance and financial planning and consideration is given to an understanding of financial firms serving agriculture. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013) and (AGEC 2143 or ACCT 2013). (Typically offered: Fall)

AGEC 4163. Agricultural and Rural Development. 3 Hours.
Examination of agricultural and rural development issues in less developed countries. Alternative agricultural production systems are compared, development theories examined, and consideration given to the planning and implementation of development programs. Prerequisite: AGEC 1103 (or ECON 2023). (Typically offered: Fall)

AGEC 4163H. Honors Agricultural and Rural Development. 3 Hours.
Examination of agricultural and rural development issues in less developed countries. Alternative agricultural production systems are compared, development theories examined, and consideration given to the planning and implementation of development programs. Prerequisite: AGEC 1103 (or ECON 2023) and honors standing. (Typically offered: Fall)
This course is equivalent to AGEC 4163.
AGEC 4243. Agribusiness Strategy. 3 Hours.
Addresses problems of strategy formulation in agribusiness emphasizing current problems and cases in agriculture. Surveys modern and classic perspectives on strategy with applications to agribusiness. Examines the development of firm level strategies within the structure and competitive environment of agricultural firms and industries. Prerequisite: MATH 2043 and (AGEC 1103 or ECON 2023 or ECON 2143) and (AGEC 3403 or AGEC 2143 or ACCT 2013). (Typically offered: Spring)

\section*{AGEC 4303. Agribusiness Marketing Management. 3 Hours.}

Marketing concepts will be developed and applied to the global food and fiber system. The course will use both commodity and product marketing principles and economic theory to analyze varied marketing situations. Case studies will be used to demonstrate the role that demand analysis and consumer behavior play in market management. Prerequisite: AGEC 2303 and AGEC 3303. (Typically offered: Fall and Summer)

\section*{AGEC 4313. Agricultural Business Management. 3 Hours.}

The planning, organizing, leading and controlling functions of management as they relate to agricultural business firms. Marketing of value-added products, budgeting, organizational structure, cost control, financial statements, capital budgeting and employee supervision and motivation. Case studies are used to teach communication and decision-making skills. Senior standing recommended. Prerequisite: (AGEC 2143 or ACCT 2013) and AGEC 2303. (Typically offered: Fall)

AGEC 4323. AgriBusiness Entrepreneurship. 3 Hours.
Agribusiness entrepreneurship is the process of bringing food or rural-based products and services from conceptualization to market. The course presents the opportunities, problems and constraints facing individuals and firms operating in rural or isolated markets while emphasizing the steps in conceptualization, development, marketing, and delivery-selling of agribusiness rural products. Prerequisite:
AGEC 1103 or equivalent. (Typically offered: Spring)
AGEC 4373. Basis Trading: Applied Price Risk Management. 3 Hours.
This course provides students an opportunity to gain a detailed working knowledge of how basis trading concepts and practices are applied to agricultural markets and to develop a skill set that can be put immediately into practice in any basis trading operation. Prerequisite: AGEC 3373 or consent of instructor. (Typically offered: Spring and Summer)

AGEC 4383. Basis Trading: Case Study. 3 Hours.
This course provides an opportunity to apply principles learned in AGEC 4373 to grain merchandising using the case study approach. The course will involve in-class meetings supplemented with faculty-directed group-based learning experiences involving professional grain merchandisers. Group activities will follow the traditional case study method. Prerequisite: AGEC 4373. (Typically offered: Fall)

\section*{AGEC 4403. Advanced Farm Business Management. 3 Hours.}

Principles and procedures of decision making as applied to the allocation of resources in the farm business for profit maximization. Emphasis is placed on use of principles of economics and their application to the decision making process. Includes exercises on the application of principles to specific farm management problems. Senior standing recommended. Prerequisite: AGEC 3403 and (ASTM 2903 or equivalent) and (AGEC 2143 or ACCT 2013). (Typically offered: Fall)

AGEC 4403H. Honors Advanced Farm Business Management. 3 Hours.
Principles and procedures of decision making as applied to the allocation of resources in the farm business for profit maximization. Emphasis is placed on use of principles of economics and their application to the decision making process. Includes exercises on the application of principles to specific farm management problems. Senior standing recommended. Prerequisite: AGEC 3403, (ASTM 2903 or equivalent), (AGEC 2143 or ACCT 2013) and honors standing. (Typically offered: Fall)
This course is equivalent to AGEC 4403.

\section*{AGEC 4603. Food Economics and Health. 3 Hours.}

This course provides an advanced overview of selected topics in food economics, food and nutrition policy and the interface between nutrition programs and health policy. Students will develop an understanding of economic and policy concepts of food, nutrition, and health. The course emphasizes analytical tools that can be applied to study issues in food, nutrition, and health facing the US and world populations. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2403 or BUSI 1033 or STAT 2303 or MATH 2043 or MATH 3083 or MATH 3013). (Typically offered: Spring)

AGEC 4613. Political Economy of Agriculture and Food. 3 Hours.
Agricultural and food policies are studied from domestic and international perspectives. Laws, regulations, decisions and actions by governments and other institutions are examined in terms of rationale, content, and consequences. Economic and political frameworks are used to assess policies in terms competitive structure, operation, and performance of farming and food systems. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013) and (PSYC 2003 or SOCI 2013 or HDFS 2603). (Typically offered: Fall)
AGEC 4623. International Agricultural Trade and Commercial Policy. 3 Hours. Analysis of agricultural market competition and performance in a global economy. The impact of domestic and international agricultural policies on domestic and international markets and welfare. Economic principles applied to the interaction of economic events in the world food economy. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013). (Typically offered: Spring)

\section*{AGEC 500V. Special Problems. 1-3 Hour.}

Individual reading and investigation of a special problem in agricultural economics not available under regular courses, under the supervision of the graduate faculty. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

\section*{AGEC 5011. Seminar. 1 Hour.}

Presentation and discussion of graduate student research. Formal presentations are made by all graduate students. Consideration given to research design, procedures, and presentation of results. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

\section*{AGEC 502V. Special Topics. 1-3 Hour.}

Advanced studies of selected topics in agricultural economics not available in other courses. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{AGEC 503V. Internship in Agricultural Economics. 1-3 Hour.}

On-the-job application of skills developed in the M.S. program. (Typically offered: Fall, Spring and Summer)

\section*{AGEC 5043. Agricultural Finance. 3 Hours.}

Methods and procedures whereby agricultural firms acquire and utilize funds required for their successful operation. Emphasis is placed upon role of finance and financial planning and consideration is given to an understanding of financial firms serving agriculture. Graduate degree credit will not be given for both AGEC 4143 and AGEC 5043. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013) and (AGEC 2143 or ACCT 2013). (Typically offered: Fall)

\section*{AGEC 5053. Advanced Farm Business Management. 3 Hours.}

Principles and procedures of decision making as applied to the allocation of resources in the farm business for profit maximization. Emphasis is placed on use of principles of economics and their application to the decision making process. Includes exercises on the application of principles to specific farm management problems. Graduate degree credit will not be given for both AGEC 4403 and AGEC 5053. Prerequisite: AGEC 3403 and ASTM 2903 or equivalent. (Typically offered: Fall)

\section*{AGEC 5063. Agricultural and Rural Development. 3 Hours.}

Examination of agricultural and rural development issues in less developed countries. Alternative agricultural production systems are compared, development theories examined, and consideration given to the planning and implementation of development programs. Graduate degree credit will not be given for both AGEC 4163 and AGEC 5063. Prerequisite: AGEC 1103 (or ECON 2023). (Typically offered: Fall)

\section*{AGEC 5073. Basis Trading: Applied Price Risk Management. 3 Hours.}

This course provides students an opportunity to gain a detailed working knowledge of how basis trading concepts and practices are applied to agricultural markets and to develop a skill set that can be put immediately into practice in any basis trading operation. Graduate degree credit will not be given for both AGEC 4373 and AGEC 5073. Prerequisite: AGEC 3373 or consent of instructor. (Typically offered: Spring and Summer)

\section*{AGEC 5083. Basis Trading: Case Study. 3 Hours.}

This course provides an opportunity to apply principles learned in AGEC 4373 to grain merchandising using the case study approach. The course will involve in-class meetings supplemented with faculty-directed group-based learning experiences involving professional grain merchandisers. Group activities will follow the traditional case study method. Graduate degree credit will not be given for both AGEC 4383 and AGEC 5083. Prerequisite: AGEC 4373 or AGEC 5073 (formerly AGEC 4373). (Typically offered: Fall)

AGEC 5103. Agricultural Microeconomics. 3 Hours.
Masters-level training in agricultural microeconomic theory and its application to food, agriculture and the environment. The course covers behavior of firms, households and markets, in more depth and rigor than encountered in undergraduate courses. Theories are explained and then applied to relevant food, agricultural, environment and resource issues. (Typically offered: Fall)

AGEC 5113. Agricultural Prices and Forecasting. 3 Hours.
Price theory and techniques for predicting price behavior of general economy and price behavior of individual agricultural products will be analyzed. Provides practice in the application of economics and statistics to agricultural price analysis. Graduate degree credit will not be given for both AGEC 4113 and AGEC 5113. Prerequisite: Graduate Standing. (Typically offered: Spring)

\section*{AGEC 5123. AgriBusiness Entrepreneurship. 3 Hours.}

Agribusiness entrepreneurship is the process of bringing food or rural-based products and services from conceptualization to market. The course presents the opportunities, problems and constraints facing individuals and firms operating in rural or isolated markets while emphasizing the steps in conceptualization, development, marketing, and delivery-selling of agribusiness rural products. Graduate degree credit will not be given for both AGEC 4323 and AGEC 5123. Prerequisite: AGEC 1103 or equivalent. (Typically offered: Spring)

AGEC 5133. Agricultural and Environmental Resource Economics. 3 Hours. An economic approach to problems of evaluating private and social benefits and costs of altering the environment. Emphasis given to the interaction of individuals, institutions, and technology in problems of establishing and maintaining an acceptable level of environmental quality. Prerequisite: Minimum of 3 hours Agricultural Economics or Economics at 3000 level or higher or PhD standing. (Typically offered: Spring)

AGEC 5143. Financial Management in Agriculture. 3 Hours.
Covers advanced topics in agricultural finance. The general focus of the course is the financial management of non-corporate firms. Covers the basic tools of financial analysis including financial arithmetic, asset evaluation under risk, and financial analysis and planning using econometric models. Such topics covered include management of current assets, capital budgeting, capital structure, and institutions involved in agricultural finance. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{AGEC 5153. The Economics of Public Policy. 3 Hours.}

This class will examine the impact of public policy on agricultural and other business sectors as well as households and individuals, particular in rural areas. Emphasis will also be placed on analyzing the potential impact of future policy changes. The course will focus on the application of welfare criteria and economic analyses to the problems and policies affecting resource adjustments in agriculture and rural communities. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{AGEC 5203. Agribusiness Marketing Management. 3 Hours.}

Marketing concepts will be developed and applied to the global food and fiber system. The course will use both commodity and product marketing principles and economic theory to analyze varied marketing situations. Case studies will be used to demonstrate the role that demand analysis and consumer behavior play in market management. Graduate degree credit will not be given for both AGEC 4303 and AGEC 5203. Prerequisite: Graduate Standing. (Typically offered: Fall and Summer)

\section*{AGEC 5213. Agricultural Business Management. 3 Hours.}

The planning, organizing, leading and controlling functions of management as they relate to agricultural business firms. Marketing of value-added products, budgeting, organizational structure, cost control, financial statements, capital budgeting and employee supervision and motivation. Case studies are used to teach communication and decision-making skills. Graduate degree credit will not be given for both AGEC 4313 and AGEC 5213. Prerequisite: (AGEC 2143 or ACCT 2013) and AGEC 2303 or equivalent. (Typically offered: Fall)

AGEC 5223. International Agricultural Trade and Commercial Policy. 3 Hours. Analysis of agricultural market competition and performance in a global economy. The impact of domestic and international agricultural policies on domestic and international markets and welfare. Economic principles applied to the interaction of economic events in the world food economy. Graduate degree credit will not be given for both AGEC 4623 and AGEC 5223. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013). (Typically offered: Spring)
AGEC 5233. Political Economy of Agriculture and Food. 3 Hours.
Agricultural and food policies are studied from domestic and international perspectives. Laws, regulations, decisions and actions by governments and other institutions are examined in terms of rationale, content, and consequences. Economic and political frameworks are used to assess policies in terms competitive structure, operation, and performance of farming and food systems. Graduate degree credit will not be given for both AGEC 4613 and AGEC 5233. Prerequisite: (AGEC 1103 or ECON 2023) and (AGEC 2103 or ECON 2013) and (PSYC 2003 or SOCI 2013 or HDFS 2603). (Typically offered: Fall)
AGEC 5303. Agricultural Marketing Theory. 3 Hours.
Survey of the structure of agricultural product and factor markets including a critique of theoretical analyses of industry structure, conduct and performance; and a review of market structure research in agricultural industries. Prerequisite: Graduate standing. (Typically offered: Fall)
AGEC 5403. Quantitative Methods for Agribusiness. 3 Hours.
Application of quantitative techniques used to support managerial decision-making and resource allocation in agricultural firms. Provides exposure to mathematical and statistical tools (regression analysis, mathematical programming, simulation) used in economic analysis in agriculture. Emphasis is placed on computer applications with conceptual linkage to economic theory. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{AGEC 5413. Agribusiness Strategy. 3 Hours.}

Addresses problems of strategy formulation in agribusiness emphasizing current problems and cases in agriculture. Surveys modern and classic perspectives on strategy with applications to agribusiness. Examines the development of firm level strategies within the structure and competitive environment of agricultural firms and industries. Prerequisite: Graduate standing. (Typically offered: Spring)
AGEC 5603. Food Economics and Health. 3 Hours.
This course provides an advanced overview of selected topics in food economics, food and nutrition policy and the interface between nutrition programs and health policy. Students will develop an understanding of economic and policy concepts of food, nutrition, and health. The course emphasizes analytical tools that can be applied to study issues in food, nutrition, and health facing the US and world populations. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{AGEC 5613. Econometrics. 3 Hours.}

Use of economic theory and statistical methods to estimate economic models. The single equation model is examined emphasizing multicollinearity, autocorrelation, heteroskedasticity, binary variables and distributed lags and model specification. Prerequisite: MATH 2043 and knowledge of matrix methods, (which may be acquired as a corequisite), and (AGEC 1103 or ECON 2023) and (AGEC 2403 or STAT 2303 or BUSI 1033). (Typically offered: Spring)
AGEC 5623. Quantitative Food and Agricultural Policy Analysis. 3 Hours. Introduction to applied analysis of domestic and international food and agricultural policies using quantitative tools. This course will provide hands-on experience with simulation modeling in microeconomics. An emphasis is placed on policy analysis through computer applications with theoretical underpinnings. Prerequisite: Graduate Standing. (Typically offered: Fall)

AGEC 5643. Agricultural Data Science. 3 Hours.
Agricultural and environmental data gathering, wrangling, analysis, and visualization with emphasis on applied programming, version control, and analytical skills. This course provides students foundational and applied skills in constructing diverse cross-sectional and panel data sets for econometric investigation. Students should expect to learn and demonstrate competency in programming for data gathering, wrangling, analysis, and visualization. The course will cover common data sources, descriptive analysis, and econometric techniques used in agricultural and production economics. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{AGEC 5713. Food Safety Law. 3 Hours.}

This course provides students with an introduction to food law and policy, history of food regulation, the organization of federal food law and regulatory agencies, government inspection and enforcement powers, food safety standards, food labeling, food advertising and product liability. Web-based course. (Typically offered: Irregular)
AGEC 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
AGEC 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Agricultural Education (AGED) Courses}

AGED 1123. Foundations of Agricultural Education. 3 Hours.
A preparatory course evaluating the historical foundations of agricultural education with an introduction to the psychological, sociological and philosophical foundations of education. This course will encourage reflective practice through understanding of educational trends, classroom environment creation and utilization, and effective program planning. (Typically offered: Fall)
AGED 3111. Student Management. 1 Hour.
To guide students in the development of realistic, proactive classroom management strategies that establish a safe culture of student learning and academic success. Prerequisite: Instructor Consent. (Typically offered: Spring)

\section*{AGED 3133. Instructional and Presentation Strategies. 3 Hours.}

Methods and techniques in teaching agriculture at the secondary level. Lecture/ laboratory 4 hours per week. Corequisite: Lab component. (Typically offered: Spring)

\section*{AGED 3161L. Curriculum Development and Assessment Techniques in Career} and Technical Education Laboratory. 1 Hour.
To supply students with opportunities to apply skills in creating curricula, lesson plans, and assessment strategies for courses in career and technical education. Materials created as a result of this course will apply principles learned in AGED 3162, and will align with anticipated courses to be taught by the student during his/her teaching internship. Pre- or Corequisite: AGED 3162. (Typically offered: Fall)

AGED 3162. Curriculum Development and Assessment Techniques in AGED. 2 Hours.
To supply students with the necessary information and skills to select and apply appropriate teaching techniques, curricula, resources, and assessment strategies when designing a course in career and technical education. (Typically offered: Fall)

\section*{AGED 4003. Issues in Agriculture. 3 Hours.}

Lecture and discussion on local, regional, national and international issues related to agricultural policy, ethics, environment, society, and science. Designed for students with at least six hours of upper division agricultural science courses. Prerequisite:
Junior standing. (Typically offered: Fall)

\section*{AGED 400V. Special Problems in Agricultural and Extension Education. 1-6} Hour.
Individual study or research for advanced undergraduates in the field of agricultural and extension education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AGLE 400V, ACOM 400V.

\section*{AGED 401V. Special Topics. 1-3 Hour.}

Studies of selected topics in agricultural or extension education not covered in other courses. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.
AGED 4113. Undergraduate Researchers Improving Student Experience. 3 Hours.
To engage students in the social sciences in action research that serves to solve a problem or answer a question within the student's academic field through scientific inquiry. All students will work with professionals, commonly outside of the university, within their discipline to conduct their action research in order to solve a problem experienced by that professional. Students may work in teams or individually to complete the overall purpose of the course. (Typically offered: Spring)

\section*{AGED 4213. Teachers as Professionals. 3 Hours.}

To expose students to the roles and responsibilities of professional teachers. Students will understand the characteristics common to professionals and apply these to the teaching setting. Real-world examples of "grey-area" situations will allow students to evaluate issues holistically and determine appropriate solutions following the ethical and professional guidelines of the teaching discipline. This course will also guide students in the development of realistic, proactive classroom management strategies that establish a safe culture of student learning and academic success, a major component of teacher professionalism. Additionally, students will prepare resumes and engage in mock interviews to enhance their professional dispositions as they consider employment opportunities. Prerequisite: Instructor consent. (Typically offered: Spring)

\section*{AGED 4233. Program Development. 3 Hours.}

Teachers of agricultural education need an understanding of the skills needed to successfully manage leadership and experiential learning components of the agricultural education model. This course is designed to teach principles and concepts of leadership, program organization, youth organization management, supervised agricultural experience, and advisory committees. This course is a portion of pre-professional studies required for certification in agricultural education. Prerequisite: AGED 3133 and instructor consent. (Typically offered: Spring)

\section*{AGED 4443. Principles of Technological Change. 3 Hours.}

This course introduces a structured approach for dealing with the organizational and human aspects of technology transition, including the key concepts of resistance and change management, organizational change, communications, and processes by which professional change agents influence the introduction, adoption, and diffusion of technological change. This course may be offered as a web-based course. Prerequisite: Junior standing. (Typically offered: Fall Odd Years)

\section*{AGED 475V. Internship in Agricultural Education. 1-6 Hour.}

Scheduled practical field experiences under the supervision of a professional practitioner in off-campus secondary school systems. Emphasis includes classroom preparation, teaching, and student evaluation. Successful completion of a criminal background check required before a student can begin internship. Prerequisite: Admission into Clinical Practice. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{AGED 4843L. Methods in Agricultural Laboratories. 3 Hours.}

Methods and management techniques in all types of agricultural laboratories that may be in a secondary agricultural science program. Emphasis on management of students and facilities, equipment, and materials. Laboratory 6 hours per week. (Typically offered: Spring)

AGED 5001. Seminar. 1 Hour.
Presentations and discussion of graduate student research as well as review of current literature and topics of current interest by students and faculty. All graduate students will make at least one formal presentation. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

AGED 5053. Philosophy of Agricultural and Extension Education. 3 Hours.
An examination and analysis of social and economic events leading to the establishment and maintenance of federal, state, county, and local agricultural education programs. Lecture 3 hours per week. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{AGED 510V. Special Problems. 1-6 Hour.}

Individual investigation of a special problem in agricultural education which is not available through regular courses. These will be directed by a member of the graduate faculty. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{AGED 5113. Undergraduate Researchers Improving Student Experiences. 3} Hours.
To engage students in the social sciences in action research that serves to solve a problem or answer a question within the student's academic field through scientific inquiry. All students will work with professionals, commonly outside of the university, within their discipline to conduct their action research in order to solve a problem experienced by that professional. Students may work in teams or individually to complete the overall purpose of the course. Prerequisite: AGED 5463 or HESC 5463 or other instructor approved Research Methods course. (Typically offered: Spring)
AGED 520V. Special Topics in Agricultural and Extension Education. 1-4 Hour. Topics not covered in other courses or a more intensive study of specific topics in agriculture education. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{AGED 5411. Thesis Proposal Development. 1 Hour.}

The purpose of this course is to assist graduate students in the preparation of their thesis or dissertation research proposal. Students will produce the first three chapters of their thesis by the end of the course. Prerequisite: AGED 5463 or HESC 5463. (Typically offered: Spring)

\section*{AGED 5421. Grant Writing. 1 Hour.}

This course provides students with the experience of navigating the research grant writing process, covering the process from idea conception through planning, proposing, receiving, executing grant-funded projects. Students will write an independent grant proposal as a major assignment in this course. Prerequisite: Graduate standing. (Typically offered: Fall)
AGED 5431. Technical Communication in the Social Sciences. 1 Hour. This course focuses on audience identification, writing, editing, formatting and production of social science-based materials for publication. Much of the course content is in the context of developing the findings, conclusions, and recommendations of the master's thesis or other research manuscript. Principles include communicating information relevant to human subject research in agriculture, natural resources, and life sciences to research peers. Course delivery is asynchronous. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{AGED 5443. Principles of Technological Change. 3 Hours.}

This course introduces a structured approach for dealing with the organizational and human aspects of technology transition, including the key concepts of resistance and change management, organizational change, communications, and processes by which professional change agents influence the introduction, adoption, and diffusion of technological change. This course may be offered as a web-based course. Graduate degree credit will not be given for both AGED 4443 and AGED 5443. (Typically offered: Fall Odd Years)

AGED 5463. Research Methodology in the Social Sciences. 3 Hours. Logical structure and the method of science. Basic elements of research design; observation, measurement, analytic method, interpretation, verification, presentation of results. Applications to research in economic or sociological problems of agriculture and human environmental sciences. Prerequisite: Graduate standing. (Typically offered: Fall)
This course is cross-listed with HESC 5463.
AGED 5473. Interpreting Social Data in Agriculture. 3 Hours.
The development of competencies in analyzing, interpreting and reporting the results of analyses of social science data in agriculturally related professions. Students will select appropriate analysis techniques and procedures for various problems, analyze data, and interpret and report the results of statistical analyses in narrative and tabular form. (Typically offered: Fall)

AGED 5493. Survey Design and Scale Development. 3 Hours.
This course is designed to provide the expertise required to design and conduct survey research. Students will understand the instruments (scales/questionnaire) used in data collection processes and acquire the statistical skills necessary to develop and test these survey instruments. This course uses both theory and practice. Hands-on training will be provided via SPSS package for data analyses, and Qualtrics will be used for web-based surveys. Prerequisite: 3 hours of graduate level statistics coursework and HESC 5463 or AGED 5463 or instructor consent. (Typically offered: Summer)
This course is cross-listed with HESC 5053.
AGED 575V. Internship in Agricultural Education. 1-6 Hour.
Scheduled practical field experiences under supervision of a professional practitioner in off-campus secondary school systems. Emphasis includes classroom preparation, teaching, and student evaluation. (Typically offered: Fall, Spring and Summer)

AGED 5993. Global Horticulture and Human Nutrition to Enhance Community Resilience and Food Security. 3 Hours.
This course covers three broad areas (Global Horticulture, Sustainable International Development, Human Health and Nutrition) and experts on three campuses created the instruction. The course is intended to be multi-disciplinary, and students should use their contextual knowledge to add to weekly discussions. Prerequisite: Graduate standing. (Typically offered: Spring)
This course is cross-listed with FDSC 5993, HORT 5993.
AGED 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Agricultural Education, Communications and Technology (AECT)}

\section*{Courses}

AECT 610V. Special Problems. 1-6 Hour.
Individual investigation of a special problem in agricultural education which is not available through regular courses. These will be directed by a member of the graduate faculty. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

AECT 620V. Special Topics in Agricultural Education, Communications and Technology. 1-4 Hour.
Topics not covered in other courses or a more intensive study of specific topics in agriculture education. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{AECT 6301. Doctoral Seminar. 1 Hour.}

The seminar provides doctoral students a critical review of current research in agricultural and extension education, communication, leadership, and technology, an opportunity for collaboration and mentorship with peers, faculty and visiting scholars, and professional development. The presentation of a doctoral research proposal and research findings is expected of all students. This course may be repeated for up to three hours of degree credit. Prerequisite: Admission in doctoral program. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

\section*{AECT 6903. Emerging Scholarship in the Discipline. 3 Hours.}

This course surveys recent scholarship in the discipline of agricultural education, communications and technology, with a special focus on recent literature highlighting research, teaching, and service across the discourse communities of ag education, ag communications, ag systems technology management, and ag leadership. Prerequisite: Graduate standing. (Typically offered: Fall Odd Years)
AECT 700V. PhD Dissertation. 1-18 Hour.
PhD dissertation. Prerequisite: Graduate standing and approval of dissertation chair. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Agricultural Leadership (AGLE) Courses}

AGLE 2143. Introduction to Agricultural Communications and Leadership. 3 Hours.
A survey of agricultural communications and leadership theories and practices for students in the ACOM and AGLE concentrations and minors and anyone seeking a basic understanding of these disciplines. The course provides an overview of the history, philosophy, and theories of the disciplines and introduces students to career options, skills and practical competencies required of agricultural communicators and leaders. (Typically offered: Fall)
This course is cross-listed with ACOM 2143.

\section*{AGLE 3153. Leadership Development in Agriculture. 3 Hours.}

Identification of styles and roles of leadership; development of leadership techniques and skills required in working with organizations; dynamics of group action; methods of resolving conflict; ethical considerations for leaders; and personal skills development. (Typically offered: Fall, Spring and Summer)

AGLE 3153H. Honors Leadership Development in Agriculture. 3 Hours. Identification of styles and roles of leadership; development of leadership techniques and skills required in working with organizations; dynamics of group action; methods of resolving conflict; ethical considerations for leaders; and personal skills development. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to AGLE 3153.
AGLE 3943. Professional Development in Agricultural Communications and Leadership. 3 Hours.
Overview of professional and technical skills needed to succeed in internships and jobs in the field of agricultural communications. (Typically offered: Fall Even Years) This course is cross-listed with ACOM 3943.

AGLE 400V. Special Problems in Agricultural Leadership. 1-6 Hour. Individual study or research for advanced undergraduates in the field of agricultural and extension education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AGED 400V, ACOM 400V.
AGLE 401V. Special Topics. 1-4 Hour.
Studies of selected topics in agricultural or extension education not covered in other courses. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

AGLE 4153. Survey of Leadership Theory in Agriculture. 3 Hours.
An interdisciplinary analysis of current issues in the practice of leadership in a contemporary and changing society, particularly as they affect agricultural organizations and issues. Discussions of leadership theory, roles of leaders, skills for effective leadership, diversity issues, and followership will challenge students to think critically about leadership, enhance personal leadership performance and potential, and prepare for or expand leadership roles, and to become innovative and productive in dealing with challenges facing agricultural organizations today. Prerequisite: AGLE 3153. (Typically offered: Fall)

\section*{AGLE 4163. Leadership Analysis Through Film. 3 Hours.}

Clemens (1999) stated, "Films are a catalyst." They make you laugh, cry, cheer, and think. Flaum (2002) stated leadership is best learned in the leadership moment. Moreover, the principles of Andragogy advocate adult learners best learning when there is a practical application of the learning subject. Therefore, this course builds upon the study of leadership theory by allowing students to analyze, reflect, synthesize, and apply leadership theories, models and concepts in the context of film. The course materials encourage students to reflect, synthesize, analyze, and apply the information learned from major leadership theories and apply them to various scenarios and situations demonstrated in selected films. Prerequisite: AGLE 3153 or AGLE 4153 or graduate standing or instructor consent. (Typically offered: Spring and Summer)

\section*{AGLE 475V. Internship in Ag Leadership. 1-6 Hour.}

A supervised practical work experience in Ag Leadership which is designed to give the student an insight into the role of ag leadership employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with ACOM 475V, ASTM 475V, EXED 475V.
AGLE 5033. Developing Leadership in Agricultural Organizations. 3 Hours. Organizational concepts of leadership; administrative styles and structures; leadership for boards, committees, governmental bodies, and review of societal and political processes. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{AGLE 510V. Special Problems. 1-6 Hour.}

Individual investigation of a special problem in agricultural education which is not available through regular courses. These will be directed by a member of the graduate faculty. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{AGLE 5153. Survey of Leadership Theory in Agriculture. 3 Hours.}

An interdisciplinary analysis of current issues in the practice of leadership in a contemporary and changing society, particularly as they affect agricultural organizations and issues. Discussions of leadership theory, roles of leaders, skills for effective leadership, diversity issues, and followership will challenge students to think critically about leadership, enhance personal leadership performance and potential, and prepare for or expand leadership roles, and to become innovative and productive in dealing with challenges facing agricultural organizations today. Graduate degree credit will not be given for both AGLE 4153 and AGLE 5153. (Typically offered: Fall)

\section*{AGLE 5163. Leadership Analysis Through Film. 3 Hours.}

Films are a catalyst (Clemens, 1999). They make you laugh, cry, cheer, and think. Flaum (2002) stated leadership is best learned in the leadership moment. Moreover, the principles of Andragogy advocate adult learners best learning when there is a practical application of the learning subject. Therefore, this course builds upon the study of leadership theory by allowing students to analyze, reflect, synthesize, and apply leadership theories, models and concepts in the context of film. The course materials encourage students to reflect, synthesize, analyze, and apply the information learned from major leadership theories and apply them to various scenarios and situations demonstrated in selected films. (Typically offered: Spring and Summer)

AGLE 520V. Special Topics. 1-4 Hour.
Topics not covered in other courses or a more intensive study of specific topics in agricultural leadership. (Typically offered: Irregular) May be repeated for degree credit.

\section*{AGLE 575V. Internship in Agricultural Leadership. 1-6 Hour.}

Scheduled practical field experiences under supervision of a professional practitioner. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with ACOM 575V, ASTM 575 V .

\section*{Agricultural Statistics (AGST) \\ Courses}

AGST 5014. Experimental Design. 4 Hours.
Types of experimental designs, their analysis and application to agricultural research. Lecture 3 hours and laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: AGST 5023 or STAT 5003. (Typically offered: Spring)
AGST 5023. Principles of Experimentation. 3 Hours.
Fundamental concepts of experimental and statistical methods as applied to agricultural research. Lecture 3 hours per week. (Typically offered: Fall, Spring and Summer)

\section*{AGST 5031. SAS Programming for Agricultural Sciences. 1 Hour.}

An introduction to the SAS programming language with an emphasis on the reading and restructuring of data files, and the displaying of data in tabular and graphic forms. The course is taught using a hands-on approach. (Typically offered: Fall and Spring)

AGST 504V. Special Topics. 1-4 Hour.
Topics not covered in other courses or a broader-based study of specific topics in statistics and related areas. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.
AGST 5713. Applied Regression Analysis for Agricultural Sciences. 3 Hours. Analysis of agricultural experiments which contain quantitative factors through regression procedures. Lecture 3 hours per week. Prerequisite: AGST 5023 or STAT 5003. (Typically offered: Fall)

\section*{Agricultural Systems Technology Management (ASTM) \\ Courses}

ASTM 1611L. Fundamentals of Agricultural Systems Technology Laboratory. 1 Hour.
Study of basic mathematical and physical science concepts important in the mechanization of agriculture. Laboratory required for agricultural education, communication and technology majors enrolled in ASTM 1613, optional for others enrolled in ASTM 1613. Corequisite: ASTM 1613. (Typically offered: Fall)
ASTM 1613. Fundamentals of Agricultural Systems Technology. 3 Hours. Introduction to basic physical concepts important in agricultural technical systems: applied mechanics, power and machinery management, structures and electrification, and soil and water conservation. Lecture 3 hours per week. (Typically offered: Fall)

\section*{ASTM 2123. Metals and Welding. 3 Hours.}

An introduction to agricultural mechanics shop work to include hot and cold metal work, arc welding, and gas welding and cutting. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. (Typically offered: Fall and Spring)

ASTM 2903. Agricultural and Human Environmental Sciences Applications of Microcomputers. 3 Hours.
Lecture and laboratory assignments covering the contemporary use of microcomputers in agricultural, food and life sciences. Emphasis placed on learning to use selected, appropriate Microsoft (Windows, Word, Excel, PowerPoint and Access), email/Internet, and collaboration software packages. (Typically offered: Fall, Spring and Summer)

ASTM 3101L. Small Power Units/Turf Equipment Laboratory. 1 Hour. Testing, evaluation, and maintenance of engines, hydrostatic power transmission systems, and equipment commonly used in the turf and landscaping industries. Corequisite: ASTM 3102. Prerequisite: MATH 1203 or higher. (Typically offered: Spring)

\section*{ASTM 3102. Small Power Units/Turf Equipment. 2 Hours.}

Principles of operation, adjustment, repair, maintenance, and trouble shooting of small air-cooled engines and power units, including various engine systems, service and maintenance of turf equipment and machinery. Lecture 2 hours per week. Corequisite: ASTM 3101L. Prerequisite: MATH 1203 or higher. (Typically offered: Spring)

\section*{ASTM 3153. Surveying in Agriculture and Forestry. 3 Hours.}

Techniques and procedures normally used in determining areas and characterizing the topography of agricultural and forest lands. Includes basic concepts of surveying; use and care of level, transit, distance measuring equipment; topographic mapping and public land surveys. (Typically offered: Fall)
ASTM 3173. Electricity in Agriculture. 3 Hours.
Principles of electricity; wiring of home, farmstead and other agricultural structures; selection of electric motors and their care and application in the broad field of agriculture; lighting and special uses of electricity such as heating and electrical controls. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)

\section*{ASTM 400V. Special Problems. 1-6 Hour.}

Individual research or study in electrification, irrigation, farm power, machinery, or buildings. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
ASTM 402V. Special Topics in Agricultural Mechanization. 1-4 Hour. Topics not covered in other courses or a more intensive study of special topics in agricultural mechanization. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ASTM 4203. Mechanized Systems Management. 3 Hours.}

Selection, sizing, and operating principles of agricultural machinery systems, including power sources. Cost analysis and computer techniques applied to planning and management of mechanized systems. Corequisite: Lab component. Prerequisite: MATH 1203 or higher. (Typically offered: Fall Even Years)
ASTM 475V. Internship in Ag Systems. 1-6 Hour.
A supervised practical work experience in Ag Systems Technology Management which is designed to give the student an insight into the role of ag systems employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with ACOM 475V, AGLE 475V, EXED 475V.

\section*{ASTM 4973. Irrigation. 3 Hours.}

Methods of applying supplemental water to soils to supply moisture essential for plant growth, sources of water, measurement of irrigation water, pumps, conveyance structure, economics, and irrigation for special crops. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)

ASTM 501V. Special Topics in Agricultural Mechanization. 1-4 Hour.
Topics not covered in other courses or a more intensive study of special topics in agricultural mechanization. Graduate degree credit will not be given for both ASTM 402V and ASTM 501V. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ASTM 510V. Special Problems in Ag Systems Technology. 1-4 Hour.}

Individual investigation of a special problem in agricultural communications which is not available through regular courses. These will be directed by a member of the graduate faculty. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.
ASTM 5203. Mechanized Systems Management. 3 Hours.
Selection, sizing, and operating principles of agricultural machinery systems, including power sources. Cost analysis and computer techniques applied to planning and management of mechanized systems. Graduate degree credit will not be given for both ASTM 4203 and ASTM 5203. Corequisite: Lab component. Prerequisite: MATH 1203. (Typically offered: Fall Even Years)

ASTM 575V. Internship in Agricultural Systems. 1-6 Hour.
Scheduled practical field experiences under supervision of a professional practitioner. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with ACOM 575V, AGLE 575V.

\section*{ASTM 5973. Irrigation. 3 Hours.}

Methods of applying supplemental water to soils to supply moisture essential for plant growth, sources of water, measurement of irrigation water, pumps, conveyance structure, economics, and irrigation for special crops. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both ASTM 4973 and ASTM 5973. Corequisite: Lab component. (Typically offered: Spring)

\section*{Agriculture, Food and Life Sciences (AFLS)}

\section*{Courses}

AFLS 1023H. Bumpers College Honors Program Perspectives. 3 Hours.
This course is intended to meet the requirements of UNIV 1001 and provide Bumpers College Honors students with an overview of the Honors Program as well as provide insight into research and creative project development and expectations. Pre- or Corequisite: Honors standing. (Typically offered: Fall)

\section*{AFLS 1600. Undergraduate Research Assistant. 0 Hours.}

Undergraduate research. (Typically offered: Fall, Spring and Summer)
AFLS 2600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
AFLS 3413H. Honors Proposal Development and Research Methods. 3 Hours. This course will include creative process, ethics, proposal writing, literature review, qualitative and quantitative/experimental design, scientific theory and methods, data collection, and analysis. At the end if this course, students will have developed a proposal for their Honors thesis. The course also offers an opportunity for students to present their proposals orally as preparation for their proposal meeting. Prerequisite: Sophomore, junior or senior standing. (Typically offered: Fall and Spring)

AFLS 3600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

AFLS 3993. Professional Growth and Critical Career Skills. 3 Hours.
The MERIT Profile will be utilized to identify students behavioral and character profiles so they may "know themselves" based upon strengths and tendencies. Throughout the term, students will be engaged in topics to help them identify their core values and strengths and develop their weaknesses. Course topics will include; adjusting to mistakes, cast off the negatives, verifying your values, scheduling priorities, building character, framing decisions/choices, personal improvement plans, and more. Upon course completion students should be able to utilize personal leadership approaches, strategic thinking and behavior, critical thinking and problem identification techniques and verbal and written communication to effectively convey their suitability specific feasible careers. Prerequisite: Junior standing. (Typically offered: Fall)

\section*{AFLS 400VH. Honors Thesis. 1-6 Hour.}
(Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{AFLS 401V. Special Topics in AFLS. 1-6 Hour.}

Studies of selected topics not covered in other courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{AFLS 401VH. Honors Special Topics. 1-6 Hour.}

Studies of selected topics not covered in other courses. Must be in the Honors program to register for this course. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to AFLS 401V.
AFLS 403V. Special Problems. 1-6 Hour.
Individual study or research for advanced undergraduates. Corequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{AFLS 403VH. Honors Special Problems. 1-6 Hour.}

Individual study or research for advanced undergraduates. Corequisite: Instructor consent and honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to AFLS 403V.

\section*{AFLS 4600. Undergraduate Research Assistant. 0 Hours.}

Undergraduate research. (Typically offered: Fall, Spring and Summer)
AFLS 501V. Special Topics. 1-3 Hour.
Studies of selected topics not covered in other courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{Air Force ROTC (AERO)}

\section*{Courses}

AERO 1011. Heritage and Values of the United States Air Force I. 1 Hour. A survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force. Leadership LAB mandatory for cadets. Corequisite: Lab component. (Typically offered: Fall)

AERO 1021. Heritage and Values of the United States Air Force II. 1 Hour. A survey course designed to introduce students to the United States Air Force and provides an overview of the basic characteristics, missions, and organization of the Air Force. Leadership LAB mandatory for cadets. Corequisite: Lab component. (Typically offered: Spring)

\section*{AERO 2011. Team and Leadership Fundamentals I. 1 Hour.}

This course focuses on laying the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The course will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate. Corequisite: Lab component. (Typically offered: Fall)
AERO 2021. Team and Leadership Fundamentals II. 1 Hour.
This course focuses on laying the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The course will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate. Prerequisite: AERO 2011. Corequisite: Lab component. (Typically offered: Spring)
AERO 3013. Leading People and Effective Communication I. 3 Hours. This course teaches cadets advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Cadets have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors. Corequisite: Lab component. (Typically offered: Fall)
AERO 3023. Leading People and Effective Communication II. 3 Hours. This course teaches cadets advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Cadets have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors. Corequisite: Lab component. (Typically offered: Spring)
AERO 4013. National Security Affairs and Preparation for Active Duty I. 3 Hours.
This course is designed for college seniors and gives them the foundation to understand their role as military officers in American society. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the cadets for Active Duty. Corequisite: Lab component. (Typically offered: Fall)

AERO 4023. National Security Affairs and Preparation for Active Duty II. 3 Hours.
This course is designed for college seniors and gives them the foundation to understand their role as military officers in American society. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the cadets for Active Duty. Corequisite: Lab component. (Typically offered: Spring)

\section*{Animal Science (ANSC) Courses}

ANSC 1001L. Introductory to Animal Sciences Laboratory. 1 Hour. Study of facilities used in production, processing, and management in animal agriculture. Identification, selection evaluation and testing of livestock, meat, and milk. Laboratory 3 hours per week. (Typically offered: Fall and Spring)

ANSC 1033. Introductory Animal Sciences. 3 Hours.
Students will be introduced to biological sciences associated with modern systems of care and management of livestock. Foundation sciences include topics in genetics, nutrition, reproduction, and animal health. The importance of livestock, equine, and companion animals and their allied industries will also be discussed. (Typically offered: Fall and Spring)

\section*{ANSC 1033H. Honors Introductory Animal Sciences. 3 Hours.}

Students will be introduced to biological sciences associated with modern systems of care and management of livestock. Foundation sciences include topics in genetics, nutrition, reproduction, and animal health. The importance of livestock, equine, and companion animals and their allied industries will also be discussed. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ANSC 1033.
ANSC 1062. Sustainable Integrated Small Animal Farming. 2 Hours.
Practical information on small scale animal production, including practical strategies for farm planning, issues of economic and environmental sustainability, best management practices, biosecurity, disease prevention, and farm safety will be presented. (Typically offered: Spring)
This course is cross-listed with POSC 1062.
ANSC 1781. Career Preparation and Development. 1 Hour.
Course will cover concepts necessary for preparing for a career in the animal sciences and allied industries. Concepts of goal setting, effective written and verbal communications, interpersonal skills, professional behaviors, presentation skills, portfolio and resume development will be presented. (Typically offered: Fall)

ANSC 2003. Introduction to Equine Industry. 3 Hours.
Examination of careers and business opportunities in the equine industry. Students will gain the opportunity to identify high quality horses through evaluation of conformation and locomotion. Students will also gain skill at oral presentation and be knowledgeable of costs and responsibilities associated with horse ownership. (Typically offered: Spring)
ANSC 2111L. Introduction To Animal Evaluation and Handling Lab. 1 Hour. Laboratory component stressing fundamental concepts of animal structure, composition, and behavior, and animal handling as they relate to animal production, safety, well-being, and handler safety. One 3-hour lab weekly. Corequisite: ANSC 2113 (only for students majoring in Animal Science). Pre- or Corequisite: ANSC 1033. (Typically offered: Fall and Spring)
ANSC 2113. Introduction to Animal Evaluation and Handling. 3 Hours. Fundamental concepts of the interrelationship of animal growth, structure, function, and animal handling as they relate to animal production, safety, well-being, and handler safety. Corequisite: ANSC 2111L (only for students majoring in Animal Science). Pre- or Corequisite: ANSC 1033. (Typically offered: Fall and Spring)

ANSC 2252L. Introduction to Livestock and Meat Evaluation. 2 Hours.
Develop an understanding between live animal evaluation and carcass composition. Comparative judging including meat evaluation, classification and selection of beef cattle, sheep and swine. (Typically offered: Spring)

\section*{ANSC 2303L. Introduction to Horsemanship. 3 Hours.}

A study of modern horsemanship training techniques involving the psychology and ethology (reason for the behavior) of equine social behavior and how it pertains to learning patterns; application of fundamental behavioral concepts in training of horses, and modification of desirable and undesirable behavioral patterns.
Prerequisite: Instructor consent. (Typically offered: Fall and Spring)

\section*{ANSC 2333. Introduction to Animal Health. 3 Hours.}

This course will cover the fundamental principles of animal health and disease prevention. Course discussion will include sanitation, disinfection, immunization, nutrition, housing and husbandry, causes of diseases, parasitism, clinical signs of disease, prevention and treatment options for diseases. Prerequisite: BIOL 1543 and sophomore standing. (Typically offered: Fall)

ANSC 2411L. Domestic Animal Microbiology Laboratory. 1 Hour.
This course is designed for students working on their Poultry Science, Animal Science, and/or Food Science degrees. Students enrolled in this course will learn how to collect samples aseptically from live birds and meat samples, transport samples, and culture samples on a variety of different microbiological media. In addition, students will have the opportunity to visit one of the microbiology labs in the local poultry production facilities. Students will learn how to handle samples, stain bacterial cells, and identify unknown bacteria from field samples. A lab period will be assigned to teaching students on how to use bacteria in food production by teaching students how to prepare and sample yogurt. Corequisite: ANSC 2413. (Typically offered: Fall)
This course is cross-listed with POSC 2411L.
ANSC 2413. Domestic Animal Microbiology. 3 Hours.
Basic concepts of domestic animal and poultry microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Corequisite: ANSC 2411L. Prerequisite: (BIOL 1543 and BIOL 1541L) and (CHEM 1073 and ((CHEM 1071L or CHEM 1103) or (CHEM 1123 and CHEM 1121L)). (Typically offered: Fall)
This course is cross-listed with POSC 2413.

\section*{ANSC 3003. Applied Animal Parasitology. 3 Hours.}

The economically important parasites of domestic animals with emphasis on their host relationships and management considerations. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Fall Even Years)

\section*{ANSC 3013. Parasitisms of Domesticated Non-Herbivores. 3 Hours.}

Course will provide applied instruction and appreciation for the parasitisms of our domesticated swine, chickens, turkeys, dogs and cats. (Typically offered: Fall Odd Years)

ANSC 3033. Animal Physiology. 3 Hours.
Fundamental aspects of central nervous, musculoskeletal, reproductive, digestive, immune, cardiovascular, respiratory and renal systems will be covered. The normal structure and function of these systems will be emphasized. Lecture 3 hours per week. Prerequisite: BIOL 1543 and (CHEM 1123 or CHEM 1073). (Typically offered: Spring)

\section*{ANSC 3072. Equine Selection and Evaluation. 2 Hours.}

Students will learn criteria for evaluation and selection of breeding and show animals and will gain expertise in the evaluation of breed types and show ring characteristics. Includes field trips to various breed operations. Students in this class will be well prepared to participate in equine judging team activities. Prerequisite: Instructor consent. (Typically offered: Spring)

\section*{ANSC 3123. Principles of Genetics. 3 Hours.}

Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher. (Typically offered: Fall)
This course is cross-listed with POSC 3123.
ANSC 3133. Animal Breeding and Genetics. 3 Hours.
Application of the principles of genetics to the breeding of farm animals. Lecture 3 hours per week. Corequisite: Drill component. Prerequisite: MATH 1203 or higher. (Typically offered: Spring)

\section*{ANSC 3141L. Animal Nutrition Laboratory. 1 Hour.}

Animal Nutrition Laboratory (FA) Practical and quantitative approach to animal nutrition; use of various methods of feedstuff evaluation including ration balancing for domestic animals. Laboratory 2 hours per week. Corequisite: ANSC 3143 for ANSC majors only. Prerequisite: MATH 1203. (Typically offered: Fall)

ANSC 3143. Principles of Animal Nutrition. 3 Hours.
Scientific approach to animal nutrition involving the mechanisms through which feed nutrients are utilized by farm animals. Lecture 3 hours per week. Corequisite: ANSC 3141L (only a corequisite for students majoring in Animal Science). Prerequisite: ANSC 1033. (Typically offered: Fall)

\section*{ANSC 3213. Behavior of Domestic Animals. 3 Hours.}

Behavior associated with domestication. Effects of selective breeding, physical and social environments, and developmental stage on social organization, aggressive behavior, sexual behavior, productivity, and training of domestic animals. (Typically offered: Fall)

\section*{ANSC 3282. Livestock Judging and Selection. 2 Hours.}

Comparative judging, including grading, classification, and selection of beef cattle, swine, sheep and horses. Oral and written discussion. Laboratory 6 hours per week. Prerequisite: ANSC 1033 or ANSC 2252L. (Typically offered: Fall)

ANSC 3291. Livestock Junior Judging Team Activity. 1 Hour.
Training for membership on judging teams, through participation. (Typically offered: Spring)

ANSC 3333. Diseases of Livestock. 3 Hours.
Introductory study of the diseases of farm animals with emphasis on fundamental principles of disease, body defense mechanisms, hygiene, and sanitation. Prerequisite: BIOL 1543 and ANSC 2333. (Typically offered: Spring)

ANSC 3433. Fundamentals of Reproductive Physiology. 3 Hours.
Principles of mammalian reproductive physiology with emphasis on farm animals. Lecture 3 hours per week. Pre- or Corequisite: ((CHEM 1073 and CHEM 1071L) or (CHEM 1123 and CHEM 1121L) or (CHEM 2613 and CHEM 2611L) or (CHEM 3603 and CHEM 3601L)) and junior standing. Prerequisite: BIOL 1543. (Typically offered: Fall)

ANSC 3491L. Artificial Insemination in Cattle. 1 Hour.
Experience with artificial insemination technique in cattle including estrus detection, semen storage and handling, insemination equipment maintenance and technique. Laboratory 4 hours per week. The course is offered the second 8 weeks of the spring semester. Pre- or Corequisite: ANSC 3433 or instructor consent. (Typically offered: Fall)

\section*{ANSC 3513H. Honors Current Approaches in Agricultural Laboratory Research. 3 Hours.}

A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping,
data interpretation, and presentation of results. Prerequisite: BIOL 1543 and honors standing. (Typically offered: Spring Even Years)
This course is cross-listed with POSC 3513 H .
ANSC 3613. Meat Science. 3 Hours.
The study of meat science and muscle biology. Topics will include animal/tissue growth and development and the relationship to meat quality. Meat processing, preservation, and meat safety concerns will also be considered. Lecture 3 hours per week. (Typically offered: Spring)

\section*{ANSC 3723. Horse and Livestock Merchandising. 3 Hours.}

Various types of merchandising programs for specific livestock enterprises will be presented. Students will evaluate the effectiveness of merchandising programs including how to organize, advertise, and manage a purebred auction sale of livestock. (Typically offered: Fall)
ANSC 3753. Equine Assisted Activities and Therapies. 3 Hours.
Animal Science 3753 introduces students to the field of equine assisted activities and therapies. A variety of approaches, therapeutic settings and client populations will be addressed with an emphasis on equine behavior. Students will gain experience in the practical application of an equine assisted therapy program. (Typically offered: Fall)

ANSC 3761L. Ranch Horse Riding. 1 Hour.
This course is designed for students to have the opportunity to practice and/or compete in ranch horse competition as well as experience horseback ranch work. The class will consist mostly of hands-on participation at the Whitaker Arena as well as various competition and ranch sites around the region and country. Students will learn the value of the horse in livestock production as well as the competition portion of the equine industry. The Ranch Horse Team is a flagship for the University of Arkansas, Bumper's College Department of Animal Science. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{ANSC 3773. Equine Behavior. 3 Hours.}

Students will be introduced to equine behavior and its application to equine management and training. Course will cover identifying behaviors, senses and memory of the horse, horse-human interaction, how horses learn, the application of classical conditioning and equine welfare. (Typically offered: Summer)
ANSC 400V. Special Problems. 1-6 Hour.
Special problems in the animal sciences for advanced undergraduate students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ANSC 401V. Internship in Animal Sciences. 1-6 Hour.}

Supervised work experience with private or government organizations Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ANSC 4072. Advanced Equine Selection and Evaluation. 2 Hours.}

Advanced evaluation and selection of breeding and show animals, evaluation of breed types and show characteristics. Field trips to breeding operations. Competitive Judging team members come from this course and participation in competitive events will be required. Prior equine evaluation is not necessary, but instructor consent is required. Some Saturday activities. Prerequisite: ANSC 3072 or instructor consent. (Typically offered: Fall)

\section*{ANSC 410V. Special Topics in Animal Sciences. 1-4 Hour.}

Topics not covered in other courses or a more intensive study of specific topics in animal sciences. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ANSC 410VH. Honors Special Topics in Animal Sciences. 1-4 Hour.}

Topics not covered in other courses or a more intensive study of specific topics in animal sciences. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to ANSC 410 V .

\section*{ANSC 4123. Legal Issues in Animal Agriculture. 3 Hours.}

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulationfrom local to state to federal, depending on the issue- will be studied and discussed. (Typically offered: Spring Odd Years)
This course is cross-listed with AGEC 4123, POSC 4123.

\section*{ANSC 4142. Advanced Animal Handling Techniques. 2 Hours.}

This course is designed to familiarize students with handling techniques of a variety of animals, including cattle, sheep, horses, pigs, dogs, and others. Students will learn and practice handling, restraint, and common husbandry procedures with a variety of domestic species. The course will provide valuable preparation for careers in livestock management, vet medicine, animal-based research, and other fields in animal science. Prerequisite: Junior standing or consent. (Typically offered: Fall and Spring)

\section*{ANSC 4163. Companion Animal Nutrition. 3 Hours.}

This course is designed to focus on the digestive anatomy, physiology, and nutrient metabolism of non-herbivorous companion animals, primarily dogs and cats. Topics discussed will also include an overview of the pet food industry, its regulations and commonly utilized ingredients. Students will gain a deeper understanding of nutrition as it relates to life stages and various disease states that can affect both dogs and cats. This course will require a Saturday trip to one or two off campus facilities. Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Spring)
This course is cross-listed with POSC 4163.

\section*{ANSC 4173. Thoroughbred Horse Industry. 3 Hours.}

This course is designed to give you an overview of the Thoroughbred breed and industry. Students will gain an understanding of the Thoroughbred industry, it's history, and modern practices. Students will also gain an understanding of career potential in the Thoroughbred industry. Prerequisite: Instructor consent and Junior or Senior standing. (Typically offered: Spring Odd Years)

ANSC 4181. Kentucky Thoroughbred Tour. 1 Hour.
An overview of the Thoroughbred industry in central Kentucky through visiting major racetracks, world-class Thoroughbred breeding facilities, major equine veterinary practices, world class equine sales facilities, equine rehabilitation and retirement facilities, equine nutritional research facilities, and visit with horse trainers, veterinarians and farm managers. Successful completion of all course requirements and the tours will enable students to obtain 1 credit in animal science, network in the equine industry and critically assess potential careers. Prerequisite: Instructor consent. (Typically offered: Summer Odd Years)

ANSC 4252. Cow-Calf Management. 2 Hours.
Systems of cow-calf management including the practical application of the principles of breeding, feeding, and management to commercial and purebred beef cattle under Arkansas conditions. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall)

\section*{ANSC 4262. Swine Production. 2 Hours.}

Methods in producing purebred and commercial swine with specific emphasis on the management programs needed for profitable pork production in Arkansas. Prerequisite: Must be a student in Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall Even Years)

\section*{ANSC 4272. Sheep Production. 2 Hours.}

Purebred and commercial sheep management emphasizing the programs of major importance in lamb and wool production in Arkansas. Prerequisite: Must be a student in Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Spring)

\section*{ANSC 4282. Horse Production. 2 Hours.}

Production, use and care of horses and ponies including breeding, feeding, handling, and management. Lecture 1 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Junior standing or higher. (Typically offered: Spring)

\section*{ANSC 4291. Livestock Senior Judging Team Activity. 1 Hour.}

Training for membership on judging teams, through participation. (Typically offered: Fall)

\section*{ANSC 4303. Comparative Veterinary Anatomy. 3 Hours.}

Study of structures and principles of anatomy of major domestic species. The dog, horse, and cow will be used as models for anatomical structures and the application of anatomical knowledge in animal science; focus on veterinary applications. 3 hours of lecture each week. Spring semesters. Corequisite: Lab component. Prerequisite: ANSC 1033 or BIOL 1543, junior standing or instructor consent. (Typically offered: Fall and Spring)

\section*{ANSC 4452. Milk Production. 2 Hours.}

Principles of breeding, feeding, and management of dairy cattle will be studied. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall Odd Years)

\section*{ANSC 4482. Companion Animal Management. 2 Hours.}

The study and application of principles of domestication, nutrition, reproduction, parasitology, diseases, behavior, and husbandry management to companion animals. Dogs, cats, and exotic animals will be the species of primary interest. Practical problems of care and management of these species will be solved.
Prerequisite: BIOL 1543 or equivalent or consent of instructor. (Typically offered: Spring)

\section*{ANSC 4553. Forage-Ruminant Relations. 3 Hours.}

Chemical, physical, and botanical characteristics of forage plants, the dynamics of grazing, intake, digestion, behavior, and nutrient cycling at the plant-animal interface. CSES 1203 recommended. Corequisite: Lab component. Prerequisite: ANSC 3143. (Typically offered: Fall Even Years)

\section*{ANSC 4613. Muscle Growth and Development. 3 Hours.}

This is an undergraduate level course offering detailed insights into skeletal muscle morphological, physiological, cellular, and molecular factors affecting muscle structure and function, with special emphasis on cellular and molecular regulation of muscle growth and development, such as myo-, fibro-, and adipo-genesis. And the relationship between the properties of skeletal muscle and meat quality. ANSC 3033 and(or) CHEM 3813 are recommended as a prerequisite(s). (Typically offered: Fall) This course is cross-listed with POSC 4613.

\section*{ANSC 4652. Stocker-Feedlot Cattle Management. 2 Hours.}

Production and management systems for stocker and feed-lot cattle including practical applications of forage systems, feeding, health management and economics of production of these livestock. Prerequisite: Must be a student in the Bumpers College of Agricultural, Food and Life Sciences, ANSC 1033 and Junior standing or higher. (Typically offered: Fall)

\section*{ANSC 4662. Comparative Studies in Panamanian and US Agricultural} Practices. 2 Hours.
An experiential-learning course with an embedded trip to Panama designed to give students an overview of the agricultural industry and the impact of Panamanian history, culture and geography on agriculture and how this contrasts with practices in the US. Students will participate in a study tour to Panama where they will engage in learning experiences that explore the agriculture, history, and culture of this country. They will have the opportunity to visit and learn from successful producers of livestock and agricultural staples as well as tour the Panama canal and learn about Panamanian culture and history. Prerequisite: Instructors consent and approval from Study Abroad office. (Typically offered: Spring)

\section*{ANSC 4923. Brain \& Behavior. 3 Hours.}

Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory systems and the autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3033 or POSC 3033) or PSYC 2003 or BIOL 2213 or BIOL 2443 or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with POSC 4923.

\section*{ANSC 4993. Animal Science Capstone. 3 Hours.}

The purpose of this course is to provide students with an opportunity to apply and integrate knowledge from previous coursework in general education and animal science. This course is a multiple experience/ exercise capstone course and is designed for students to demonstrate mastery of a particular subject within Animal Science. Students will provide evidence of integrated knowledge through a variety of means including oral presentations, creation of a 1250-word reflective essay, writing a research abstract and applying problem solving and critical thinking skills. Prerequisite: Senior standing. (Typically offered: Fall and Spring)

ANSC 500V. Special Problems. 1-6 Hour.
Work in special problems of animal industry. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ANSC 5013. Domestic Animal Energetics. 3 Hours.}

Physical, physiological and biochemical aspects of energy metabolism of domestic animals and their applications to livestock production. Lecture 3 hours per week. Prerequisite: Graduate standing. (Typically offered: Spring Odd Years)

\section*{ANSC 5023. Legal Issues in Animal Agriculture. 3 Hours.}

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulationfrom local to state to federal, depending on the issue- will be studied and discussed. Graduate degree credit will not be given for both ANSC 4123 and ANSC 5023. (Typically offered: Spring Odd Years)

\section*{ANSC 5052. Cow-Calf Management. 2 Hours.}

Systems of cow-calf management including the practical application of the principles of breeding, feeding, and management to commercial and purebred beef cattle under Arkansas conditions. Graduate degree credit will not be given for both ANSC 4252 and ANSC 5052. (Typically offered: Fall)

ANSC 510V. Special Topics in Animal Sciences. 1-4 Hour.
Topics not covered in other courses or a more intensive study of specific topics in animal sciences. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

ANSC 5123. Advanced Animal Genetics. 3 Hours.
Specialized study of animal genetics. Lecture 3 hours per week. Prerequisite: ANSC 3123. (Typically offered: Fall Even Years)
This course is cross-listed with POSC 5123.

\section*{ANSC 5143. Biochemical Nutrition. 3 Hours.}

Interrelationship of nutrition and physiological chemistry; structure and metabolism of physiological significant carbohydrates, lipids, and proteins; integration of metabolism with provision of tissue fuels; specie differences in regulatory control of tissue and whole body metabolism of nutrients. Prerequisite: CHEM 3813. (Typically offered: Fall Even Years)
This course is cross-listed with POSC 5143.

\section*{ANSC 5152. Protein and Amino Acid Nutrition. 2 Hours.}

Students will be introduced to the basic processes of protein digestion, amino acid absorption, transport, metabolism, and utilization along with how biochemical function of proteins and their dynamic state affect nutritional status for animals and man. Prerequisite: CHEM 3813. (Typically offered: Spring Even Years)
This course is cross-listed with POSC 5152.

ANSC 5163. Companion Animal Nutrition. 3 Hours.
This course is designed to focus on the digestive anatomy, physiology, and nutrient metabolism of non-herbivorous companion animals, primarily dogs and cats. Topics discussed will also include an overview of the pet food industry, its regulations and commonly utilized ingredients. Students will gain a deeper understanding of nutrition as it relates to life stages and various disease states that can affect both dogs and cats. This course will require a Saturday trip to one or two off campus facilities. Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Spring) This course is cross-listed with POSC 5163.

ANSC 5262. Swine Production. 2 Hours.
Methods in producing purebred and commercial swine with specific emphasis on the management programs needed for profitable pork production in Arkansas. Graduate degree credit will not be given for both ANSC 4262 and ANSC 5262. (Typically offered: Fall Even Years)

\section*{ANSC 5272. Sheep Production. 2 Hours.}

Purebred and commercial sheep management emphasizing the programs of major importance in lamb and wool production in Arkansas. Graduate degree credit will not be given for both ANSC 4272 and ANSC 5272. (Typically offered: Spring)

\section*{ANSC 5283. Horse Production. 3 Hours.}

Production, use and care of horses and ponies including breeding, feeding, handling, and management. Lecture 2 hours, laboratory 3 hours per week. Graduate degree credit will not be given for both ANSC 4282 and ANSC 5283. Corequisite: Lab component. (Typically offered: Spring)
ANSC 5452. Milk Production. 2 Hours.
Principles of breeding, feeding, and management of dairy cattle will be studied. Graduate degree credit will not be given for both ANSC 4452 and ANSC 5452. (Typically offered: Fall Odd Years)

\section*{ANSC 5482. Companion Animal Management. 2 Hours.}

The study and application of principles of domestication, nutrition, reproduction, parasitology, diseases, behavior, and husbandry management to companion animals. Dogs, cats, and exotic animals will be the species of primary interest. Practical problems of care and management of these species will be solved. Graduate degree credit will not be given for both ANSC 4482 and ANSC 5482. Prerequisite: BIOL 1543 or equivalent or consent of instructor. (Typically offered: Spring)

\section*{ANSC 5553. Forage-Ruminant Relations. 3 Hours.}

Advanced chemical, physical, and botanical characteristics of forage plants, the dynamics of grazing, intake and digestion, and techniques of measuring forage utilization and systems analysis at the plant-animal interface. Lecture 3 hours per week. CSES 1203 recommended. Corequisite: Lab component. Prerequisite: ANSC 3143. (Typically offered: Fall Even Years)

\section*{ANSC 5613. Muscle Growth and Development. 3 Hours.}

This is a graduate level course offering detailed insights into skeletal muscle morphological, physiological, cellular and molecular factors affecting muscle structure and function, with special emphasis on cellular and molecular regulation of muscle growth and development, such as myo-, fibro-, and adipo-genesis. And the relationship between the properties of skeletal muscle and meat quality. Graduate students will focus on the scientific reading, problem solving, and generating research ideas. ANSC 3033, CHEM 3813 or ANSC 5143 or an equivalent course are recommended as a prerequisite. (Typically offered: Fall)
This course is cross-listed with POSC 5613.
ANSC 5652. Stocker-Feedlot Cattle Management. 2 Hours.
Production and management systems for stocker and feed-lot cattle including practical applications of forage systems, feeding, health management and economics of production of these livestock. Graduate degree credit will not be given for both ANSC 4652 and ANSC 5652. (Typically offered: Fall)

ANSC 5662. Comparative Studies in Panamanian and US Agricultural Practices. 2 Hours.
An experiential-learning course with an embedded trip to Panama designed to give students an overview of the agricultural industry and the impact of Panamanian history, culture and geography on agriculture and how this contrasts with practices in the US. Students will participate in a study tour to Panama where they will engage in learning experiences that explore the agriculture, history, and culture of this country. They will have the opportunity to visit and learn from successful producers of livestock and agricultural staples as well as tour the Panama canal and learn about Panamanian culture and history. Prerequisite: Instructor consent and approval from Study Abroad office. (Typically offered: Spring)

ANSC 5743L. Advanced Analytical Methods in Animal Sciences Laboratory. 3 Hours.
Introduction into theory and application of current advanced analytical techniques used in animal research. Two 3-hour laboratory periods per week. (Typically offered: Fall)
This course is cross-listed with POSC 5743L.
ANSC 5853. Advanced Meats Technology. 3 Hours.
An intensive study of processed meats, relating the science, technology, and quality of further processed meat and poultry products. Product development, sensory and chemical analysis, microbiology, nutritional aspects, and product labeling are covered. Prerequisite: POSC 4314 or ANSC 3613. (Typically offered: Spring Even Years)

\section*{ANSC 5901. Seminar. 1 Hour.}

Critical review of the current scientific literature pertaining to the field of animal science. Oral reports. Lecture 1 hour per week. Prerequisite: Senior standing. (Typically offered: Fall)

ANSC 5923. Brain \& Behavior. 3 Hours.
Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory systems and the autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3033 or POSC 3033) or PSYC 2003 or BIOL 2213 or BIOL 2443 or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with POSC 5923.
ANSC 5932. Cardiovascular Physiology of Domestic Animals. 2 Hours. Cardiovascular physiology, including mechanisms of heart function and excitation, and blood vessel mechanisms associated with the circulatory system in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC 3033 or ANSC 3033. (Typically offered: Fall) This course is cross-listed with POSC 5932.

ANSC 5943. Endocrine Physiology of Domestic Animals. 3 Hours.
Endocrine physiology, including mechanisms of hormone secretion, function, and regulation. Mechanisms associated with the endocrine system will be discussed for domestic animals and poultry. Prerequisite: POSC 3033 or ANSC 3033. Pre- or Corequisite: CHEM 3813. (Typically offered: Spring Even Years)

ANSC 5952. Respiratory Physiology of Domestic Animals. 2 Hours.
Respiratory physiology, including mechanisms of lung function and gas exchange. Mechanisms associated with the interaction of the respiratory system with other bodily systems in domestic animals and poultry will be discussed. Lecture 3 hours; drill 1 hour per week for first 8 weeks of semester. Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC 3033 or ANSC 3033. (Typically offered: Spring)
This course is cross-listed with POSC 5952.

ANSC 5962. Gastrointestinal/Digestive Physiology of Domestic Animals. 2 Hours.
Gastrointestinal and hepatic physiology, including mechanisms of digestion, absorption of nutrients with emphasis on cellular control mechanisms in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component.
Prerequisite: POSC 3033 or ANSC 3033. (Typically offered: Fall)
This course is cross-listed with POSC 5962.
ANSC 5972. Renal Physiology. 2 Hours.
Renal physiology, including mechanisms of renal clearance with emphasis on cellular control mechanisms in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC 3033 or ANSC 3033. (Typically offered: Spring)
ANSC 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ANSC 6143. Minerals in Animal Nutrition. 3 Hours.}

Mineral nutrients, their sources and functions, as related to nutrition of domestic animals. Lecture 3 hours per week. Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Fall; Spring Even Years)

\section*{ANSC 6243. Ruminant Nutrition. 3 Hours.}

Anatomy and physiology of the rumen. The nutrient requirements of microbial organisms and the relation of microbial digestion in the rumen to the nutrition of cattle, sheep and other ruminants. Lecture 3 hours per week. Prerequisite: Graduate standing. (Typically offered: Fall Odd Years)

\section*{ANSC 6343. Vitamin Nutrition and Metabolism. 3 Hours.}

The vitamins required for humans and domestic animals for a healthy life with emphasis on absorption, transport, metabolism, biopotency, mechanism of action, tissue retention and turnover. Prerequisite: CHEM 3813. (Typically offered: Fall Odd Years)
This course is cross-listed with FDSC 6343, POSC 6343.
ANSC 6833. Reproduction in Domestic Animals. 3 Hours.
Comprehensive review of current theory of reproductive function in domestic animals. Lecture 3 hours per week. Prerequisite: ANSC 3433. (Typically offered: Spring Even Years)
ANSC 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Anthropology (ANTH)} Courses
ANTH 1011L. Introduction to Biological Anthropology Laboratory. 1 Hour. Laboratory exercises illustrating concepts of physical anthropology. Corequisite: ANTH 1013. (Typically offered: Fall)

ANTH 1011M. Honors Introduction to Biological Anthropology Laboratory. 1 Hour.
Laboratory exercises illustrating concepts of physical anthropology. Corequisite: ANTH 1013H and honors candidacy. (Typically offered: Fall)
This course is equivalent to ANTH 1011L.
ANTH 1013. Introduction to Biological Anthropology. 3 Hours.
An introduction to the field of biological anthropology using evolution and human variation as unifying concepts. Areas include human genetics, race, speciation, primate and human evolution, and human variation and adaptation. Corequisite: ANTH 1011L. (Typically offered: Spring and Summer)

ANTH 1013H. Honors Introduction to Biological Anthropology. 3 Hours.
An introduction to the field of biological anthropology using evolution and human variation as unifying concepts. Areas include human genetics, race, speciation, primate and human evolution, and human variation and adaptation. Corequisite: ANTH 1011M. (Typically offered: Fall and Spring)
This course is equivalent to ANTH 1013.
ANTH 1023. Introduction to Cultural Anthropology (ACTS Equivalency = ANTH 2013). 3 Hours.

Introduction to the nature of culture and its influence on human behavior and personality: comparative study of custom, social organization, and processes of change and integration of culture. Corequisite: Drill component. (Typically offered: Fall, Spring and Summer)

ANTH 1023H. Honors Introduction to Cultural Anthropology. 3 Hours.
Introduction to the nature of culture and its influence on human behavior and personality; comparative study of custom, social organization, and processes of change and integration of culture. (Typically offered: Fall and Spring)
This course is equivalent to ANTH 1023.
ANTH 1033. Introduction to Archaeology. 3 Hours.
Archaeology studies the human past through contextual analysis of artifacts, archaeological sites, and landscapes. This course introduces archaeological methods and theories, significant discoveries and current debates in the discipline. Corequisite: Lab component. (Typically offered: Fall and Spring)

\section*{ANTH 2013. Introduction to Latin American Studies. 3 Hours.}

This course provides an interdisciplinary introduction to Latin America. Drawing on Latin American literature, history, sociology, and political science, the course examines the broad forces that have shaped the region. (Typically offered: Irregular)
ANTH 3003. World Prehistory. 3 Hours.
Survey of the prehistoric and early historic cultures of the Americas, Asia, and Africa. (Typically offered: Irregular)
ANTH 3013. Myths, Mysteries, and Manipulations of the Past. 3 Hours. Examines many archaeological fantasies, evaluates the evidence for and against such fringe theories, and confronts pseudoscience in everyday life. Dispels popular fantasies and "fake news" about the past. (Typically offered: Fall Odd Years)

\section*{ANTH 3023. Approaches to Archeology. 3 Hours.}

Study of the field of archeology including method, theory, analysis and interpretation with substantive worldwide examples. Prerequisite: ANTH 1033. (Typically offered: Spring)

ANTH 3043. Bones, Bodies, and Brains in Evolutionary Perspective. 3 Hours.
This course will review the anatomy of the human body, comparing this anatomy with primates, mammals, and vertebrates, and it will consider how the major features of the human body emerged throughout evolution. (Typically offered: Irregular) This course is cross-listed with BIOL 3043.

\section*{ANTH 3123. The Anthropology of Religion. 3 Hours.}

An exploration of rituals, symbols, and rules that shape religious life. Religion is viewed broadly, considering activities that invoke powers beyond the reach of ordinary senses. Examining a variety of cultures, we explore what people say and do as they participate in activities such as magic, healing, pilgrimage, and contemporary religious movements. (Typically offered: Spring)
ANTH 3213. Indigenous Peoples of North America: Anthropological Perspectives. 3 Hours.
An exploration of indigenous societies and cultures of North America from an anthropological perspective. Using examples from diverse Native Nations from the time of European contact to the present, we will examine colonialism and resistance, indigenous cosmologies, memory culture and oral tradition, and the politics of representation. (Typically offered: Irregular)

ANTH 3263. Indians of Arkansas and the South. 3 Hours.
Study of the traditional lifeways and prehistoric backgrounds of Indians living in the Southern United States, including Arkansas. (Typically offered: Spring Odd Years)
ANTH 3323. Evolution of the Human Mating System. 3 Hours.
Examines basic principles governing the evolution of sexual behavior and anatomy in mammals, compares the features of human mating systems to those of primates, and explores models for the origin of fundamental features of the human social system. (Typically offered: Fall)

\section*{ANTH 3421L. Human Osteology Laboratory. 1 Hour.}

Laboratory exercises illustrating concepts of human osteology. Corequisite:
ANTH 3423. (Typically offered: Spring)
ANTH 3423. Human Osteology. 3 Hours.
Study of the human skeleton, identification of bones, allometric growth, sexual dimorphism, osteological genetic inheritance and environmental stresses. Lectures and demonstration. Corequisite: ANTH 3421L. (Typically offered: Spring)
ANTH 3433. Human Evolution. 3 Hours.
A study of hominid evolution from origin to the present, including trends in comparative primate evolution and functional development of human form as a result of cultural and biological interaction. (Typically offered: Fall)

\section*{ANTH 3473. North American Prehistory. 3 Hours.}

Survey of the aboriginal prehistory of the North American Continent north of Mexico. (Typically offered: Irregular)

\section*{ANTH 3533. Medical Anthropology. 3 Hours.}

Survey of the interrelationship of human biology, culture and environment as reflected in disease experience from an evolutionary and cross cultural perspective. Special emphasis on stress. (Typically offered: Irregular)

ANTH 3543. Geospatial Applications and Information Science. 3 Hours.
An introduction to the methods and theory underlying the full range of geographic information science and collateral areas - including GNSS, remote sensing, cadastral, spatial demographics and others. (Typically offered: Fall and Spring) This course is cross-listed with GEOS 3543.

\section*{ANTH 3553. Religion in Latin America. 3 Hours.}

Examines contemporary implications of Latin America's unique religious heritage. An exploration of multiple Latin American religious traditions, with sustained focus on key theoretical concerns: conversion, vernacular vs. orthodox expressions, the blending of indigenous and European cosmologies, devotion and ritual, and the articulation of ethnic, gendered, and religious identities. (Typically offered: Irregular) This course is cross-listed with LALS 3553.

\section*{ANTH 3563. Culture and Medicine. 3 Hours.}

Study of health and medicine within cultural contexts, including attention to crosscultural healers and healing systems. Special emphasis on biomedicine as a cultural system. (Typically offered: Irregular)

\section*{ANTH 3583. Body and Identity. 3 Hours.}

This course explores personal, social and cultural constructions and performances of the body and identity, highlighting key intersections of embodiment including gender, race, sexuality and abilities. (Typically offered: Irregular)
ANTH 3593. Bioarchaeology: Bodies of the Past. 3 Hours.
Bioarchaeology is the study of human remains recovered from archaeological contexts. An overview of the field's history, ethical considerations, and relationship to the broader social sciences and STEM fields. Focuses on interpreting an individual's lived experience from their skeletal remains and mortuary context to reconstruct past phenomena. (Typically offered: Spring Odd Years)

ANTH 3713. Extinction: Bad Genes or Bad Luck?. 3 Hours.
Explores mass extinctions through the history of life on Earth, with particular emphasis on the Quaternary (the last 2.6 million years) where hominins, particularly humans have played a dominant role in shaping the ecosystems we experience today. (Typically offered: Fall and Spring)

\section*{ANTH 3903. Topics in Anthropology. 3 Hours.}

Covers a special topic or issue. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{ANTH 3923H. Honors Colloquium. 3 Hours.}

Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in anthropology). (Typically offered: Irregular) May be repeated for degree credit.

ANTH 399VH. Honors Thesis. 1-6 Hour.
Honors thesis. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

\section*{ANTH 4013. History of Anthropological Thought. 3 Hours.}

Detailed consideration of anthropological theory through study of its historical development. The research paper fulfills the Fulbright College Writing Requirement for anthropology majors. Prerequisite: ANTH 1023. (Typically offered: Fall)

ANTH 4043. Ancient Cities. 3 Hours.
Explores pre-modern cities from the earliest in the world to those on the brink of industrialization. Employs anthropological archaeology as its primary approach, but also draws upon formal/functional analysis of urban plans, historical documentation, urban planning and history, and semiotics to interpret the built-environment as a form of non-verbal communication. (Typically offered: Spring Even Years)

ANTH 4053. Anthropology of the City. 3 Hours.
Explores the implications of several pivotal urban and cultural trends and how representations of the city have informed dominant ideas about city space, function, and meaning. (Typically offered: Irregular)

ANTH 4093. The Archeology of Death. 3 Hours.
Study of the analysis and interpretation of archeological mortuary remains and sites. Key archeological and anthropological sources that have influenced major theoretical developments are reviewed. (Typically offered: Irregular)
ANTH 4143. Ecological Anthropology. 3 Hours.
Anthropological perspectives on the study of relationships among human populations and their ecosystems. (Typically offered: Irregular)
ANTH 4256. Archeological Field Session. 6 Hours.
Practical field and laboratory experiences in archeological research. (Typically offered: Summer) May be repeated for up to 12 hours of degree credit.

ANTH 4263. Identity and Culture in the U.S.-Mexico Borderlands. 3 Hours. An exploration of the interplay between Latino/a, Mexican, Anglo, and Native American identities and cultures along the U.S.-Mexico border. Course examines identity formation, hybridity, social tension, marginalization, race and gender, from an anthropological perspective, paying special attention to the border as theoretical construct as well as material reality. (Typically offered: Irregular) This course is cross-listed with LALS 4263.

ANTH 4273. Photography for Fieldwork. 3 Hours.
This class explores the use of photographic images as both data and representational tools in anthropological research, emphasizing the ethical, theoretical, and methodological issues involved. (Typically offered: Irregular)

\section*{ANTH 4283. Survey in Ethnographic Film. 3 Hours.}

Survey of the development and evolution of ethnographic film, based on class screenings to build familiarity, vocabulary, and literacy with this branch of visual anthropology. (Typically offered: Irregular)
ANTH 4353. Laboratory Methods in Archeology. 3 Hours.
Theory and practice of describing, analyzing, and reporting upon archeological materials. (Typically offered: Irregular)

ANTH 4363. Museums, Material Culture, and Popular Imagination. 3 Hours. Museums as ideological sites and thus as sites of potential contestation produce cultural and moral systems that legitimate existing social orders. This course will focus on strategies of representation and the continuous process of negotiating social and cultural hierarchies with and through objects that are displayed. (Typically offered: Fall)

\section*{ANTH 4443. Cultural Resource Management I. 3 Hours.}

Concentrated discussion of management problems relative to cultural resources, including review and interpretation of relevant federal legislation, research vs. planning needs, public involvement and sponsor planning, and assessment of resources relative to scientific needs. No field training involved; discussion will deal only with administrative, legal and scientific management problems. (Typically offered: Spring) May be repeated for degree credit.

ANTH 448V. Individual Study of Anthropology. 1-6 Hour.
Reading course for advanced students with special interests in anthropology. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ANTH 4523. Dental Science. 3 Hours.}

Introduction to the study of the human dentition including its anatomy, morphology, growth and development, and histology. (Typically offered: Fall)

\section*{ANTH 4533. Middle East Cultures. 3 Hours.}

Study of the peoples and cultures of the Middle East; ecology, ethnicity, economics, social organizations, gender, politics, religion, and patterns of social change.
(Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

\section*{ANTH 4553. Introduction to Raster GIS. 3 Hours.}

Theory, data structures, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. (Typically offered: Fall)
This course is cross-listed with GEOS 4553.
ANTH 4583. Cultures of Africa. 3 Hours.
An exploration of the people and places of Africa from a variety of anthropological perspectives. Classic and contemporary works will be studied in order to underscore the unity and diversity of African cultures, as well as the importance African societies have played in helping us understand culture/society throughout the world. (Typically offered: Fall)
This course is cross-listed with AAST 4583.
ANTH 4613. Primate Adaptation and Evolution. 3 Hours.
Introduction to the biology of the order of Primates. This course considers the comparative anatomy, behavioral ecology and paleontology of our nearest living relatives. Prerequisite: ANTH 1013 (or BIOL 1543 and BIOL 1541L). (Typically offered: Spring)
This course is cross-listed with BIOL 4613.

\section*{ANTH 4703. Mammalian Evolution and Osteology. 3 Hours.}

This course will focus on describing the evolutionary history of mammals, a group of vertebrates that include over 5,000 species in 29 orders, and will provide an overview of living species and their identifying features. Prerequisite: ANTH 1013 and ANTH 1011L or BIOL 1543 and BIOL 1541L or instructor consent. (Typically offered: Irregular)

\section*{ANTH 4903. Seminar in Anthropology. 3 Hours.}

Research, discussion, and projects focusing on a variety of topics. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{ANTH 4913. Topics of the Middle East. 3 Hours.}

Covers a special topic or issue. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ANTH 500V. Advanced Problems in Anthropology. 1-18 Hour.}

Individual research at graduate level on clearly defined problems or problem areas. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

\section*{ANTH 5053. Quaternary Environments. 3 Hours.}

An interdisciplinary study of the Quaternary Period including dating methods, deposits, soils, climates, tectonics, and human adaptation. Lecture 2 hours, laboratory 2 hours per week. (Typically offered: Fall)
This course is cross-listed with ENDY 5053, GEOS 5053.
ANTH 5103. Applications of Cultural Method and Theory. 3 Hours.
Review of the nature and history of cultural anthropology; recent theories and practical implications and applications of various methods of acquiring, analyzing and interpreting cultural anthropological data. (Typically offered: Fall)

\section*{ANTH 5113. Anthropology of the City. 3 Hours.}

Examines cities as both products of culture, and sites where culture is made and received. Explores the implications of several pivotal urban and cultural trends and the way in which representations of the city have informed dominant ideas about city space, function, and feel. (Typically offered: Irregular)

\section*{ANTH 5143. Ecological Anthropology. 3 Hours.}

Anthropological perspectives on the study of relationships among human populations and their ecosystems. Graduate degree credit will not be given for both ANTH 4143 and ANTH 5143. (Typically offered: Irregular)

ANTH 5153. Topics in Anthropology. 3 Hours.
Graduate level seminar with varied emphasis on topics relating to cultural anthropology. (Typically offered: Irregular) May be repeated for degree credit.

ANTH 5203. Applications of Archeological Method and Theory. 3 Hours. Review of the nature and history of archeology; recent theories and practical implications and applications of various methods of acquiring, analyzing, and interpreting archeological data. (Typically offered: Fall)

\section*{ANTH 5256. Archeological Field Session. 6 Hours.}

Practical field and laboratory experiences in archeological research. Graduate degree credit will not be given for both ANTH 4256 and ANTH 5256. (Typically offered: Summer)

\section*{ANTH 5263. Indians of Arkansas and the South. 3 Hours.}

Study of the traditional lifeways and prehistoric backgrounds of Indians living in the southern United States, including Arkansas. (Typically offered: Spring Odd Years)

ANTH 5273. Photography for Fieldwork. 3 Hours.
This class explores the use of photographic images as both data and representational tools in anthropological research, emphasizing the ethical, theoretical, and methodological issues involved. Graduate degree credit will not be given for both ANTH 4273 and ANTH 5273. (Typically offered: Irregular)

\section*{ANTH 5283. Survey in Ethnographic Film. 3 Hours.}

Survey of the development and evolution of ethnographic film, based on class screenings to build familiarity, vocabulary, and literacy with this branch of visual anthropology. Graduate degree credit will not be given for both ANTH 4283 and ANTH 5283. (Typically offered: Irregular)

ANTH 5293. Identity and Culture in the U.S.-Mexico Borderlands. 3 Hours. An exploration of the interplay between Latino/a, Mexican, Anglo, and Native American identities and cultures along the U.S.-Mexico border. Course examines identity formation, hybridity, social tension, marginalization, race and gender, from an anthropological perspective, paying special attention to the border as theoretical construct as well as material reality. Graduate degree credit will not be given for both ANTH 4263 and ANTH 5293. (Typically offered: Irregular)

ANTH 5303. Applications of Method and Theory in Biological Anthropology. 3 Hours.
Review of the nature and history of biological anthropology; recent theories and the practical implications and applications of various methods of acquiring, analyzing, and interpreting data. (Typically offered: Irregular)

ANTH 5313. Laboratory Methods in Archeology. 3 Hours.
Theory and practice of describing, analyzing, and reporting upon archeological materials. Graduate degree credit will not be given for both ANTH 4353 and ANTH 5313. (Typically offered: Irregular)

ANTH 5363. Museums, Material Culture, and Popular Imagination. 3 Hours. Museums as ideological sites and thus as sites of potential contestation produce cultural and moral systems that legitimate existing social orders. This course will focus on strategies of representation and the continuous process of negotiating social and cultural hierarchies with and through objects that are displayed. Graduate degree credit will not be given for both ANTH 4363 and ANTH 5363. (Typically offered: Fall)

ANTH 5413. Bioarcheology Seminar. 3 Hours.
Intensive coverage of bioarcheological method and theory with the context of both academic and cultural resources management research. (Typically offered: Spring Odd Years)

\section*{ANTH 5443. Cultural Resource Management I. 3 Hours.}

Concentrated discussion of management problems relative to cultural resources, including review and interpretation of relevant federal legislation, research vs. planning needs, public involvement and sponsor planning, and assessment of resources relative to scientific needs. No field training involved; discussion will deal only with administrative, legal, and scientific management problems. (Typically offered: Irregular)

\section*{ANTH 548V. Individual Study of Anthropology. 1-6 Hour.}

Reading course for advanced students with special interests in anthropology. Graduate degree credit will not be given for both ANTH 448 V and ANTH 548V. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ANTH 5523. Dental Science. 3 Hours.}

Introduction to the study of the human dentition including its anatomy, morphology, growth and development, and histology. Graduate degree credit will not be given for both ANTH 4523 and ANTH 5523. (Typically offered: Fall)

\section*{ANTH 5553. Introduction to Raster GIS. 3 Hours.}

Theory, data structures, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. Credit will not be given for both ANTH 4553 and ANTH 5553. (Typically offered: Fall)
This course is cross-listed with GEOS 5453.

\section*{ANTH 5623. Primate Adaptation and Evolution. 3 Hours.}

Introduction to the biology of the order of Primates. This course considers the comparative anatomy, behavioral ecology and paleontology of our nearest living relatives. Credit will not be given for both ANTH 4613 and ANTH 5623. (Typically offered: Spring)
This course is cross-listed with BIOL 5613.

\section*{ANTH 5703. Mammalian Evolution and Osteology. 3 Hours.}

This course will focus on describing the evolutionary history of mammals, a group of vertebrates that include over 5,000 species in 29 orders, and will provide an overview of living species and their identifying features. Credit will not be given for both ANTH 4703 and ANTH 5703. (Typically offered: Irregular)
This course is cross-listed with BIOL 5883.

ANTH 5813. Ethnographic Approaches to the Past. 3 Hours.
Review of the uses of ethnographic data in the reconstruction and interpretation of past cultures and cultural processes, with particular emphasis on the relationships between modern theories of culture and archeological interpretation. Credit will not be given for both ANTH 4813 and ANTH 5813. (Typically offered: Irregular)

\section*{ANTH 582V. Applied Visual Research. 1-6 Hour.}

This class provides hands-on skill and training conducting visually informed fieldwork designed to help represent unique cultural settings, experience, and heritage. Credit will not be given for both ANTH 482V and ANTH 582V. (Typically offered: Irregular)

\section*{ANTH 5903. Seminar in Anthropology. 3 Hours.}

Research, discussion, and projects focusing on a variety of topics. Credit will not be given for both ANTH 4903 and ANTH 5903. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{ANTH 5913. Topics of the Middle East. 3 Hours.}

Covers a special topic or issue. Credit will not be given for both ANTH 4913 and ANTH 5913. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ANTH 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ANTH 6033. Society and Environment. 3 Hours.}

This course examines the complex interrelationships between human societies and the natural environment. Drawing on diverse and interdisciplinary perspectives in archaeology, ethnography, history, geography, and palaeo-environmental studies, readings and discussion will explore the co-production of social and environmental systems over time. (Typically offered: Spring) May be repeated for degree credit. This course is cross-listed with ENDY 6033.

ANTH 610V. Internship. 1-18 Hour.
Internship. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

ANTH 6813. Seminar: Cultural Anthropology. 3 Hours.
Variable topics in Anthropology will be explored in depth. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ANTH 6833. Seminar: Biological Anthropology. 3 Hours.
Various topics in Biological Anthropology will be explored in depth. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ANTH 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{Apparel Merchandising and Product Development (AMPD)}

\section*{Courses}

\section*{AMPD 1013. Introduction to Clothing Concepts. 3 Hours.}

Origin of dress, the evolution of fashion as an economic power, the sociological and psychological aspects of clothing in various cultures, aesthetics of dress, selection and consumption of clothing. Lecture 3 hours per week. (Typically offered: Fall and Spring)

\section*{AMPD 1013H. Honors Introduction to Clothing Concepts. 3 Hours.}

Origin of dress, the evolution of fashion as an economic power, the sociological and psychological aspects of clothing in various cultures, aesthetics of dress, selection and consumption of clothing. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to AMPD 1013.

AMPD 1023. Introduction to Apparel Production. 3 Hours.
Course focuses on basic principles of apparel production and analysis of garment components of mass produced apparel. Students utilize computer generated designs in the production process. Laboratory 6 hours per week. Prerequisite: HESC or AMPD students only. (Typically offered: Fall and Spring)

AMPD 2013. Fashion, Buying and Promotion in a Global Market. 3 Hours. Fashion components, marketing theories and practices as they specifically relate to apparel, home goods, and other design driven products in the global market. Focus on principles and techniques on how fashion marketers develop and apply marketing strategies that meet consumer needs at a profit. International buying and promotional aspects of the apparel industry are emphasized. Lecture 3 hours per week. Prerequisite: AMPD major and AMPD 1013. (Typically offered: Fall and Spring)

AMPD 2013H. Honors Fashion, Buying and Promotion in a Global Market. 3 Hours.
Fashion components, marketing theories and practices as they specifically relate to apparel, home goods, and other design driven products in the global market. Focus on principles and techniques on how fashion marketers develop and apply marketing strategies that meet consumer needs at a profit. International buying and promotional aspects of the apparel industry are emphasized. Lecture 3 hours per week. Prerequisite: AMPD major, AMPD 1013 and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to AMPD 2013.
AMPD 2033. Computer Based Methods for Apparel. 3 Hours.
This course is designed to give students basic experience with CAD (computer aided design) apparel industry software in a computer laboratory environment. Prerequisite: AMPD majors only, AMPD 1013, AMPD 1023 and ASTM 2903 or ISYS 1123 or equivalent. (Typically offered: Fall and Spring)
AMPD 2053. Introduction to Textile Science. 3 Hours.
Textile fibers and fabrics, their structure, properties, manufacture, wearing qualities and methods of laundering, finishing, and dyeing. Artistic and economic selection of materials for clothing and household furnishings. Lecture 3 hours per week. Prerequisite: HESC, AMPD or FCSE students only. (Typically offered: Fall and Spring)
AMPD 2063. Quality Assessment of Apparel. 3 Hours.
Study of apparel from the perspective of structure, aesthetics, cost and expected performance of the finished product. Lecture 2 hours per week, lab 2 hours per week. Prerequisite: AMPD 1023 and AMPD 2053. (Typically offered: Fall and Spring)

\section*{AMPD 2073. Flat Pattern Drafting. 3 Hours.}

A study of product development and production through flat pattern manipulation and the related vocabulary necessary to communicate professionally within the industry. Pre- or Corequisite: AMPD 2063. (Typically offered: Fall and Spring)

AMPD 3033. Merchandising Math for the Apparel Industry. 3 Hours.
Exploration of activities associated with the procurement of fashion apparel. A fashion analysis is directed toward apparel demands and the creation of a fashion statement by the use of specific quantitative skills. Course follows fashion item from the designer to the store. Lecture 3 hours per week. Prerequisite: MATH 1203 or three credit hours of STAT and AMPD 2013. (Typically offered: Fall and Spring)

\section*{AMPD 3043. Fashion Brand Management. 3 Hours.}

This course focuses on the fundamental elements of brand, the concept of brand equity, brand relationships with consumers, and the implications of technologies on the branding process in the fashion industry. The course topics include branding basics, the concept of brand equity, brand image, brand positioning, brand communications, the role of emotional and sensory experiences in fashion branding, luxury fashion brands, sustainable fashion branding management, and technology driven branding. Prerequisite: AMPD 2013. (Typically offered: Fall and Spring)

\section*{AMPD 3053. Computer Aided Textile Design. 3 Hours.}

This course is designed to give students advanced skills in textile design using industry based computer aided design (CAD) software. Prerequisite: AMPD 2033 and AMPD 2053 or instructor consent. (Typically offered: Fall and Spring)

\section*{AMPD 3063. Digital Apparel Production. 3 Hours.}

Use of industry specific computer aided software to perform pattern making, technical package, marketing, and other cross-functional team communication materials. Pre- or Corequisite: AMPD 2073, AMPD 2033, and AMPD 2063. (Typically offered: Fall and Spring)
AMPD 3071. Apparel Merchandising and Product Development Pre-Internship. 1 Hour.
A study of job descriptions, responsibilities at the management level, structural operations, work procedures, job performance evaluations, job application, the resume, and portfolio development in preparation for AMPD 4083, AMPD Internship. Lecture 1 hour per week. Prerequisite: AMPD majors only. (Typically offered: Spring)

\section*{AMPD 3203. Fashion Styling - UARC. 3 Hours.}

This course exposes students to the essential skills necessary for success in the field of fashion styling. Future stylists will learn the criteria to produce striking images for all visual media including entertainment, music, print and advertising. In addition, they will gain an understanding of the interdisciplinary collaborative nature within the creative process while working with directors, photographers and production crew. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy. Prerequisite: AMPD majors only. (Typically offered: Fall)

\section*{AMPD 3213. Trend Forecasting - UARC. 3 Hours.}

Forecasting is one of the most rapidly growing research areas in fashion as well as in many other industry fields. Anticipating consumer demand is crucial and the ability to trend forecast is a skill required for product development. This course will enable students to develop trend forecasts by analyzing the global environment they live in using varied methodologies. The students will learn how to navigate between existing predictions and translate them for product development. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy. Prerequisite: AMPD majors only. (Typically offered: Fall)

\section*{AMPD 4011. History of Apparel Through Film to 1900. 1 Hour.}

This course uses historic costume films to trace the evolution of clothing from ancient Egypt to the Twentieth Century. Emphasis is placed on societal aspects such as politics, religion, economy, technology, education, sports, class structure, and gender roles, and how they affect and change dress. Web-based course. (Typically offered: Fall and Spring)
AMPD 4023. Merchandising Application for the Apparel Industry. 3 Hours. Application of merchandising theory, principles and practices in a capstone class. An in depth study of innovative apparel business concepts as applied to manufacturers and retailers of apparel including apparel classification, seasonal cycles, stock emphasis, assortment strategies, target customers, and apparel trends. Includes an overview of marketing communication including advertising, personal selling, and sales promotion. Prerequisite: AMPD 3033 and AMPD 3043 and completed 75 credit hours or instructor consent. (Typically offered: Fall and Spring)

\section*{AMPD 4053. Historic and Contemporary Apparel. 3 Hours.}

This course traces the evolution of clothing from ancient times to the twentieth century with emphasis upon Western civilization and includes the study of contemporary fashion as a social force including the origin, scope, theory, and history of the fashion business, the materials of fashion, the fashion producers, auxiliary fashion enterprises, designers, fashion leaders, and leading market. Cultural and economic factors affecting dress, adornment and customs associated dress will be stressed. The Lecture 3 hours per week. Prerequisite: Completed 75 credit hours or instructor consent. (Typically offered: Fall and Spring)

\section*{AMPD 4063. Advanced Apparel Production. 3 Hours.}

An advanced study of product development incorporating technology used in the industry for a career in fashion merchandising and/or product development in a computer laboratory environment. Laboratory 6 hours per week. Prerequisite: AMPD 2063 and AMPD 2073. (Typically offered: Fall and Spring)

AMPD 4063H. Honors Advanced Apparel Production. 3 Hours.
An advanced study of product development incorporating technology used in the industry for a career in fashion merchandising and/or product development in a computer laboratory environment. Laboratory 6 hours per week. Prerequisite: AMPD 2033, AMPD 2063 and AMPD 2073 and honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to AMPD 4063.
AMPD 4073. Fashion Show Theory and Production. 3 Hours.
A study of the fashion show including the history, purpose, future of, and elements necessary to produce a successful show. A study of fashion show production through experiential project-based learning and committee membership planning and implementing a fashion show. (Typically offered: Spring)
AMPD 4083. Apparel Merchandising and Product Development Internship. 3 Hours.
A practical experience in a retail store or in a work situation related to the apparel industry to gain insight into the field of apparel merchandising and operations. Prerequisite: Junior standing and 2.50 cum GPA and AMPD 2013, AMPD 2033, AMPD 2063, AMPD 2073, AMPD 3033, AMPD 3043, AMPD 3071, COMM 1313 and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

AMPD 4093. Apparel Merchandise Planning and Inventory Control. 3 Hours. Describes today's challenges for both apparel manufacturers and retailers in meeting the consumer's demands for the right products at the right prices - and at the right times. Follows the evolution of the merchandising function with emphasis on production efficiency, highlighting the philosophies of industry executives and the effective integration of the merchandising, store design, marketing, the apparel supply chain and manufacturing functions along the way. Prerequisite: (ECON 2143 or (ECON 2013 and ECON 2023) or (AGEC 1103 and AGEC 2103)) and AMPD 3033 and senior standing or instructor consent. (Typically offered: Fall and Spring)

\section*{AMPD 4103. Evolution of Fashion and Society Through Television Media. 3} Hours.
This course uses television programming from its early beginnings in the 1930s through to the twenty-first century to trace major events, societal changes, and the associated evolution of fashion. The course examines television both as an innovator and diffuser of fashion trends. (Typically offered: Fall and Spring)
AMPD 4111. History of Apparel Through Film from 1900 to Present. 1 Hour. This course uses historic costume films to trace the evolution of clothing from 1900 to Present. Emphasis is placed on societal aspects such as politics, religion, economy, technology, education, sports, class structure, and gender roles, and how they affect and change dress. Web based course. (Typically offered: Fall and Spring)

\section*{AMPD 4213. Fashion Illustration - UARC. 3 Hours.}

The purpose of this course is to develop the fundamentals skills necessary in fashion illustration. Students will be highly encouraged to use various mediums, and also utilize these skills to develop a individual style of drawing for their own design collections. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course\# FASHDRW-317. Prerequisite: AMPD majors only. (Typically offered: Fall)

AMPD 4223. Design Concepts for Fashion Merchandising - UARC. 3 Hours. This course examines the elements of research and design in fashion design, fabrications and merchandising. The student develops creative skills as well as an awareness of the various roles played by workers in the fashion industry. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course \# FASHDES-316. Prerequisite: AMPD majors only. (Typically offered: Fall)
AMPD 4233. Fashion Design - UARC. 3 Hours.
This course focuses on the key components of the fashion design process including research, trend forecasting, materials investigation and presentation of valuable, market-specific collections. Designers consider current market trends and design concepts as influences on merchandising. Extensive opportunities for the development and communication of a personal design vision in illustrated presentations helps students build portfolio-ready collections. Industry directed projects also provide opportunities to develop brand-conscious yet creative concepts and designs. CAD skills are utilized in a variety of presentational techniques. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course \# FASHDES-316. Prerequisite: AMPD majors only. (Typically offered: Fall)

\section*{AMPD 4243. Pattern Development II - UARC. 3 Hours.}

Students learn to drape basic bodice and skirt variations on standard industrial dress forms. Original garments are designed, draped and sewn. Accurate pattern-making, sewing and attention to design fundamentals are stressed throughout the course. This course is only offered to AMPD students. This course will be offered by the University of Arkansas Rome Center, Italy - Course\# FASD-311. Prerequisite: AMPD majors only. (Typically offered: Fall)

\section*{AMPD 4901. AMPD International Pre-Study Tour. 1 Hour.}

A study of specific regional and international fashion markets for apparel studies in preparation for AMPD 4912 AMPD International Study Tour. The course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. AMPD 4901 is content specific to each AMPD 4912 international study tour and must be repeated for each study tour destination. A grade of " \(C\) " or better is required to participate in AMPD 4912. Prerequisite: 2.0 minimum GPA. AMPD majors with minimum 30 hours, or consent. (Typically offered: Spring and Summer) May be repeated for up to 4 hours of degree credit.

\section*{AMPD 4901H. Honors AMPD International Pre-Study Tour. 1 Hour.}

A study of specific regional and international fashion markets for apparel studies in preparation for AMPD 4912 AMPD Study Tour. The course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. AMPD 4901 is content specific to each AMPD 4912 study tour and must be repeated for each study tour destination. A grade of "C" or better is required to participate in AMPD 4912. Prerequisite: 2.0 minimum GPA. AMPD majors with minimum 30 hours, or consent. (Typically offered: Spring and Summer) May be repeated for up to 4 hours of degree credit.
This course is equivalent to AMPD 4901.

\section*{AMPD 4912. AMPD International Study Tour. 2 Hours.}

An on-site study of international fashion markets for apparel merchandising and product development. Course further examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets as outlined in AMPD 4901. Course includes study trip; length based upon destination. Additional fees required. Course offered each May Intersession. Prerequisite: AMPD 4901 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Corequisite: AMPD 4901 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

AMPD 4912H. Honors AMPD International Study Tour. 2 Hours.
An on-site study of international fashion markets for apparel merchandising and product development. Course further examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets as outlined in AMPD 4901. Course includes study trip; length based upon destination. Additional fees required. Course offered each May Intersession. Prerequisite: AMPD 4901 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Corequisite: AMPD 4901 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Summer) May be repeated for up to 8 hours of degree credit.
This course is equivalent to AMPD 4912.

\section*{AMPD 4921. AMPD New York City Pre-Study Tour. 1 Hour.}

A pre-study of the New York fashion market for apparel students. Course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. Course is a pre-requisite for AMPD 4952 a 6 day field study in New York City, NY, May Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, and students must be a AMPD majors with a minimum of 30 hours, or consent. (Typically offered: Spring)

\section*{AMPD 4921H. Honors AMPD New York City Pre-Study Tour. 1 Hour.}

A pre-study of the New York fashion market for apparel students. Course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. Course is a pre-requisite for AMPD 4952 a 6 day field study in New York City, NY, May Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, students must be a AMPD majors with a minimum of 30 hours, and honors standing or consent. (Typically offered: Spring) This course is equivalent to AMPD 4921.

\section*{AMPD 4931. AMPD Virtual Las Vegas Pre-Study Tour. 1 Hour.}

Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. This course is a pre-requisite for AMPD 4962. This course is only offered to AMPD majors. Prerequisite: Students must have a 2.0 minimum GPA and must be an AMPD major with a minimum 30 hours completed, or consent. (Typically offered: Spring)

\section*{AMPD 4931H. Honors AMPD Virtual Las Vegas Pre-Study Tour. 1 Hour.} Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. This course is a pre-requisite for AMPD 4962. This course is only offered to AMPD majors. Prerequisite: Students must have a 2.0 minimum GPA, must be an AMPD major with a minimum 30 hours completed, and must have honors standing or consent. (Typically offered: Spring)
This course is equivalent to AMPD 4931.

\section*{AMPD 4941. AMPD Las Vegas Pre-Study Tour. 1 Hour.}

A pre-study of the Las Vegas MAGIC trade show for apparel merchandising and product development. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods to mass markets. Course is a pre-requisite for AMPD 4952 or AMPD 4952H a 6-day field study in Las Vegas, Nevada, August Intercession. This course is only offered to AMPD majors. Prerequisite: 2.0 minimum GPA, and students must be an AMPD major with a minimum of 30 hours, or consent. (Typically offered: Spring)

\section*{AMPD 4941H. Honors AMPD Las Vegas Pre-Study Tour. 1 Hour.}

A pre-study of the Las Vegas MAGIC trade show for apparel merchandising and product development. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods to mass markets. Course is a pre-requisite for AMPD 4952 or AMPD 4952H a 6-day field study in Las Vegas, Nevada, August Intercession. This course is only offered to AMPD majors.
Prerequisite: 2.0 minimum GPA, students must be an AMPD major with a minimum of 30 hours, and have honors standing or consent. (Typically offered: Spring) This course is equivalent to AMPD 4941.

\section*{AMPD 4952. AMPD New York City Study Tour. 2 Hours.}

The course examines the application of business practices in the design, production, distribution and retailing of goods including sourcing, and manufacturing to mass markets. Students are expected to take an active role in the learning process for the duration of the study abroad experience, including critical thinking, problem identification and self-initiated inquiry. 2 credit hours Summer May Intersession enrollment includes study tour and related assignments to be completed on site. Corequisite: AMPD 4921 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. Prerequisite: AMPD 4921 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. (Typically offered: Spring)

\section*{AMPD 4952H. Honors AMPD New York City Study Tour. 2 Hours.}

The course examines the application of business practices in the design, production, distribution and retailing of goods including sourcing, and manufacturing to mass markets. Students are expected to take an active role in the learning process for the duration of the study abroad experience, including critical thinking, problem identification and self-initiated inquiry. 2 credit hours Summer May Intersession enrollment includes study tour and related assignments to be completed on site. Corequisite: AMPD 4921 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 minimum GPA, AMPD major with minimum 30 hours, honors standing and instructor consent. Prerequisite: AMPD 4921 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, honors standing and instructor consent. (Typically offered: Spring)
This course is equivalent to AMPD 4952.

\section*{AMPD 4962. AMPD Virtual Las Vegas Study Tour. 2 Hours.}

Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials. Corequisite: AMPD 4931 (with a C or better, if corequisite, must have \(C\) or better at time of virtual tour), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. Prerequisite: AMPD 4931 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, and instructor consent. (Typically offered: Spring)

\section*{AMPD 4962H. Honors AMPD Virtual Las Vegas Study Tour. 2 Hours.}

Course examines the buying function of apparel by exploring facets of technology currently being used in the fashion industry. Students will be digitally exposed to assortment planning, budgeting, open-to-buy, and the visual merchandising aspects of apparel retailing. Aspects of the MAGIC trade show held in Las Vegas will be discussed and analyzed. MAGIC is the most comprehensive fashion trade show in the U.S. for apparel, accessories, footwear, and sourcing materials.Corequisite: AMPD 4931 (with a C or better, if corequisite, must have \(C\) or better at time of virtual tour), 2.0 minimum GPA, AMPD major with minimum 30 hours, instructor consent and honors standing. Prerequisite: AMPD 4931 (with a C or better), 2.0 minimum GPA, AMPD major with minimum 30 hours, instructor consent and honors standing. (Typically offered: Spring)

AMPD 4972. AMPD Las Vegas Study Tour. 2 Hours.
A 6 day field study of the Las Vegas MAGIC trade show for apparel studies. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods from to mass markets. Course is a 6-day field study in Las Vegas, Nevada, August Intercession. Corequisite: AMPD 4941 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Prerequisite: AMPD 4941 (with a C or better), 2.0 min. GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Spring)

\section*{AMPD 4972H. Honors AMPD Las Vegas Study Tour. 2 Hours.}

A 6 day field study of the Las Vegas MAGIC trade show for apparel studies. Course examines the design and production of a major trade show and the distribution of wholesale fashion goods from to mass markets. Course is a 6-day field study in Las Vegas, Nevada, August Intercession. Corequisite: AMPD 4941 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, honors standing and instructor consent. Prerequisite: AMPD 4941 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, honors standing and instructor consent. (Typically offered: Spring)
This course is equivalent to AMPD 4972.

\section*{AMPD 5003. Apparel Sourcing and Merchandising Systems in the Global Economy. 3 Hours.}

Evaluation of key issues facing textiles and apparel supply chain businesses in the global economy considering economic, political, and social perspectives and professional implications. Lecture 3 hours. (Typically offered: Fall Odd Years)

AMPD 5023. Social, Psychological and Cultural Aspects of Dress. 3 Hours. Integration of social, psychological and cultural theories as they apply to appearance and clothing behavior. Lecture 3 hours. (Typically offered: Spring Even Years)
AMPD 5033. Issues and Trends in Textile Studies. 3 Hours.
Studies of advances in textile science and recent developments in the textile industry. Lecture 3 hours. (Typically offered: Fall Even Years)

AMPD 5043. Theories and Practices in Apparel Merchandising. 3 Hours. Theoretical perspectives, concepts and current practices that influence apparel merchandising. Lecture 3 hours. (Typically offered: Spring Odd Years)

\section*{AMPD 5063. Advanced Apparel Production. 3 Hours.}

An advanced study of product development incorporating technology used in the industry for a career in fashion merchandising and/or product development in a computer laboratory environment. Laboratory 6 hours per week. Graduate degree credit will not be given for both AMPD 4063 and AMPD 5063. Prerequisite: AMPD 2033, AMPD 2063 and AMPD 2073. (Typically offered: Fall and Spring)

AMPD 5093. Apparel Merchandise Planning and Inventory Control. 3 Hours. Describes today's challenges for both apparel manufacturers and retailers in meeting the consumer's demands for the right products at the right prices - and at the right times. Follows the evolution of the merchandising function with emphasis on production efficiency, highlighting the philosophies of industry executives and the effective integration of the merchandising, store design, marketing, the apparel supply chain and manufacturing functions along the way. Graduate degree credit will not be given for both AMPD 4093 and AMPD 5093. Prerequisite: AMPD 3033. (Typically offered: Fall and Spring)
AMPD 5103. Evolution of Fashion and Society Through Television Media. 3 Hours.
This course uses television programming from its early beginnings in the 1930s through to the twenty-first century to trace major events, societal changes, and the associated evolution of fashion. The course examines television both as an innovator and diffuser of fashion trends. Graduate degree credit will not be given for both AMPD 4103 and AMPD 5103. (Typically offered: Fall and Spring)

\section*{AMPD 5223. Merchandising Application for the Apparel Industry. 3 Hours.}

Application of merchandising theory, principles and practices in a capstone class. An in depth study of innovative apparel business concepts as applied to manufacturers and retailers of apparel including apparel classification, seasonal cycles, stock emphasis, assortment strategies, target customers, and apparel trends. Includes an overview of marketing communication including advertising, personal selling, and sales promotion. Graduate degree credit will not be given for both AMPD 4023 and AMPD 5223. Prerequisite: AMPD 3033 and AMPD 3043. (Typically offered: Fall and Spring)

\section*{AMPD 5233L. Computer Aided Textile Design. 3 Hours.}

This course is designed to give students advanced skills in textile design using industry based computer aided design (CAD) software. Lab 4 hours per week. Prerequisite: AMPD 2033 and AMPD 2053. (Typically offered: Fall and Spring)

AMPD 5253. Historic and Contemporary Apparel. 3 Hours.
This course traces the evolution of clothing from ancient times to the twentieth century with emphasis upon Western civilization and includes the study of contemporary fashion as a social force including the origin, scope, theory, and history of the fashion business, the materials of fashion, the fashion producers, auxiliary fashion enterprises, designers, fashion leaders, and leading market. Cultural and economic factors affecting dress, adornment and customs associated dress will be stressed. The Lecture 3 hours per week. Graduate degree credit will not be given for both AMPD 4053 and AMPD 5253. (Typically offered: Fall and Spring)

\section*{AMPD 5901. AMPD Pre-Study Tour. 1 Hour.}

A study of specific regional and international fashion markets for apparel studies in preparation for AMPD 5912 AMPD Study Tour. The course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. AMPD 5901 is content specific to each AMPD 5912 study tour and must be repeated for each study tour destination. A grade of " C " or better is required to participate in AMPD 5912. Graduate degree credit will not be given for both AMPD 4901 and AMPD 5901. Prerequisite: 2.0 minimum GPA. AMPD majors with minimum 30 hours, or consent. (Typically offered: Spring and Summer) May be repeated for up to 4 hours of degree credit.

\section*{AMPD 5912. AMPD Study Tour. 2 Hours.}

An on-site study of specific regional and international fashion markets for apparel merchandising and product development. Course further examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets as outlined in AMPD 4901. Course includes study trip; length based upon destination. Additional fees required. Course will also be offered each May and August Intersession. Prerequisite: AMPD 4901 (with a C or better), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. Corequisite: AMPD 4901 (with a C or better, if corequisite, must have C or better at time of trip), 2.0 min . GPA, AMPD major with min. 30 hours, and instructor consent. (Typically offered: Summer) May be repeated for up to 8 hours of degree credit.

\section*{Applied Music (Class) (MUAC)}

\section*{Courses}

MUAC 1121. English and Italian Diction for Singers. 1 Hour.
Training in proper pronunciation and inflections of English and Italian as applied to singers. Two meetings per week. (Typically offered: Fall)

\section*{MUAC 1141. German and French Diction for Singers. 1 Hour.}

Training in proper pronunciation and inflection of German and French as applied to singing. Two meetings per week. Prerequisite: MUAC 1121. (Typically offered: Spring)

MUAC 1161. Class Instruction in Piano for Non-Music Majors. 1 Hour.
Beginning instruction in piano. Does not fulfill the class piano requirement for music majors. (Typically offered: Fall, Spring and Summer)

MUAC 1221. Piano Class for Music Majors I. 1 Hour.
Training in functional piano skills for music majors. Two meetings per week. Prerequisite: Music major and MUTH 1003. (Typically offered: Spring)

MUAC 1231. Piano Class for Music Majors II. 1 Hour.
A continuation of MUAC 1221. Two meetings per week. Upon successful completion of MUAC 1231 with a grade of B or better, credit for MUAC 1221 will also be given. Prerequisite: MUAC 1221 and a music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music. (Typically offered: Fall)

MUAC 1321. Class Instruction in Guitar. 1 Hour.
Beginning class instruction in guitar. Students must provide their own instruments. (Typically offered: Fall and Spring)

MUAC 1381. Class Instruction in Voice. 1 Hour.
Fundamentals of vocalization and singing of English songs, including breathing, vowel clarity, and pronunciation of consonants. (Typically offered: Fall and Spring)

MUAC 2112. Music Technology. 2 Hours.
Introduces skills for transcribing music using music notation software and sound reinforcement systems. Covers MIDI sequencing and audio recording and editing software to produce accompaniment tracks and create compact discs of music and multimedia projects. Prerequisite: Music major pursuing a Bachelor of Music or Honors Bachelor of Music degree, and sophomore standing. (Typically offered: Fall, Spring and Summer)

\section*{MUAC 2221. Piano Class for Music Majors III. 1 Hour.}

A continuation of MUAC 1231. Two meetings per week. Upon successful completion of MUAC 2221 with a grade of B or better, credit for MUAC 1221 and MUAC 1231 will also be given. Prerequisite: MUAC 1231 and a music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music. (Typically offered: Spring)

MUAC 2231. Piano Class for Music Major IV. 1 Hour.
A continuation of MUAC 2221. Two meetings per week. Upon successful completion of MUAC 2231 with a grade of B or better, credit for MUAC 1221, MUAC 1231, and MUAC 2221 will also be given. Prerequisite: MUAC 2221 and a music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music. (Typically offered: Fall)

MUAC 2321. Guitar Class Intermediate. 1 Hour.
Continues the development of several skills on the guitar such as rhythm playing, chord formations, sheet music reading, and melody presentation. Includes significant solo and group playing experiences. Prerequisite: MUAC 1321 or Instructor Consent. (Typically offered: Fall and Spring)

\section*{MUAC 3401. Jazz Improvisation I. 1 Hour.}

This course is the first in a four-semester sequence on the study of jazz improvisation with a linguistic approach. The class will cover the vocabulary and grammar of jazz, as well as rhetoric, story-telling and emotional performance. Each week students will be expected to be proficient in technical drills, harmonic and rhythmic vocabulary, and repertoire related to the four fundamental forms encompassed by the course. Transcriptions and writing assignments will also be given, and students will work with the Contrast Method of Improvisational Concepts, self-listening and analysis, performing the topics in class, group performance, and artistic development. (Typically offered: Fall)

\section*{MUAC 3411. Jazz Improvisation II. 1 Hour.}

This course is the second in a four-semester sequence on the study of jazz improvisation with a linguistic approach. The class will cover the vocabulary and grammar of jazz, as well as rhetoric, story-telling and emotional performance. Each week students will be expected to be proficient in technical drills, harmonic and rhythmic vocabulary, and repertoire related to the four fundamental forms encompassed by the course. Transcriptions and writing assignments will also be given, and students will work with the Contrast Method of Improvisational Concepts, self-listening and analysis, performing the topics in class, group performance, and artistic development. Prerequisite: MUAC 3401. (Typically offered: Spring)

MUAC 4371. Teaching the High School Percussionist. 1 Hour.
A study of solo literature and small and large ensemble literature appropriate for the high school percussionist. Emphasis on advanced snare drum and marimba lit., timpani and the broad range of percussionist instruments. Includes study of high school band, orchestra and percussion ensemble scores. Prerequisite: MUED 1371. (Typically offered: Irregular)

\section*{MUAC 4401. Jazz Improvisation III. 1 Hour.}

This course is the third in a four-semester sequence on the study of jazz improvisation with a linguistic approach. The class will cover the vocabulary and grammar of jazz, as well as rhetoric, story-telling and emotional performance. Each week students will be expected to be proficient in technical drills, harmonic and rhythmic vocabulary, and repertoire related to the four fundamental forms encompassed by the course. Transcriptions and writing assignments will also be given, and students will work with the Contrast Method of Improvisational Concepts, self-listening and analysis, performing the topics in class, group performance, and artistic development. Prerequisite: MUAC 3411. (Typically offered: Fall)

\section*{MUAC 4411. Jazz Improvisation IV. 1 Hour.}

This course is the fourth in a four-semester sequence on the study of jazz improvisation with a linguistic approach. The class will cover the vocabulary and grammar of jazz, as well as rhetoric, story-telling and emotional performance. Each week students will be expected to be proficient in technical drills, harmonic and rhythmic vocabulary, and repertoire related to the four fundamental forms encompassed by the course. Transcriptions and writing assignments will also be given, and students will work with the Contrast Method of Improvisational Concepts, self-listening and analysis, performing the topics in class, group performance, and artistic development. Prerequisite: MUAC 4401. (Typically offered: Spring)

MUAC 4421. Advanced Studies in Improvisation. 1 Hour.
Extends the techniques built in the improvisation course sequence (MUAC 3401, MUAC 3411, MUAC 4401, MUAC 4411) with specialized topics in a variety of improvisatory traditions. Sections may include "Free Jazz", "Coltrane and Chromaticism" "Atonal Improvisation", "Baroque Improvisation" and "World Music Improvisation". Prerequisite: MUAC 4411 or instructor consent. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.
MUAC 5371. Teaching the High School Percussionist. 1 Hour.
A study of solo literature and small and large ensemble literature appropriate for the high school percussionist. Emphasis on advanced snare drum and marimba lit., timpani and the broad range of percussionist instruments. Includes study of high school band, orchestra and percussion ensemble scores. Graduate degree credit will not be given for both MUAC 4371 and MUAC 5371. Prerequisite: MUED 1371. (Typically offered: Irregular)
MUAC 5421. Advanced Studies in Improvisation. 1 Hour.
Extends the techniques built in the improvisation course sequence (MUAC 3401, MUAC 3411, MUAC 4401, MUAC 4411) with specialized topics in a variety of improvisatory traditions. Sections may include "Free Jazz", "Coltrane and Chromaticism" "Atonal Improvisation", "Baroque Improvisation" and "World Music Improvisation". Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

MUAC 5482. Innovators of Jazz Seminar. 2 Hours.
Explores major 20th century figures in jazz as they relate to Black Music genres and the music of major jazz figures from the perspective of performance, composition, improvisation, and historical/cultural analysis. Significant interaction with major jazz guest artists and pedagogical experiences via interaction with the undergraduate jazz studies program. (Typically offered: Fall, Spring and Summer)

MUAC 6121. Advanced IPA for Singers. 1 Hour.
Training in proper use of the International Phonetic Alphabet (IPA), as needed for application in the choral setting. Pronunciation and inflections of commonly used languages in choral music (English, Italian, German and French) will be explored. (Typically offered: Irregular)

\section*{Applied Music (Private Instruction) (MUAP) \\ Courses}

\section*{MUAP 100V. Applied Secondary-Level Voice/Instrument I. 1-2 Hour.} Private study of secondary voice/instrument. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

\section*{MUAP 110V. Applied Major Voice/Instrument I. 1-4 Hour.}

Private study of the primary voice/instrument for music majors. Admission to MUAP 110V requires the successful completion of audition for the instructor. Prerequisite: Music major. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

\section*{MUAP 130V. Applied Skills Voice/Instrument I. 1-4 Hour.}

Private study of the primary voice/instrument for music majors. Continued development of fundamental musical and technical skills introduced in MUAP 110V. Prerequisite: Music major; recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

\section*{MUAP 200V. Applied Secondary-Level Voice/Instrument II. 1-2 Hour.}

Continued private study of secondary voice/instrument. Instructor permission required to enroll. Prerequisite: Two semesters of MUAP 100V and recommendation of the instructor. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

\section*{MUAP 210V. Applied Major Voice/Instrument II. 1-4 Hour.}

Continued private study of the primary voice/instrument for music majors. Prerequisite: Two semesters of MUAP 110 V with grades of \(B\) or better or MUAP 130V with a grade of B or better. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

\section*{MUAP 230V. Applied Skills Voice/Instrument II. 1-4 Hour.}

Private study of the primary voice/instrument for music majors. Continued development of fundamental musical and technical skills introduced in MUAP 210V. Prerequisite: Two semesters of MUAP 210V and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 300V. Applied Secondary-Level Voice/Instrument III. 1-2 Hour. Advanced private study of secondary voice/instrument. Prerequisite: Two semesters of MUAP 200V and recommendation of the instructor. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

MUAP 310V. Applied Major Voice/Instrument III. 1-4 Hour.
Continuation of MUAP 210V. Private study of the primary instrument/voice for music majors at the advanced level. Admission requires approval of the faculty committee of the area of study (voice, piano, woodwind, brass, percussion). Mastery of fundamental/technical skills sufficient to prepare for a recital must be observable by the committee. Prerequisite: Two semesters of MUAP 210V with grades of \(B\) or better or MUAP 230V with a grade of B or better. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

\section*{MUAP 310VH. Honors Applied Major Voice/Instrument III. 1-4 Hour.}

Continuation of MUAP 210V. Private study of the primary voice/instrument for honors music majors at the advanced level. Admission requires approval of faculty committee of the area of study (voice, piano, woodwind, brass, percussion). Mastery of fundamental/technical skills sufficient to prepare for a recital must be observable by the committee. Prerequisite: Two semesters of MUAP 210 V with grades of \(B\) or better or MUAP 230V with a grade of B or better; honors standing. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.
This course is equivalent to MUAP 310 V .

\section*{MUAP 3201. Applied Recital I. 1 Hour.}

Preparation and performance of a public recital of a minimum of 25 minutes of music. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUAP 3201H. Honors Applied Recital I. 1 Hour.}

Preparation and performance of a public recital of a minimum of 50 minutes of music. Corequisite: MUAP 310VH. (Typically offered: Fall and Spring) May be repeated for degree credit.
This course is equivalent to MUAP 3201.

\section*{MUAP 330V. Applied Skills Voice/Instrument III. 1-4 Hour.}

Private study of the primary voice/instrument for music majors at the advanced level. Continued development of musical and technical skills introduced in MUAP 310V. Prerequisite: Two semesters of MUAP 310V and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 400V. Applied Secondary-Level Voice/Instrument IV. 1-2 Hour. Continued advanced private study of secondary voice/instrument. Instructor permission required to enroll. Prerequisite: Two semesters of MUAP 300V and recommendation of the instructor. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

\section*{MUAP 410V. Applied Major Voice/Instrument IV. 1-4 Hour.}

Continuation of MUAP 310V. Private study of the primary voice/instrument for music majors at the advanced level. Prerequisite: Two semesters of MUAP 310V with recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

MUAP 410VH. Honors Applied Major Voice/Instrument IV. 1-4 Hour.
Continuation of MUAP 310VH. Private study of the primary voice/instrument for honors music majors at the advanced level. Prerequisite: Two semesters of MUAP 310VH, recommendation of instructor and honors standing. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.
This course is equivalent to MUAP 410 V .
MUAP 415V. Applied Skills Voice/Instrument IV. 1-4 Hour.
Private study of the primary voice/instrument for music majors at the advanced level in preparation for recital. Continued development of musical and technical skills introduced in MUAP 410V. Prerequisite: Two semesters of MUAP 410V and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

\section*{MUAP 4201. Applied Recital II. 1 Hour.}

Preparation and performance of a public recital of a minimum of 50 minutes of music. Prerequisite: MUAP 3201. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUAP 4201H. Honors Applied Recital II. 1 Hour.
Preparation and performance of a public recital of a minimum of 50 minutes of music. Corequisite: MUAP 410VH. (Typically offered: Fall and Spring) May be repeated for degree credit.
This course is equivalent to MUAP 4201.

\section*{MUAP 4301. Composition Recital. 1 Hour.}

Preparation and performance of a public recital of a minimum of 50 minutes consisting of original musical compositions. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUAP 500V. Applied Voice/Instrument-Secondary Level. 1-2 Hour.
Private study at the graduate secondary level. (Typically offered: Fall and Spring) May be repeated for degree credit.
MUAP 510V. Applied Voice/Instrument. 1-5 Hour.
Private study at the graduate level. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUAP 520V. Graduate Recital I. 1-2 Hour.}

Preparation and performance of a public recital of a minimum of 50 minutes of music. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{MUAP 521V. Graduate Recital II. 1-2 Hour.}

Preparation and performance of a public recital of a minimum of 50 minutes of music. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

MUAP 610V. Applied Voice/Instrument. 1-6 Hour.
Private study at the graduate level. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUAP 6203. Graduate Recital I. 3 Hours.}

Public 50-minute lecture recital consisting of a musical performance and scholarly presentation in consultation with the candidate's doctoral advisor. (Typically offered: Irregular)

\section*{MUAP 6213. Graduate Recital II. 3 Hours.}

Preparation and performance of a public recital of a minimum of 50 minutes of music. (Typically offered: Irregular)
MUAP 6223. Community Project for DMA Candidates. 3 Hours.
Community outreach project related to the candidate's area of interest. (Typically offered: Irregular)

\section*{Arabic (ARAB)}

\section*{Courses}

ARAB 1003. Elementary Arabic I. 3 Hours.
Stresses correct pronunciation, aural comprehension, simple speaking ability. Basic grammar is taught inductively through oral and written skills. (Typically offered: Spring)

\section*{ARAB 1013. Elementary Arabic II. 3 Hours.}

Continues to stress correct pronunciation, aural comprehension, simple speaking ability. Continued presentation of grammar with special attention to basic morphology. Prerequisite: ARAB 1003 or equivalent. (Typically offered: Fall)

\section*{ARAB 1016. Immersive Arabic I. 6 Hours.}

Equivalent to ARAB 1003 and ARAB 1013. Stresses rapid learning through daily interaction and immersion in a fun and friendly atmosphere. Supportive pedagogical practice focuses on developing communicative proficiency. Fundamentals of grammar are taught inductively through engaging assignments and activities designed to incrementally develop oral and written skills. (Typically offered: Fall)

ARAB 110V. Special Topics in Arab Culture. 1-3 Hour.
Formulates an informed picture of the Arab World. Through exploration of various aspects of the region and interaction with Arabs in the community, students are introduced to the richness and diversity of Arab cultures. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ARAB 2003. Intermediate Arabic I. 3 Hours.
Leads to greater oral comprehension and speaking ability and develops the more advanced reading and writing skills. Prerequisite: ARAB 1013 or ARAB 1016 or equivalent. (Typically offered: Spring)

\section*{ARAB 2013. Intermediate Arabic II. 3 Hours.}

Continued development of speaking, comprehension, reading, and writing. Emphasizes morphology and syntax. (Typically offered: Irregular)

\section*{ARAB 2016. Immersive Arabic II. 6 Hours.}

Continued emphasis on immersive learning through daily interaction. Leads to greater oral comprehension and speaking ability and develops the more advanced reading and writing skills. Emphasizes morphology and syntax. Focuses on expanding cultural awareness. Prerequisite: ARAB 1013 or ARAB 1016. (Typically offered: Spring)

\section*{ARAB 2016H. Honors Immersive Arabic II. 6 Hours.}

Continued emphasis on immersive learning through daily interaction. Leads to greater oral comprehension and speaking ability and develops the more advanced reading and writing skills. Emphasizes morphology and syntax. Focuses on expanding cultural awareness. Prerequisite: Honors standing and (ARAB 1013 or ARAB 1016). (Typically offered: Spring)
This course is equivalent to ARAB 2016.
ARAB 3016. Immersive Arabic III. 6 Hours.
Leads to greater facility in the spoken language and continues to develop reading and writing skills. Continued broadening of cultural awareness and emphasis on morphology and syntax. Prerequisite: ARAB 2016. (Typically offered: Fall)
ARAB 3016H. Honors Immersive Arabic III. 6 Hours.
Leads to greater facility in the spoken language and continues to develop reading and writing skills. Continued broadening of cultural awareness and emphasis on morphology and syntax. Prerequisite: Honors standing and (ARAB 2016 or ARAB 2016H). (Typically offered: Fall)
This course is equivalent to ARAB 3016.
ARAB 3033. Colloquial Arabic. 3 Hours.
Development of aural comprehension and speaking skills in one of the major Arabic dialects. Prerequisite: (ARAB 1003 and ARAB 1013) or ARAB 1016 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ARAB 4016. Immersive Arabic IV. 6 Hours.}

Continued development of speaking, comprehension, reading, writing. Reading assignments introduce a variety of styles ranging from classical to modern in both prose and verse. Prerequisite: ARAB 3016. (Typically offered: Spring)

\section*{ARAB 4016H. Honors Immersive Arabic IV. 6 Hours.}

Continued development of speaking, comprehension, reading, writing. Reading assignments introduce a variety of styles ranging from classical to modern in both prose and verse. Prerequisite: Honors standing and (ARAB 3016 or ARAB 3016H). (Typically offered: Spring)
This course is equivalent to ARAB 4016.

\section*{ARAB 4023. Advanced Arabic I. 3 Hours.}

Development of advanced speaking and writing skills. Extensive reading and writing assignments and translating exercises from English into Arabic. Prerequisite: ARAB 4016. (Typically offered: Irregular)

\section*{ARAB 4033. Advanced Arabic II. 3 Hours.}

Continued advanced speaking, reading, and writing skills. Prerequisite: ARAB 4023. (Typically offered: Irregular)

\section*{ARAB 4053. Arabic Readings. 3 Hours.}

Develops skills in description, analysis, and argumentation within a workshop atmosphere. Readings are drawn from various styles of standard Arabic, ranging from newspapers to literary texts. The thematic focus of the course varies. Prerequisite: ARAB 4016 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ARAB 4113. Modern Arabic Literature. 3 Hours.}

Selected readings from Arabic fiction and poetry from the 20th century to the present. Prerequisite: ARAB 4023 or equivalent. (Typically offered: Irregular)

\section*{ARAB 4213. Arab Culture and Civilization.. 3 Hours.}

Selected readings from Arab history, literature, the Islamic Tradition, and the Holy Qur'an. Prerequisite: ARAB 4016 or equivalent. (Typically offered: Irregular)

ARAB 470V. Special Topics. 1-6 Hour.
May be offered in a topic not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for degree credit.
ARAB 570V. Special Topics. 1-6 Hour.
May be offered in a topic not specifically covered by courses otherwise listed. Graduate degree credit will not be given for both ARAB 470V and ARAB 570V. (Typically offered: Irregular) May be repeated for degree credit.

\section*{Architecture and Design (ARDS)}

\section*{Courses}

ARDS 3153. Methods of Design Inquiry. 3 Hours.
Investigation into practical, theoretical, and methodological strategies for embarking upon design inquiry and discourse. Practical issues of method are examined. A range of tools for interpreting architecture, landscape architecture and interior design are surveyed. Honors students will produce a prospectus for their Honors Capstone. Prerequisite: Fay Jones School students in third year or Honors candidacy. (Typically offered: Spring)

\section*{ARDS 3153H. Honors Methods of Design Inquiry. 3 Hours.}

Investigation into practical, theoretical, and methodological strategies for embarking upon design inquiry and discourse. Practical issues of method are examined. A range of tools for interpreting architecture, landscape architecture and interior design are surveyed. Honors students will produce a prospectus for their Honors Capstone. Prerequisite: Fay Jones School students in third year or Honors candidacy. (Typically offered: Spring)
This course is equivalent to ARDS 3153.

\section*{ARDS 5143H. Honors Capstone. 3 Hours.}

Development dependent upon the synthesis of knowledge and application of critical, reflective thinking addressing architectural, landscape architectural and/or interior design issues. A diversity of interests and modes or inquiry are encouraged. All capstones must include a written research on the topic of investigation. Prerequisite: ARDS 3153 and honors candidacy. (Typically offered: Fall and Spring)

\section*{ARDS 6023. Design Seminar. 3 Hours.}

Advanced seminars of special interest to students and faculty that are not covered in other courses. Prerequisite: Admission to the Master of Design Program (DSGNMDS). (Typically offered: Irregular) May be repeated for degree credit.

\section*{ARDS 6723. Methods of Design Inquiry. 3 Hours.}

Investigation into the practical, theoretical, and methodological strategies necessary for embarking upon inquiry and discourse for design-related problems. Pre- or Corequisite: Admission into the Master of Design program. (Typically offered: Fall)

ARDS 6803. Design Leadership. 3 Hours.
Explores leadership through conceptual and theoretical perspectives. Emphasis is on developing and managing effective design processes, methods, and organizations enabling innovative design practices. Students will explore contemporary issues and forces that affect the conditions of how design is embedded in thought leadership. Pre- or Corequisite: Admission into the Master of Design program. (Typically offered: Spring)

ARDS 6813. Cities and Public Good. 3 Hours.
Studies infrastructure as socio-technical systems and potential transitions to lowercarbon futures. Concepts governing Large Technical Systems such as obduracy, path-dependency, energy transitions, value capture, and public good are explored through analytic frameworks like Multi-level Perspectives (MLP) and Socio-technical Systems Theory (STS) in the context of incumbent technologies. Pre- or Corequisite: Admission into the Master of Design program. (Typically offered: Fall and Spring)

\section*{ARDS 6823. Vocabularies of Context Production. 3 Hours.}

Explores connectivity through spatial and organizational formats from urbanism to supply chains, ecosystems, resource sheds, infrastructure, neighborhoods, eco-districts, and other public spaces. In addition to the traditional categories of geometry, proportion, and fit used to define place, vocabularies of flow, timing, interactivity, phasing, modulation, distribution, and emergence will be examined. Preor Corequisite: Admission into the Master of Design program. (Typically offered: Fall and Spring)

ARDS 6833. Wood Theories, Tectonics and Environmental Response. 3 Hours. Investigate wood design through theoretical, technical and practical inquiry emphasizing tectonics responding to a range of material and environmental aspects. Focused study of wood's physical properties, functions, and behavior in manufactured and constructed assemblies. Current and future global issues, industry, economy, and the design of the constructed environment are explored. Prerequisite: Admission to the Master of Design Studies Degree. (Typically offered: Fall)

\section*{ARDS 6843. Advanced Wood Production Processes. 3 Hours.}

Examine performative wood design at the intersection of cutting edge of fabricationproduction technologies and the material assembly at multiple scales to expand the limits of current practice. Opportunities for wood design are re-examined in light of evolving digital technologies, practices and theories of making. Prerequisite: Admission to the Master of Design Studies Program. (Typically offered: Spring)

\section*{ARDS 6853. Health and Wellness in the Built Environment. 3 Hours.}

Advanced seminar examining the interactions of health and wellbeing in the built environment. Physiological and psychosocial wellness concepts are examined across multiple scales and settings. Prerequisite: Admission to the Master of Design Studies program or permission of instructor. (Typically offered: Fall)

ARDS 6906. Advanced Design Studio. 6 Hours.
A topical design studio investigating project development dependent upon the synthesis of knowledge and application of critical thinking to complex environmental design problems. The intimate relationship between architecture, place and culture is used to create connection and relevance in the built environment. Pre- or Corequisite: Admission into the Master of Design program. (Typically offered: Fall)

\section*{ARDS 6916. Advanced Design Studio II. 6 Hours.}

An advanced topical design studio utilizing methods from domains external to design disciplines. Project resolution requiring skill in generating design ideas developed through strategic planning and responding to sociopolitical, economic, and environmental drivers. Pre- or Corequisite: Admission into the Master of Design program. Prerequisite: Completion of ARDS 6906. (Typically offered: Spring)

\section*{ARDS 6926. Graduate Residency. 6 Hours.}

Experiential learning integrating knowledge and theory in professional environment. This guided experience will facilitate career development, professional relationships, and provide a critical opportunity to apply new skills and knowledge to real problems. Pre- or Corequisite: Admission into the Master of Design program. Prerequisite: Completion of ARDS 6906 and ARDS 6916. (Typically offered: Summer)

\section*{ARDS 693V. Extended Graduate Residency. 1-6 Hour}

Experiential learning integrating knowledge and theory in professional environment. This guided experience will facilitate career development, professional relationships, and provide a critical opportunity to apply new skills and knowledge to real problems. Pre- or Corequisite: Admission into the Master of Design Studies program. Prerequisite: Completion of ARDS 6906 and ARDS 6916. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{Architecture (ARCH)}

\section*{Courses}

ARCH 1003. Basic Course in the Arts: Architecture Lecture. 3 Hours.
A general introduction to architecture, exploring the designed environment, including cities and buildings and their histories, technologies and users, in a holistic manner. May not be presented towards satisfaction of major requirements in either the B.Arch or B.A. in architectural studies degrees. (Typically offered: Fall and Spring)

ARCH 1003H. Honors Basic Course in the Arts: Architecture Lecture. 3 Hours. A general introduction to architecture, exploring the designed environment, including cities and buildings and their histories, technologies, and users, in a holistic manner. May not be presented towards satisfaction of major requirements in either the B.Arch or B.A. in architectural studies degrees. Prerequisite: Honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 1003.
ARCH 1013. Diversity and Design. 3 Hours.
Explores the reciprocal relationship between diversity and design in America, investigating how race, gender, religion, ability, age, class, and location affect and are affected by the design of media, products, architecture, and cities/regions. Positive and negative effects of diversity and design are discussed. (Typically offered: Summer)

ARCH 1015. Fundamental Design Skills. 5 Hours.
Fundamental design skills; development of visual and verbal communication skills including observation skills, design technologies, analysis and representation in both 2-dimensions and 3-dimensions through analog and digital tools; creative and critical thinking skills. (Typically offered: Fall and Spring)

\section*{ARCH 1025. Fundamental Design Methodology. 5 Hours.}

Fundamental design skills; use of precedents for understanding principles of design and natural and formal ordering systems; design development using both iterative and alternative methods of exploration in both 2-dimensions and 3-dimensions using analog and digital tools; continued development of visual and verbal communication skills. Prerequisite: ARCH 1015. (Typically offered: Spring and Summer)

ARCH 1212. Design Thinking I: Foundations in Technology. 2 Hours.
This course will raise pertinent questions about the role of architectural technology in design through studying the important theories about technology from Vitruvius to contemporary practice and understanding how they have been manifested in built form. (Typically offered: Fall and Summer)

ARCH 1222. Design Thinking II: Foundations in History. 2 Hours.
Explores the role of architectural history in design thinking, introducing divergent canons and traditions in a global context and emphasizing understanding of the relationships among buildings, spaces and places and the social, political and technological circumstances in which the work was theorized, produced, and lived. Prerequisite: ARCH 1212. (Typically offered: Spring and Summer)

ARCH 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{ARCH 2016. Architectural Design III. 6 Hours}

Introduction of formal principles and strategies used in space making, focusing on the development of plans and sections. Precedents and the understanding of them through analysis and syntheses are used as a means of examining the past and the present while providing a framework from which personal design sensibilities can evolve. Corequisite: ARCH 2113 and ARCH 2132 and ARCH 2233. Prerequisite ARCH 1025 and ARCH 1222. (Typically offered: Fall)

\section*{ARCH 2026. Architectural Design IV. 6 Hours.}

An elaboration of space-making, addressing three-dimensional aspects of formmaking, including the influence of structural systems, articulation of the vertical section, and exterior expression; the role of site as a generator of form; and the overarching importance of technics, including the materiality of space, structure, and light. Corequisite: ARCH 2123 and ARCH 2243. Prerequisite: ARCH 2016 and ARCH 2113 and ARCH 2132 and ARCH 2233. (Typically offered: Spring)

ARCH 2113. Architectural Structures I. 3 Hours.
Introduction to statics and strength of materials. Building loads are examined as to their effect on the elements of architectural projects. Simple post and beam structures are the focus of this course. Bending, axial, and shear stress are examined in beams and columns. Materials studied include wood, steel, and concrete. Corequisite: ARCH 2016 and ARCH 2132. Prerequisite: ARCH 1212. (Typically offered: Fall)

\section*{ARCH 2113H. Honors Architectural Structures I. 3 Hours.}

Introduction to statics and strength of materials. Building loads are examined as to their effect on the elements of architectural projects. Simple post and beam structures are the focus of this course. Bending, axial, and shear stress are examined in beams and columns. Materials studied include wood, steel, and concrete. Corequisite: ARCH 2016 and ARCH 2132. Prerequisite: ARCH 1212. (Typically offered: Fall)
This course is equivalent to ARCH 2113.

\section*{ARCH 2123. Architectural Structures II. 3 Hours.}

Introduction to the basic theories of structures, structural behavior, and the design of simple structural systems capable of resisting gravity and lateral forces. Provides a basic understanding of structural behavior, organization of framing systems and location of lateral force resisting elements for building structures and other technical systems. Corequisite: ARCH 2026. Prerequisite: ARCH 2113 and ARCH 2132. (Typically offered: Spring)

\section*{ARCH 2123H. Honors Architectural Structures II. 3 Hours.}

Introduction to the basic theories of structures, structural behavior, and the design of simple structural systems capable of resisting gravity and lateral forces. Provides a basic understanding of structural behavior, organization of framing systems and location of lateral force resisting elements for building structures and other technical systems. Corequisite: ARCH 2026. Prerequisite: ARCH 2113, ARCH 2132 and honors candidacy. (Typically offered: Spring)
This course is equivalent to ARCH 2123.

\section*{ARCH 2132. Environmental Technology I. 2 Hours.}

Introduces theories and concepts of the building thermal, luminous and sonic environments with focus on solar geometry-shading, climate-thermal stresses, natural ventilation, daylight, sound isolation and noise control. The application of these systems to support the design of an environmentally responsive building and its enclosure is addressed. Corequisite: ARCH 2016 and ARCH 2113. Prerequisite: ARCH 1212. (Typically offered: Fall)

\section*{ARCH 2132H. Honors Environmental Technology I. 2 Hours.}

Introduces theories and concepts of the building thermal, luminous and sonic environments with focus on solar geometry-shading, climate-thermal stresses, natural ventilation, daylight, sound isolation and noise control. The application of these systems to support the design of an environmentally responsive building and its enclosure is addressed. Corequisite: ARCH 2016 and ARCH 2113. Prerequisite: ARCH 1212. (Typically offered: Fall)
This course is equivalent to ARCH 2132.
ARCH 2233. History of Architecture I. 3 Hours.
Critical study and analysis of world architecture from ancient times through the Middle Ages, comprising the ancient Americas, Asia, Mesopotamia, and Egypt; Classical, Byzantine, and Islamic architecture and vernacular design; and the early Christian, Romanesque, and Gothic periods. (Typically offered: Fall)

\section*{ARCH 2233H. Honors History of Architecture I. 3 Hours.}

Critical study and analysis of world architecture from ancient times through the Middle Ages, comprising the ancient Americas, Asia, Mesopotamia, and Egypt; Classical, Byzantine, and Islamic architecture and vernacular design; and the early Christian, Romanesque, and Gothic periods. Prerequisite: Honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 2233.
ARCH 2243. History of Architecture II. 3 Hours.
Critical study and analysis of world architecture from the fifteenth to the midnineteenth centuries. Encompasses early modern Europe (Renaissance, Baroque, and Neoclassical) as well as two or more of the following: colonial New Spain, early modern Japan, and/or early modern Islamic empires in Africa, the Middle East, and Asia. Vernacular American building is surveyed as well as architecture in the nineteenth-century, including Beaux-Arts design and the introduction of industrial materials. Prerequisite for architecture majors only: ARCH 2233. (Typically offered: Spring)

\section*{ARCH 2243H. Honors History of Architecture II. 3 Hours.}

Critical study and analysis of world architecture from the fifteenth to the midnineteenth centuries. Encompasses early modern Europe (Renaissance, Baroque, and Neoclassical) as well as two or more of the following: colonial New Spain, early modern Japan, and/or early modern Islamic empires in Africa, the Middle East, and Asia. Vernacular American building is surveyed as well as architecture in the nineteenth-century, including Beaux-Arts design and the introduction of industrial materials. Prerequisite: Architecture majors only. Corequisite: ARCH 2233 and honors candidacy. (Typically offered: Spring)
This course is equivalent to ARCH 2243.

\section*{ARCH 2600. Undergraduate Research Assistant. 0 Hours.}

Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARCH 2993. Art and Culture in Italy. 3 Hours.
The evolution of culture and aesthetics and their immediate relationship with the creation of Italy's masterpieces in art and architecture. Includes site visits and lectures. Offered in the Rome study abroad semester. (Typically offered: Fall and Spring)

\section*{ARCH 3016. Architectural Design V. 6 Hours.}

Emphasis on issues of design process, exploration of internal and external determinants of form and the integration of appropriate technologies in design solutions. Corequisite: ARCH 4433. Prerequisite: ARCH 2026 and ARCH 2123 and ARCH 2243. (Typically offered: Fall)

\section*{ARCH 3026. Architectural Design VI. 6 Hours.}

Studio-based analysis and design of structural and enclosure systems for buildings with particular emphasis on systems interface and application within the context of design exercises. Investigations of the appropriate use of materials and assemblies for varied programmatic and environmental criteria. Twelve hours of studio each week. Corequisite: ARCH 4523. Prerequisite: ARCH 3016 and ARCH 3143. (Typically offered: Spring)

\section*{ARCH 303V. Special Projects. 1-6 Hour.}

Individual or group investigation in research, visual communication, history, or design concerning special interests of student or faculty. (Typically offered: Irregular) May be repeated for degree credit.

ARCH 303VH. Honors Special Projects. 1-6 Hour.
Individual or group investigation in research, visual communication, history, or design concerning special interests of student or faculty. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit. This course is equivalent to ARCH 303 V .

\section*{ARCH 3143. Building Materials and Assemblies. 3 Hours.}

Introduction and comprehensive survey of primary building materials and methods of assembly: their history, properties, use and configuration - both traditional and contemporary, in the service of building construction; their impact on the form, expression and performance of building structures and envelopes. Prerequisite: ARCH 2132, ARCH 2113 and ARCH 2123. (Typically offered: Fall)

\section*{ARCH 3253. Environmental Technology II. 3 Hours.}

Covers theoretical foundations and applications of building environmental systems: HVAC with duct layout and controls, indoor air quality, electric lighting, power, acoustics, fire safety and egress, and water and waste. The important role of such systems in the design of buildings is examined through a series of small projects assignments. Prerequisite: ARCH 3016 and ARCH 3143. (Typically offered: Spring)

\section*{ARCH 3600. Undergraduate Research Assistant. 0 Hours.}

Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{ARCH 4016. Comprehensive Studio. 6 Hours.}

Emphasis on issues of typology, context and technological suitability as sources of theoretical and developmental responses. Corequisite: ARCH 4152. Prerequisite: ARCH 3026. (Typically offered: Fall)

ARCH 4023. Advanced Architectural Studies. 3 Hours.
Advanced seminars in subjects to special interest to students and faculty. (Typically offered: Fall and Spring) May be repeated for degree credit.

ARCH 4023H. Honors Advanced Architectural Studies. 3 Hours.
Advanced seminars in subjects to special interest to students and faculty.
Prerequisite: Honors candidacy. (Typically offered: Fall and Spring) May be repeated for degree credit.
This course is equivalent to ARCH 4023.
ARCH 4116. Architectural Design - Rome. 6 Hours.
Investigation of complex design problems in the context of the city of Rome, utilizing advanced issues in architectural design and planning. Prerequisite: ARCH 3026 or ARCH 4016. (Typically offered: Fall and Spring)

\section*{ARCH 4126. Architectural Design Latin America. 6 Hours.}

Introduces a complex social and physical urban condition through a process of formal analysis and design executed in a designated country augmented by an intense graphic investigation of urban form encountered through related field trips to the distinct cultural and geographic regions. Prerequisite: ARCH 3026 or ARCH 4016. (Typically offered: Summer)

\section*{ARCH 4152. Building Systems Integration. 2 Hours.}

Promotes the synthesis of building technologies, systems selection and integration in the resolution of a building design. Specifically, the student demonstrates knowledge in the ability to generate digital and analog graphic resolutions highlighting the design response of material, structural and environmental systems in a building. Corequisite: ARCH 4016. Prerequisite: ARCH 2113 and ARCH 2123 and ARCH 2132 and ARCH 3143 and ARCH 3253. (Typically offered: Fall and Spring)

\section*{ARCH 4152H. Honors Building Systems Integration. 2 Hours.}

Promotes the synthesis of building technologies, systems selection and integration in the resolution of a building design. Specifically, the student demonstrates knowledge in the ability to generate digital and analog graphic resolutions highlighting the design response of material, structural and environmental systems in a building. Corequisite: ARCH 4016. Prerequisite: ARCH 2113 and ARCH 2123 and ARCH 2132 and ARCH 3143 and ARCH 3253. (Typically offered: Fall and Spring) This course is equivalent to ARCH 4152.

\section*{ARCH 4433. History of Architecture III. 3 Hours.}

Critical study and analysis of the history and theories of modern architecture from the mid-nineteenth century to the present. Prerequisite: ARCH 2233 and ARCH 2243 or IARD 2883. (Typically offered: Fall)

ARCH 4433H. Honors History of Architecture III. 3 Hours.
Critical study and analysis of the history and theories of modern architecture from the mid-nineteenth century to the present. Prerequisite: ARCH 2233, ARCH 2243 and honors candidacy. (Typically offered: Fall)
This course is equivalent to ARCH 4433.
ARCH 4523. Architectural Theory. 3 Hours.
Introduction to the lexicon of architecture and the ideas and ideologies that provide the conceptual and critical infrastructure for the discipline. Reading and discussion of representative theory texts. Emphasis on twentieth century modernism and postmodernism, including contemporary speculations on possible and emerging forms of practice after theory. Prerequisite: ARCH 2233, ARCH 2243, and ARCH 4433. (Typically offered: Spring)

\section*{ARCH 4523H. Honors Architectural Theory. 3 Hours.}

Introduction to architectural theories and their relationship to modern historiography. Case studies are employed for the critical evaluation of significant texts and the discernment of concepts embedded in textual structures. Reading theory through established historical categories establishes critical insight to the original deployment, negation and resurfacing of architectural theories. Prerequisite:
ARCH 2233, ARCH 2243, and ARCH 4433. (Typically offered: Spring)
This course is equivalent to ARCH 4523.
ARCH 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARCH 4653. Architecture of the City. 3 Hours.
Analysis of Rome's urban form and historical and theoretical information in support of the students' experience. Includes site visits and lectures. Offered in the Rome study abroad semester. (Typically offered: Fall and Spring)

\section*{ARCH 4653H. Honors Architecture of the City. 3 Hours.}

Analysis of Rome's urban form and historical and theoretical information in support of the students' experience. Includes site visits and lectures. Offered in the Rome study abroad semester. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ARCH 4653.

\section*{ARCH 4673. Modern and Contemporary Rome. 3 Hours.}

Explores different local conditions that determine main architectural changes that have taken place in Rome during the last century of its urban history. Important works, leading figures and major concepts in contemporary European architecture will be described to introduce examples of modern and contemporary architecture in Rome. (Typically offered: Fall and Spring)

\section*{ARCH 4673H. Honors Modern and Contemporary Rome. 3 Hours.}

Explores different local conditions that determine main architectural changes that have taken place in Rome during the last century of its urban history. Important works, leading figures and major concepts in contemporary European architecture will be described to introduce examples of modern and contemporary architecture in Rome. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ARCH 4673.
ARCH 4853. Renaissance and Baroque Architecture. 3 Hours.
Study of Renaissance and Baroque architecture in Europe and the New World from 1400 to 1700 . With reference to an array of texts, drawings, and the edifices themselves, this course charts the evolution of a commanding Western architectural tradition. Renaissance and Baroque -- with close attention to the social, humanistic, and religious contexts that produced it. Prerequisite: ARCH 4433. (Typically offered: Irregular)
This course is equivalent to ARHS 4753.

\section*{ARCH 4863H. Honors St. Peter's and the Vatican. 3 Hours.}

Examines art and architectural history of St. Peter's Basilica in Rome from antiquity to present. Emphasis on the Renaissance/Baroque church and its early Christian predecessor. Students consider the impact of devotional practices and papal politics on the church, the Vatican Palace, and its renown artworks including the Sistine ceiling. Prerequisite: ARCH 2233 or ARCH 2233H, and ARCH 2243 or ARCH 2243H and ARCH 4433 or ARCH 4433H. (Typically offered: Irregular)
This course is equivalent to ARHS 4733.
ARCH 4933. Introduction to Historic Preservation. 3 Hours.
Introduces theoretical, methodological and practical issues of architectural preservation in Europe and, more specifically, in Italy. Addresses history and theory of restoration, basic principles of architectural preservation and methodology in the study and praxis of preservation applied to architecture and the issues posed by the preservation of modern architecture. (Typically offered: Fall and Spring)

ARCH 5016. Option Studio I. 6 Hours.
Project development dependent upon the synthesis of knowledge and application of critical thinking addressing architectural issues at multiple scales. Prerequisite: ARCH 4016, or ARCH 4116, or ARCH 4126. (Typically offered: Fall) May be repeated for degree credit.

\section*{ARCH 5026. Option Studio II. 6 Hours.}

Project resolution including demonstrated skill in generating design ideas supported by clear understanding of issues resulting in comprehensive development and presentation of architectural issues at multiple scales. (Typically offered: Spring) May be repeated for degree credit.

\section*{ARCH 5314. Architectural Professional Practice. 4 Hours.}

Study of role and responsibility of the architect, owner, and contractor relationships; professional ethics; organization of the architect's office; contracts and other documents; risk management strategies; and the preparation of the technical specifications and bidding documents of the Project Manual. Prerequisite: ARCH 4016 or ARCH 4116 or ARCH 4126. (Typically offered: Fall)

\section*{ARCH 5493. History of Urban Form. 3 Hours.}

The study of pre-industrial urban and architectural design strategies in cities from the Classical through the Baroque eras and their rediscovery in the late 20th century, providing the student with a designer's understanding of a broad range of exemplary urban spaces and the buildings that shape them. Prerequisite: ARCH 2233 and ARCH 2243 and ARCH 4433. (Typically offered: Irregular)

\section*{ARCH 5493H. Honors History of Urban Form. 3 Hours.}

The study of pre-industrial urban and architectural design strategies in cities from the Classical through the Baroque eras and their rediscovery in the late 20th century, providing the student with a designer's understanding of a broad range of exemplary urban spaces and the buildings that shape them. Prerequisite: ARCH 2233 and ARCH 2243 and ARCH 4433. (Typically offered: Irregular)
This course is equivalent to ARCH 5493.

\section*{ARCH 5953. Preservation Practice Field Trip. 3 Hours.}

Intensive field study of a domestic or foreign site of significant or precedentsetting preservation activity, through a field trip and a course of pre-travel lectures. (Intersessions) Prerequisite: ARCH 4943 or instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{Army ROTC (MILS)}

\section*{Courses}

MILS 1001. Introduction to the Army. 1 Hour.
This course focuses on small group leadership and introducing the student to the Army as an organization. Students learn time management, drill and ceremony, military customs and courtesies, basic map reading, water safety and first aid. Introduction to the organization, values, ethics, personal development and the role of the Army. Classroom 1 hour per week. Lab 2 hours per week. Corequisite: Lab component. (Typically offered: Fall)

MILS 1011. Foundations of Agile and Adaptive Leadership. 1 Hour.
Continuation of MILS 1001. Topics include the Army Profession and what it means to be a professional in the U.S. Army, the Army Leadership Requirements Model, intermediate map reading/orienteering, and basic field craft. Classroom 1 hour per week. Lab 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)
MILS 1101. Basic Marksmanship. 1 Hour.
Introduction to safe use of a rifle and practical application of rifle marksmanship. Course includes weapons safety, mechanics, capabilities, and fundamentals of marksmanship. Includes visit to fire at a local indoor rifle range. Materials and equipment furnished by Department of Military Science. (Typically offered: Fall)

\section*{MILS 2002. Leadership and Decision Making. 2 Hours.}

This course focuses on basic Army leadership doctrine and develops the student's skills by introducing them to small unit tactics. Students learn to apply critical thinking and problem solving by using Troop Leading Procedures (TLP). Additional topics include the value of diversity, understanding the officer`s role in leading change, management skills, and the fundamentals of the Army as a profession. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MILS 1001 and MILS 1011 or departmental consent. (Typically offered: Fall)

\section*{MILS 2012. Army Doctrine and Team Development. 2 Hours.}

Continuation of MILS 2002. Topics include Troop Leading Procedures (TLP), time management, military writing, and basic tactics. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MILS 1001, MILS 1011, and MILS 2002 or departmental consent. (Typically offered: Spring)

MILS 2101. Advanced Rifle Marksmanship. 1 Hour.
Course to teach students the fundamentals of Advanced Rifle Marksmanship. Class is conducted once a week with topics including: Air rifle, small bore firing, advanced practical exercises of different shooting positions and marksmanship competition with other universities. Prerequisite: MILS 1101. (Typically offered: Spring)

\section*{MILS 3004. Applied Leadership I. 4 Hours.}

This course focuses on the development of managerial and leadership abilities and the practical application of these skills during 'hands-on' training. Students learn advanced infantry tactics and demonstrate their leadership potential using this medium. Students are required to lead in drill and ceremony, physical training, and tactical situations. This course prepares the student to excel at the ROTC Advanced Camp (normally attended during the summer between the junior and senior year). One 48 hour weekend field training exercise is required per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Corequisite: Lab component. Prerequisite: Departmental consent and (MILS 1001, MILS 1011, MILS 2002, and MILS 2012; or completion of Army ROTC Basic Camp; or completion of basic training with any component of the U.S. Armed Forces). (Typically offered: Fall)

\section*{MILS 3014. Applied Leadership II. 4 Hours.}

Continuation of MILS 3004. This course prepares the student to excel at the ROTC Advanced Camp (normally attended during the summer between the junior and senior year). Requirements include one 48 hour weekend field training exercise per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Corequisite: Lab component. Prerequisite: Departmental consent and MILS 1001, MILS 1011, MILS 2002, MILS 2012 and MILS 3004; or completion of Army ROTC Basic Camp; or completion of basic training with any component of the U.S. Armed Forces. (Typically offered: Spring)

\section*{MILS 4001. Advanced Military Issues. 1 Hour.}

Individual study for advanced undergraduates. Students will research, write a paper, and give an oral presentation of a current military issue. Prerequisite: PMS approval. (Typically offered: Fall and Spring)

\section*{MILS 4004. Advanced Leadership I. 4 Hours.}

This course focuses on the study of various military organizations and their role in military operations. Discussion of command and staff management in military organizations, executive responsibility of Army commissioned officers, service customs, courtesies, and traditions. The senior year includes the study of personnel management, professional ethics, the military justice system, and the Army's training and maintenance management system. This course prepares students to assume responsibilities as a commissioned officer upon graduation. One 48 hour weekend field training exercise is required per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Corequisite: Lab component. Prerequisite: Departmental consent and MILS 3004 and MILS 3014. (Typically offered: Fall)

\section*{MILS 4011. Advanced Military Correspondence. 1 Hour.}

Practicum for advanced undergraduates. Students submit prepared military correspondence projects written in the military style using military forms and formats. Prerequisite: PMS approval. (Typically offered: Fall and Spring)

\section*{MILS 4014. Advanced Leadership II. 4 Hours.}

Continuation of MILS 4004. This course prepares students to assume responsibilities as a commissioned officer upon graduation. One 48 hour weekend field training exercise is required per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Corequisite: Lab component. Prerequisite: Departmental consent and MILS 3004, MILS 3014 and MILS 4004. (Typically offered: Spring)

\section*{MILS 5004. Applied Leadership I. 4 Hours.}

This course focuses on the development of managerial and leadership abilities and the practical application of these skills during 'hands-on' training. Students learn advanced infantry tactics and demonstrate their leadership potential using this medium. Students are required to lead in drill and ceremony, physical training, and tactical situations. This course prepares the student to excel at the ROTC Advanced Camp (normally attended during the summer between the junior and senior year). One 48 hour weekend field training exercise is required per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday Thursday) per week. Corequisite: Lab component. Prerequisite: Must be a graduate student, departmental consent, as well as MILS 1001, MILS 1011, MILS 2002 and MILS 2012; or completion of Army ROTC Basic Camp; or completion of Basic Training with any component of the U.S. Armed Forces. (Typically offered: Fall)
MILS 5014. Applied Military Leadership. 4 Hours.
Development of managerial and leadership abilities, maximizing performanceoriented 'hands-on' training. Students learn advanced infantry tactics and demonstrate their leadership potential using this medium. Students are required to lead in drill and ceremony, physical training, and tactical infantry situations. The training is intended to prepare the student for the ROTC Advanced Camp experienced normally in the summer prior to the 6000 level courses. Lecture 3 hours, laboratory 3 hours per week, plus 3 hours of physical training are conducted weekly. One weekend field training exercise is required per semester. Corequisite: Lab Component. Prerequisite: Departmental consent. (Typically offered: Spring)

\section*{MILS 6004. Advanced Leadership I Graduate. 4 Hours.}

This course focuses on the study of various military organizations and their role in military operations. Discussion of command and staff management in military organizations, executive responsibility of Army commissioned officers, service customs, courtesies, and traditions. This year includes the study of personnel management, professional ethics, the military justice system, and the Army's training and maintenance management system. This course prepares students to assume responsibilities as a commissioned officer upon graduation. One 48 hour weekend field training exercise is required per semester. Lecture 2 hours, laboratory 3 hours, physical training 3 hours (conducted Tuesday - Thursday) per week. Prerequisite: Graduate standing, departmental consent, and MILS 3004 and MILS 3014. Corequisite: Lab component. (Typically offered: Fall)

MILS 6014. Advanced Leadership II. 4 Hours.
Advanced Leadership II, focuses on your development as a leader and an Army officer. You will develop the knowledge, skills, and abilities to plan, resource, and assess training at the small unit level. You will also learn about Army programs that relate to counseling for subordinates, the evaluation of performance and career planning, values and ethics, and legal responsibilities. At the conclusion of this course, you will be familiar with how to plan, prepare, execute, and continuously assess the conduct of training at the company grade officer level. Corequisite: Lab Component. Prerequisite: Department Consent. (Typically offered: Spring)

\section*{Art (ARTS)}

\section*{Courses}

\section*{ARTS 1013. Drawing for Non-majors: Observation. 3 Hours.}

Designed for non-studio majors, this course investigates the complexities of drawing from direct observation. Through demonstrations, guided working time, and critiques, students will refine their own ability to translate the observed world into 2-dimensional drawn forms. Knowledge of historical and contemporary artists will compliment studio production. (Typically offered: Summer)
ARTS 1023. Drawing for Non-majors: Experimental Methods. 3 Hours. Investigates drawing as a method for creative thinking and experimental imagemaking. Introduction to a wide range of materials and processes. Content includes visual design principles, creative ideation, and related artists who challenge the role of drawing. (Typically offered: Summer)

\section*{ARTS 1313. Two-Dimensional Design. 3 Hours.}

Studio problems in the use of line, shape, texture, value, and color and their relationships. (Typically offered: Fall and Spring)

ARTS 1323. Three-Dimensional Design. 3 Hours.
Studio problems with the elements of three-dimensional design: structure, space, form, surface, and their relationship. (Typically offered: Fall and Spring)

\section*{ARTS 1803. Photography for Non-Majors. 3 Hours.}

Addresses photography's currency within visual culture by investigating its relationship to both society and art, considering its evolution as an art form. Using a variety of tools and techniques, projects will emphasize composition, digital manipulation, and the role of intention in creating art. (Typically offered: Fall and Spring)

\section*{ARTS 1919C. Studio Foundation I. 9 Hours.}

Intensive, studio-format coursework in a variety of two-dimensional, threedimensional, and time-based media provides an introduction to fundamentals of art and design with emphasis on components of the creative process; research and critical thinking; investigation of materials; and instruction in software and fabrication techniques. 9 credit hours. Corequisite: Drill component. (Typically offered: Fall and Spring)

\section*{ARTS 1929C. Studio Foundation II. 9 Hours.}

Continuation of Studio Foundation I. Intensive intermediate studio projects in a variety of two-dimensional, three-dimensional, and time-based mediums; instruction in software and fabrication techniques; and the introduction of professional practices, including the assemblage and maintenance of a foundational portfolio; required attendance at weekly seminar. Corequisite: Drill component. Prerequisite: ARTS 1919C (Typically offered: Fall and Spring)

ARTS 3003. Drawing I: Elements. 3 Hours.
This course explores the language of drawing and its creative application. Traditional materials and methods are complemented with implicit challenges to think expansively about drawing's potential. Investigations enable each individual to learn to see with acuity and develop fine motor skills to create meaningful and accomplished drawings in different forms. Prerequisite: ARTS 1919C and ARTS 1929C; or ARTS 1013 and instructor consent. (Typically offered: Fall and Spring)

\section*{ARTS 3013. Figure Drawing I. 3 Hours.}

Investigation of the human form through drawing, with special emphasis on gestural modes of working. Careful analysis of human anatomy, including internal and externally visible structures, position and movement of joints, as well as anatomical proportions and their variations among different individuals. Prerequisite: ARTS 3003 or ARTS 3103. (Typically offered: Spring)

\section*{ARTS 3023. Drawing II: Invented Images. 3 Hours.}

This course investigates drawing strategies for constructing images from the starting point of imagination and invention as a means to create a body of personalized work. Special emphasis is given to the process of generating and organizing images through a wide range of drawing media, collage, color, and digital tools. Prerequisite: ARTS 3003 or GDES 2313. (Typically offered: Spring)
ARTS 3033. Drawing II: Perceptual Studio. 3 Hours.
This course investigates drawing strategies for generating images derived from direct perceptual experience in order to create a body of personalized work. Emphasis is placed on methods for translating perceptual experience into believable and complex drawn forms. Investigations explore on-site location drawing, selfdesigned studio environments, and the use of color. Prerequisite: ARTS 3003 or GDES 2313. (Typically offered: Fall)

\section*{ARTS 3043. Illustration: Communicating With Drawing. 3 Hours.}

How to create images that carry specific, unambiguous meanings - to speak with pictures. Projects will explore various modes of visual communication and relationships to texts, including narrative, editorial and sequential illustrations. Prerequisite: ARTS 3023 or ARTS 3033 or ARTS 3403 or GDES 2313 or instructor consent. (Typically offered: Irregular)

\section*{ARTS 3053. Drawing in the Expanded Field. 3 Hours.}

A philosophical examination of the discipline of drawing through experimental works. Initial projects will question the essential aspects of drawing-ness, pushing beyond the typical materials and processes to make drawings with unusual properties. In the second half of the course, students will take on a sustained individual exploration.
Prerequisite: ARTS 3023 or ARTS 3033 or ARTS 3503 or ARTS 3813 or ARTS 3203 or ARTS 3213 or instructor consent. (Typically offered: Irregular)

\section*{ARTS 3103. Painting I. 3 Hours.}

An introduction to oil painting, focusing on painting from direct observation. Topics to be covered include: materials, palette, understanding perceptual color and color theory, and development of the painting through use of layers, value, mark-making, composition, light, and space. Prerequisite: ARTS 3013 or (ARTS 1919C and ARTS 1929C). (Typically offered: Fall and Spring)

\section*{ARTS 3123. Painting: Water Media. 3 Hours.}

Introduction to materials and techniques of watercolor and acrylic painting. Form, composition, and content to be studied through observation and imagination.
Traditional techniques as well as experimentation and personal expression are to be explored. Prerequisite: ARTS 3103 or ARTS 3003. (Typically offered: Irregular)

\section*{ARTS 3133. Figure Painting. 3 Hours.}

Introduction to representational and interpretive figure painting and to contemporary issues in figurative painting. The model as well as other visual sources will be used as a basis for observation, interpretation and invention. Prerequisite: ARTS 3013, ARTS 3103. (Typically offered: Irregular)
ARTS 3143. Painting \& Digital Tools. 3 Hours.
Introduces students to hybrid working methods, between analog painting and digital processes, to produce innovative personalized imagery. Digital tools such as image software, scanners, printers, plotters and laser cutters will extend the possibilities of painting through generating source material, creating cut forms, custom stencils, manipulating and reconfiguring imagery. Prerequisite: ARTS 3103. (Typically offered: Irregular)

ARTS 3153. Painting Perception Into Abstraction. 3 Hours.
Investigation of the abstraction of visual phenomena. Various starting points and approaches will be studied. Emphasis on the analysis of form, the creation of pictorial structure, and the conceptual basis of perceptual abstraction. Prerequisite: ARTS 3103. (Typically offered: Irregular)

\section*{ARTS 3163. Abstract Painting. 3 Hours.}

An introduction to the material, formal, and conceptual aspects of abstract painting. Projects will explore a variety of starting points for the invention of form in painting. Examines the construction of meaning in modern and contemporary abstract painting through studio work, discussion, writing assignments and lectures.
Prerequisite: ARTS 3103. (Typically offered: Irregular)

\section*{ARTS 3173. Contemporary Representational Painting. 3 Hours.}

Contemporary approaches to the use of imagery in painting. Projects emphasize the systematic alteration of color, form and space through strategies of reduction, omission, distortion and compositing. Prerequisite: ARTS 3103. (Typically offered: Irregular)

ARTS 3183. Landscape Painting. 3 Hours.
Exploration of perceptual and conceptual approaches to painting the landscape. Both traditional and experimental techniques of oil painting will be studied. Includes outdoor on-site painting. Prerequisite: ARTS 3103. (Typically offered: Irregular)

\section*{ARTS 3203. Fundamentals of Modeling, Mold Making \& Casting. 3 Hours.} An introduction to fundamental additive and subtractive sculpture techniques and methods of seeing and working that give expression to material form. Beginning techniques in modeling, carving, mold making, and basic casting are demonstrated. Lectures, readings, and critiques will develop student awareness of traditional building techniques which inform contemporary sculpture practices. Prerequisite: ARTS 1323; or ARTS 1919C and ARTS 1929C. (Typically offered: Spring and Summer)

\section*{ARTS 3213. Construction Methods I. 3 Hours.}

A focus on material sensitivity through thoughtful and skillful additive approaches. Woodworking and metalworking are introduced as methods to examine structural and spatial possibilities. Through examining and questioning the interplay of form, material, technique, and content, students will develop their knowledge of traditional fabrication processes, which inform contemporary sculpture. Prerequisite: ARTS 1323; or ARTS 1919C and ARTS 1929C. (Typically offered: Fall)

\section*{ARTS 3223. Issues in Contemporary Sculpture. 3 Hours.}

An experimental lab focused on critical issues in contemporary sculpture. Students will be challenged to dissect their process of making, to question the nature of sculpture and art-making in the 21st century, and the context in which art is created, shown, and distributed. Prerequisite: ARTS 1323 or (ARTS 1919C and ARTS 1929C). (Typically offered: Fall and Summer)

\section*{ARTS 3293. Seminar in Sculpture + Experimental Media. 3 Hours.}

Introduction to techniques and theories that foster new experimental forms of artistic practice and to historical and contemporary interplay between methodologies including: object making and contextual design, material history and environmental sustainability, the moving image, sound, performance, mechatronics/electronics, interactivity, digital fabrication, social practice, speculative design, and interventions in public space. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

ARTS 3403. Printmaking: Introduction. 3 Hours.
Introduction to the technical, formal, conceptual, and historical aspects of printmaking through methods of relief, intaglio (etching), monoprint, serigraphic (screenprinting), and lithographic printing techniques. Prerequisite: ARTS 1919C and ARTS 1929C; or ARCH 1025; or LARC 1325; or IARD 1045. (Typically offered: Fall, Spring and Summer)

\section*{ARTS 3423. Printmaking: The Collaborative Print. 3 Hours.}

Collaborative exploration in the technical, formal, conceptual, and historical aspects of lithographic printmaking processes including wet and dry media on stone and plate, photo processes, and various inking methods. Prerequisite: ARTS 3403 or ARTS 3443; or ARCH 1025; or IARD 1045; or LARC 1325. (Typically offered: Spring)

\section*{ARTS 3433. Printmaking: Painterly Prints. 3 Hours.}

Exploration in the technical, formal, conceptual, and historical aspects of monoprint and relief printmaking through traditional and current methods of woodcut, linoleum, CNC routing, digital technologies, and other methods to create small editions and unique, singular works on paper. Prerequisite: ARTS 3403; or ARCH 1025; or IARD 1045; or LARC 1325. (Typically offered: Fall)

\section*{ARTS 3443. Printmaking: Screenprinting. 3 Hours.}

Introduction to serigraphic techniques, including cut stencils, photosensitive stencils, resist methods, additive and reductive printing, and other processes. Prerequisite: ARTS 1919C and ARTS 1929C; or ARTS 3403; or ARCH 1025; or IARD 1045; or LARC 1325. (Typically offered: Fall, Spring and Summer)

\section*{ARTS 3463. Printmaking: Digital Inquiries. 3 Hours.}

Exploration of the technical, formal, and conceptual aspects of both traditional printmaking techniques and contemporary digital media and their application to contemporary art and visual culture. Prerequisite: ARTS 3403 or ARTS 3443; or ARCH 1025; or LARC 1325; or IARD 1045. (Typically offered: Spring)

\section*{ARTS 3473. Printmaking: Publishing Power. 3 Hours}

Exploration in the technical, formal, conceptual, and historical aspects of book arts and contemporary publishing practices through various book forms, book construction, binding, design, content, letterpress printing, risograph printing, and conceptual considerations. Prerequisite: ARTS 3403 or ARTS 3443; or ARCH 1025; or IARD 1045; or LARC 1325. (Typically offered: Fall)

\section*{ARTS 3503. Ceramics: Handbuilding I. 3 Hours.}
this introductory course investigates the techniques, materials, and themes common to hand-built ceramincs. Students will also be introduced to ceramic studio processes, including clay and glaze mixing, low temperature gas and electric firing, and studio safety procedures. Prerequisite: ARTS 1013 and ARTS 1323; or ARTS 1919C and ARTS 1929C. (Typically offered: Fall and Summer)

\section*{ARTS 3523. Ceramics: Wheelthrowing I. 3 Hours.}

This introductory course investigates the techniques, materials, and themes common in wheel-thrown ceramics. Students will also be introduced to ceramic studio processes, including clay and glaze mixing, high temperature gas and electric firing, and studio safety procedures. Prerequisite: ARTS 1013 and ARTS 1323; or ARTS 1919C and ARTS 1929C. (Typically offered: Spring and Summer)

\section*{ARTS 3533. Ceramics: Wheelthrowing II. 3 Hours}

This concept-driven intermediate-level course focuses on expanding the students' skills and knowledge of wheel-thrown and hand-built forms. Additional emphasis will be placed on clay and glaze testing, and understanding the processes of firing in electric, gas, salt/soda, and wood-firing kilns. Prerequisite: ARTS 3523. (Typically offered: Irregular)

ARTS 3543. Ceramics: Slip-Casting. 3 Hours.
This concept-driven intermediate-level course focuses on the techniques and approaches common to ceramic slip-casting. Plaster mold-making, model development and preparation, slip mixing, and slip-casting are emphasized. Students will utilize low and high temperature gas and electric firings. Prerequisite: ARTS 3503. (Typically offered: Spring)

\section*{ARTS 3723. Experiments in Moving Image I. 3 Hours.}

An introduction to experimental video art, providing a theoretical and practical foundation for creating video for installation, performance or screen, set within a context of historical and contemporary video art and experimental film. Students will complete assignments creating new, original moving image works. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall and Spring)

ARTS 3733. Experiments in Sound. 3 Hours.
An introduction to experimental sound art, providing a theoretical and practical foundation for creating sound for installation, performance or composition, set within a context of historical and contemporary sound art and electroacoustic composing. Students will complete assignments creating new, original sound works. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall)

ARTS 3803. Photo I: Darkroom. 3 Hours.
Photography I: Darkroom is an introduction to the basics of camera operation and exposure, analog black and white film and print processing, and photographic technique and theory. An emphasis on how to communicate through photographs is pursued in assignments, critiques, slide lectures, and demonstrations. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall and Spring)

\section*{ARTS 3813. Photo I: Digital. 3 Hours.}

Photo I: Digital starts with and expands upon the basics of digital SLR photography, editing in Adobe Lightroom, basic digital file management, and printing. This includes an introduction to the applications of composition, light, and color in photography. The course also delves into image interpretation and photographic seeing. There will be emphasis placed on communicating ideas effectively through photography as well as the ability to speak about photography analytically, formally, and conceptually. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall and Spring)

ARTS 3823. Alternative Photographic Methods. 3 Hours.
Alternative Photographic Methods focuses on the study and practice of alternative and historic photographic processes with a special interest in how materiality influences the content of a photograph. A heavy influence is placed on experimentation as the course explores the hybridization of analog chemical processes with digital technology and contemporary content. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

\section*{ARTS 3833. Documentary Photography. 3 Hours.}

This course introduces students to a variety of methods used in the area of documentary photography in order to build the conceptual and technical skills necessary to create extended projects that focus on documenting and visually exploring subjects in an in-depth manner. Discussion of Photography's tricky relationship with objectivity is explored throughout the semester. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

\section*{ARTS 3843. Studio Light. 3 Hours.}

Explores the technical, creative, and professional possibilities within making photographs using controlled light in both the studio setting and on location. Emphasizes how the studio setting has been used by photographers throughout history as well as its vital role in contemporary photography. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

\section*{ARTS 3853. The Photobook. 3 Hours.}

This course is based on the both the historic and contemporary relevance of the photobook as an art object. Students will learn about all aspects of producing a photobook from generating content, designing a structure, case-binding methods, fine art inkjet printing, and book construction. Special attention will be paid to sequencing photographs to convey conceptual thought and critique of those ideas. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

\section*{ARTS 3903. Arts Entrepreneurship. 3 Hours.}

Explores vehicles for socially conscious, arts-based, entrepreneurial action to gain an understanding of the innovative role that the creative process plays. With a bias toward action and collaboration, students will explore creative content, viability, and social, environmental, and cultural accountability. (Typically offered: Fall)

\section*{ARTS 3913. Social Justice and the Arts. 3 Hours.}

Takes a critical look at historic and contemporary models of collaborative and interdisciplinary practices in the visual arts. Examines art as a catalyst for community impact, develops strategies for addressing the needs and goals of a specific partner, and implements support for those strategies. Service learning course. (Typically offered: Spring)

\section*{ARTS 4003. Drawing Projects. 3 Hours.}

Individual studio projects in Drawing. Each student will propose a project to pursue over the course of the semester. Prerequisite: (ARTS 3023 and ARTS 3033) or ARTS 3043 or ARTS 3053 or Studio Art BFA concentration in drawing or by Instructor permission. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

\section*{ARTS 404V. Special Problems in Drawing. 1-6 Hour.}

Individual projects in drawing arranged with the instructor. Prerequisite: ARTS 3003. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 4153. Topics in Advanced Painting. 3 Hours.}

Topics in advanced and experimental painting. Prerequisite: 6 hours of painting. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{ARTS 417V. Special Problems in Painting. 1-6 Hour.}

Individual technique and subject matter projects to be arranged with the instructor. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 4183. Contemporary Issues in Painting. 3 Hours.}

Examination of concepts and themes relevant to the contemporary practice of painting, accompanied by the production of an individually determined body of work. Emphasis on studio work supplemented by research, critique, reading and writing. Pre- or Corequisite: Three hours of painting from ARTS 3123, ARTS 3133, ARTS 3153, ARTS 3163, ARTS 3173, ARTS 3183, or ARTS 4153. Prerequisite: ARTS 3103. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 4193. Advanced Painting. 3 Hours.}

Intensive course for those art majors concentrating in painting. Extended, individually determined projects will emphasize production of a well researched, conceptually grounded and cohesive body of work. Supplemented by reading, writing and discussion of contemporary issues in painting. Pre- or Corequisite: Three hours of painting from ARTS 3123, ARTS 3133, ARTS 3153, ARTS 3163, ARTS 3173, ARTS 3183, or ARTS 4153. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.
ARTS 4203. Modeling, Mold Making, \& Casting II. 3 Hours.
Merging historical methodology and advanced technology from lost-wax metal casting to digital fabrication, a continuation of additive and subtractive techniques in modeling, carving, moldmaking, and casting. Specific problems utilizing various media are preceded by readings, lectures, and demonstrations. Prerequisite: ARTS 3203. (Typically offered: Fall)

\section*{ARTS 4213. Mixed Media \& Spatial Context. 3 Hours.}

An exploration in assemblage, installation, environmental art, light, and kinetics as they apply to contemporary sculptural language. Specific problems utilizing various media are preceded by readings, lectures, and demonstrations. Prerequisite: One course from the following: ARTS 3203 or ARTS 3213 or ARTS 3223 or ARTS 3723 or ARTS 3733. (Typically offered: Fall and Spring)

ARTS 4223. Advanced Sculpture + Experimental Media. 3 Hours.
A directed analysis of form and its relationship to content based on the development of work in students' medium of choice. Students will acquire the technical skills needed to meet personal vision through guidance of the instructor. Research evidenced in work, discussions, and critiques is emphasized. Prerequisite: Two of the following courses: ARTS 4203, ARTS 4213, ARTS 4243, ARTS 4743, ARTS 4753, or ARTS 4783. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

ARTS 423V. Special Problems in Sculpture. 1-6 Hour.
Individual projects in sculpture with emphasis on materials exploration. Prerequisite: ARTS 4223. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

ARTS 4243. Construction Methods II. 3 Hours.
A deeper investigation into construction techniques to further examine structural and spatial possibilities and question the relationship between traditional and contemporary sculptural materials. Through a more profound and critical analysis of form, material, process, content, and context, construction methodology will be established as a foundation for individual practice. Prerequisite: ARTS 3213. (Typically offered: Spring)

\section*{ARTS 4413. Printmaking: Archives \& Counter-Archives. 3 Hours.}

Advanced individual exploration of institutional and non-normative archives, theories, systems, and practices to create a research-informed body of work. Prerequisite: ARTS 3403 and ARTS 3443; plus one of the following: ARTS 3423 or ARTS 3433 or ARTS 3463 or ARTS 3473. (Typically offered: Fall)

ARTS 4423. Printmaking: The Expanded Field in the Expanding Field. 3 Hours. Advanced individual and collaborative exploration of artistic production through publication, events, and happenings. Prerequisite: ARTS 3403 and ARTS 3443; plus one of the following: ARTS 3423 or ARTS 3433 or ARTS 3463 or ARTS 3473 or ARTS 4413. (Typically offered: Spring)

\section*{ARTS 4453. Printmaking: Collaborative Publishing Workshop. 3 Hours.}

Advanced exploration of the inner workings of the professional publishing workshop environment through the production of a fine art print edition designed in collaboration with a visiting artist. Prerequisite: ARTS 4483 or ARTS 4413 or ARTS 4423. (Typically offered: Fall and Spring)

\section*{ARTS 4483. Printmaking: Advanced Studio. 3 Hours.}

Continued advanced study in various printmaking media with emphasis on individual technical research, development of personal imagery, and refinement of skills. Prerequisite: ARTS 3403 and ARTS 3443; plus one of the following: ARTS 3423 or ARTS 3433 or ARTS 3463 or ARTS 3473. (Typically offered: Spring)

\section*{ARTS 449V. Special Problems in Prints. 1-6 Hour.}

Advanced individual study of one or more printmaking processes with emphasis on individual technical research, development of personal imagery, and refinement of skills. Prerequisite: ARTS 3403. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 4503. Intermediate Ceramics. 3 Hours.}

Focuses on discovering and developing a personal approach to the creation of ceramic objects. Students will explore and test clay bodies, surface treatments, and firing methods while simultaneously exploring ideas, formats, contexts, and interpretations to their work. Any or all ceramic processes may be used. Pre- or corequisite: ARTS 3503 or ARTS 3523 or ARTS 3543. (Typically offered: Fall)

\section*{ARTS 4513. Technical Ceramics. 3 Hours.}

Advanced study of ceramic materials and processes. Clay composition, clay body formulation and analysis, glaze composition and formulation, firing methods (low, mid, and high-temperature gas, electric and atmospheric firings), and kiln design will be covered in depth. Prerequisite: ARTS 4503. (Typically offered: Irregular)
ARTS 4573. Advanced Ceramics. 3 Hours.
This course focuses on the generation and development of ideas and objects to form a cohesive body of work. Students will lead their own explorations, technically and conceptually, while working toward a professional-level standard of output. Any or all ceramic processes may be used. Prerequisite: ARTS 3503 and ARTS 3523 and ARTS 3543 and ARTS 4503. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 458V. Special Problems in Ceramics. 1-3 Hour.}

Individual projects in ceramic techniques. Prerequisite: ARTS 3503 or ARTS 3523. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 4743. Experiments in Moving Image II. 3 Hours.}

Further exploration of experimental video art, pushing the theoretical and practical foundation students build in "Experiments in Moving Image I". Expands on creating video for installation, performance or screen, set within a context of historical and contemporary video art and experimental film. Prerequisite: ARTS 1919C, ARTS 1929C and ARTS 3723. (Typically offered: Fall and Spring)

\section*{ARTS 4753. Sound and Space. 3 Hours.}

Continued exploration of experimental sound art in order to build a deeper theoretical and practical understanding of creating sound for installation, performance, or composition within a context of historical and contemporary sound art and electroacoustic composing. Prerequisite: ARTS 3733. (Typically offered: Spring)

\section*{ARTS 4783. Critical Issues in Experimental Media Art. 3 Hours.}

This course serves as a special topics course for Experimental Media Art. Students will explore a variety of contemporary critical issues and methodologies, all while building a deeper theoretical and practical understanding of creating for the twentyfirst century. Prerequisite: (ARTS 1919C or ARTS 1929C) and (ARTS 3723 or ARTS 3733). (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ARTS 4823. Advanced Digital: The Constructed Image. 3 Hours.}

Advanced Digital: The Constructed Image explores processes and concepts related to creating photographs that are staged, manipulated, or constructed in some manner both through digital processing and fabricating images for the camera. Emphasis will be placed on a questioning of photographic truth and how to communicate effectively through a series of photographs. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

\section*{ARTS 4833. Large Format Photography. 3 Hours.}

Large Format Photography introduces students to the \(4 \times 5\) view camera and the technical processes of larger film formats. Advanced darkroom work and digital process are combined to explore professional printmaking. Projects allow students to explore concepts in depth and relate the large format camera to contemporary photographic practice. Prerequisite: ARTS 3803 and ARTS 3813. (Typically offered: Irregular)

\section*{ARTS 484V. Special Problems in Photography. 1-6 Hour.}

Individual instruction for advanced undergraduates and graduate students. Special projects in photography designated by students in collaboration with faculty. Prerequisite: ARTS 3803 and (ARTS 3813 or ARTS 4823 or ARTS 4833). (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 4893. Advanced Projects in Photography. 3 Hours.}

Emphasizes diverse aspects of recognizing and fostering individualized creative processes, critical thinking, and problem-solving skills in order to create a sustainable and professional studio practice. Prerequisite: ARTS 3803 and ARTS 3813 and Junior or Senior level standing. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.
ARTS 490VH. Honors Thesis in Studio Art. 1-6 Hour.
Special problems in studio art. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.
ARTS 491V. Internships in Art. 1-6 Hour.
Credit for practical experience gained through internships in studio art, gallery practices and/or art education. Report required from intern and field supervisor on significant accomplishments and/or progress. Prerequisite: Junior standing and art major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 4923. Professional Development. 3 Hours.}

The creation and presentation of a portfolio of work in the student's area of concentration, accompanied by creation of relevant materials for successful professional practice. Art Education students may choose ARED 476V, Student Teaching, ( 12 credit hours) as a substitution. Prerequisite: Art majors only. Requires junior, senior or graduate standing. (Typically offered: Fall and Spring)

ARTS 493V. Fine Arts Gallery Internship. 1-3 Hour.
Study all aspects of operating the Fine Arts Gallery. Research and preparation for exhibitions, organize and install exhibits, care of art works, create and distribute publicity, arrange interviews with newspapers, and other media. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
ARTS 495V. Special Topics. 1-6 Hour.
May be offered in a subject not specifically covered by the courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ARTS 4993. Studio Art BFA Capstone. 3 Hours.}

A capstone experience for graduating BFA students across all Studio Art concentrations. Provides intensive mentorship and instruction to prepare students with acute visual literacy and relevant frameworks concerning career paths in contemporary art practice, curation, and education. Prerequisite: Studio Art BFA majors only and senior standing. (Typically offered: Spring)

\section*{ARTS 5513. Technical Ceramics. 3 Hours.}

Advanced study of ceramic materials and processes. Clay composition, clay body formulation and analysis, glaze composition and formulation, firing methods (low, mid, and high-temperature gas, electric and atmospheric firings), and kiln design will be covered in depth. Graduate degree credit will not be given for both ARTS 4513 and ARTS 5513. Prerequisite: ARTS 4503. (Typically offered: Irregular)

\section*{ARTS 5723. Experiments in Moving Image I. 3 Hours.}

An introduction to experimental video art, providing a theoretical and practical foundation for creating video for installation, performance or screen, set within a context of historical and contemporary video art and experimental film. Students will complete assignments creating new, original moving image works. (Typically offered: Fall and Spring)

\section*{ARTS 5783. Critical Issues in Experimental Media Art. 3 Hours.}

Explores a variety of contemporary critical issues and methodologies in Experimental Media Art, while building a deeper theoretical and practical understanding of creating for the twenty-first century. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ARTS 5813. Digital Photography. 3 Hours.}

Introduction to digital photography production, techniques and theory. Digital input from scanning (flatbed \& slide/negative), digital cameras, video and internet sources. Computer assisted manipulation of imagery for correction and abstraction. Output to a digital printing systems, analog systems (film recorder), servers and Internet. (Typically offered: Fall and Spring)

\section*{ARTS 5833. Advanced Black and White Photography. 3 Hours.}

Advanced black and white theory, practice and techniques including: Zone System, large format camera and studio lighting. Graduate degree credit will not be given for both ARTS 4833 and ARTS 5833. Prerequisite: ARTS 3803. (Typically offered: Irregular)

\section*{ARTS 584V. Special Problems in Photography. 1-6 Hour.}

Individual instruction for advanced undergraduates and graduate students. Special projects in photography designated by students in collaboration with faculty. Graduate degree credit will not be given for both ARTS 484 V and ARTS 584V. Prerequisite: ARTS 3803 and (ARTS 3813 or ARTS 4823 or ARTS 4833). (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
ARTS 5883. Bookmaking. 3 Hours.
Introduction to the creation of unique, limited edition artist's bookworks -- with emphasis on technical knowledge and conceptual understanding of the book form as a means of artistic expression. (Typically offered: Irregular)

\section*{ARTS 5913. Graduate Seminar in Studio Art. 3 Hours.}

Special seminars at the graduate level in Studio Art. Subject matter changes depending on student interest and faculty expertise. Prerequisite: Admission to MFA program. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ARTS 5923. MFA First Year Seminar. 3 Hours.}

Introduction to graduate level study in art, including pedagogy related to teaching art at the college level. Topics to be covered include: development of research interests, critical thinking within studio practice, situating work in the contemporary context, expectations at the graduate level, and an introduction to techniques and theories of studio art education. Prerequisite: Admission to MFA program. (Typically offered: Fall)

\section*{ARTS 5933. MFA Third Year Seminar. 3 Hours.}

Preparation for a professional art practice, including the examination of theoretical and practical aspects of career development for contemporary artists. Additional focus on research strategies, structure, and development of the MFA exhibition statement. Prerequisite: ARTS 5923. (Typically offered: Fall)

\section*{ARTS 596V. Fine Arts Gallery Internship. 1-3 Hour.}

Study all aspects of operating the Fine Arts Gallery. Research and preparation for exhibitions, organize and install exhibits, care of art works, create and distribute publicity, arrange interviews with newspapers, and other media. Graduate degree credit will not be given for both ARTS 493V and ARTS 596V. (Typically offered: Fall, Spring and Summer)

ARTS 601V. Master of Fine Arts Exhibition. 1-6 Hour.
Production and presentation of a one person exhibition of art work. The M.F.A. candidate will be responsible for making three acceptable slide sets of the exhibition and exhibition statements. Prerequisite: M.F.A. candidacy. (Typically offered: Fall, Spring and Summer)

\section*{ARTS 602V. Graduate Drawing. 1-6 Hour.}

Individual problems in drawing techniques. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{ARTS 6033. Graduate Drawing Studio. 3 Hours.}

Intensive studio practice in drawing combined with reading, writing, and discussion of relevant contemporary issues in the fields of painting and drawing. Includes regular critiques, both with the group and in individual consultations with the instructor. Prerequisite: Admission to MFA program in Studio Art. (Typically offered: Fall and Spring) May be repeated for up to 18 hours of degree credit.

ARTS 612V. Graduate Painting. 1-6 Hour.
Individual problems in painting techniques. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ARTS 6133. Graduate Painting Studio. 3 Hours.}

Intensive studio practice in painting combined with reading, writing, and discussion of relevant contemporary issues in the fields of painting and drawing. Includes regular critiques, both with the group and in individual consultations with the instructor. Prerequisite: Admission to MFA program in Studio Art. (Typically offered: Fall and Spring) May be repeated for up to 18 hours of degree credit.

ARTS 622V. Graduate Sculpture. 1-6 Hour.
Individual problems in sculpture techniques. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for degree credit.
ARTS 6233. Graduate Sculpture + Experimental Media Studio. 3 Hours. Intensive studio practice in sculpture and experimental media combined with reading, writing, and discussion of relevant contemporary issues in the field of sculpture and new media. Includes regular critiques, both with the group and in individual consultations with the instructor. Prerequisite: Admission to MFA program in Studio Art. (Typically offered: Spring) May be repeated for up to 18 hours of degree credit.

ARTS 642V. Graduate Printmaking. 1-6 Hour.
Individual problems in printmaking techniques. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ARTS 6433. Graduate Printmaking Studio. 3 Hours.}

Intensive studio practice in printmaking combined with reading, writing, and discussion of relevant contemporary issues in the fields of printmaking. Includes regular critiques, both with the group and in individual consultations with the instructor. Prerequisite: Admission to MFA program in Studio Art. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

ARTS 652V. Graduate Ceramics. 1-6 Hour.
Individual problems in ceramic techniques. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ARTS 6533. Graduate Ceramics Studio. 3 Hours.}

Discussion of contemporary ceramics issues in tandem with the development of a cohesive body of work. Students lead their own explorations, technically and conceptually, while working toward a professional standard of output. Includes regular critiques, with the class and individually with the instructor. Any ceramic processes may be used. Prerequisite: MFA Studio Art Graduate Standing. (Typically offered: Fall and Spring) May be repeated for up to 18 hours of degree credit.
ARTS 682V. Graduate Photography. 1-6 Hour.
Individual problems in photography. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

ARTS 6833. Graduate Photography Studio. 3 Hours.
Intensive studio practice with reading and discussion of contemporary issues in photography for MFA students. Prerequisite: Admission to MFA program in Art. (Typically offered: Fall and Spring) May be repeated for up to 18 hours of degree credit.

\section*{ARTS 695V. Special Topics. 1-6 Hour.}

Subject matter not covered in other courses. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{Art Education (ARED)}

\section*{Courses}

\section*{ARED 1003. Introduction to Art Education. 3 Hours.}

Covers foundational theories in art education, educational psychology, and philosophy. An 18-hour early field experience includes observation and participation in art classes in public schools and community settings. (Typically offered: Fall and Spring)
ARED 3003. Curriculum Design \& Teaching Practices in Art Education. 3 Hours.
Covers contemporary art education theories and their implication to curriculum design. Students will discuss sociocultural learning theories in relation to the artmaking process. (Typically offered: Fall and Spring)

\section*{ARED 3013. Inclusive Art Pedagogy. 3 Hours.}

This course provides future art educators with the current issues and practices necessary for teaching disabled students in an inclusive art class through inverse inclusion (rotating roles as teacher, assistant, student, and observer). It will involve readings, observations, reflections, discussion, and extensive experience applying curriculum and contemporary pedagogy to inclusive art education practice in a community-based setting. (Typically offered: Irregular)

\section*{ARED 3013H. Honors Inclusive Art Pedagogy. 3 Hours.}

Provides future art educators with the current issues and practices necessary for teaching art to students with disabilities through inverse inclusion and rotating roles as teacher, assistant, student, and observer. Focuses on contemporary pedagogy to art classroom inclusion practice in a community-based setting with service learning. Prerequisite: Honors standing. (Typically offered: Irregular)
This course is equivalent to ARED 3013.

ARED 3103. Diversity Theory \& Pedagogy. 3 Hours
Investigates various issues of diversity and equity in relation to art and education. It discusses the application of the theories of diversity and equity into teaching, community organizing, activism, and art practices. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with AAST 3103.

\section*{ARED 4003. Community Art. 3 Hours.}

Covers community-based art theories, classroom learning theories, and instructional strategies. It is also a teaching practicum course for community outreach; thus, students will design curriculum, implement lesson plans, and organize a final exhibition. Includes at least 24 hours of community teaching experience. Prerequisite: ARED 3003. (Typically offered: Spring)

\section*{ARED 4003H. Honors Community Art. 3 Hours.}

Covers community-based art theories, classroom learning theories, and instructional strategies. It is also a teaching practicum course for community outreach; thus, students will design curriculum, implement lesson plans, and organize a final exhibition. Includes at least 24 hours of community teaching experience. Prerequisite: ARED 3003 and honors standing. (Typically offered: Spring) This course is equivalent to ARED 4003

\section*{ARED 4633. Individual Research in Art Education. 3 Hours.}

Independent study in specific areas of art education. Prerequisite: 6 hours of art education. (Typically offered: Fall and Spring)

\section*{ARED 476V. Student Teaching in Art. 6-12 Hour.}

A minimum of 6 weeks will be spent in an off-campus school. During this time the student teacher will have an opportunity under supervision to observe, to teach and participate in other activities involving the school and community. Successful completion of a criminal background check required before student can begin student teaching. Prerequisite: ARTBFA major. (Typically offered: Fall and Spring)

\section*{ARED 4773. Professional Development in Art Education. 3 Hours.}

Students will reflect on their art education experiences and the roles of art educators in various educational settings. This capstone course prepares students for their professional careers in K-12 schools and community settings through journaling, discussions, and teaching portfolio review. (Typically offered: Fall and Spring)

ARED 486V. Internship in Art Education. 1-3 Hour.
Offers credit for practical experience gained through internships in community-based art education including museums and/or other organizations. A report is required from the intern and field supervisor on significant accomplishments and/or progress. Prerequisite: ARED 1003. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit

ARED 486VH. Honors Internship in Art Education. 1-3 Hour.
Offers credit for practical experience gained through internships in community-based art education including museums and/or other organizations. A report is required from the intern and field supervisor on significant accomplishments and/or progress. Prerequisite: ARED 1003 and honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is equivalent to ARED 486 V .
ARED 490VH. Honors Thesis in Art Education. 1-6 Hour.
Special problems in Art Education. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

ARED 4953. Special Topics in Art Education. 3 Hours.
Art education topics not included in regularly offered courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ARED 4953H. Honors Special Topics in Art Education. 3 Hours.
Art education topics not included in regularly offered courses. Pre- or Corequisite: ARED 3613. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

This course is equivalent to ARED 4953

ARED 5003. Introduction to Research Practices and Methodologies in Art Education. 3 Hours.
An overview of mixed research methodologies employed in the field of art education. Covers foundational knowledge and skills necessary for conducting research in education and related fields. (Typically offered: Spring)

ARED 5013. Diversity, Equity, and Inclusion in Art Education. 3 Hours.
Covers teaching strategies that deconstruct disabling, systemic, social constructions and explore how people are using comics, films, and other popular media to discuss/ expose issues of race, class, gender, sexuality, and gender identity, trauma, disease, and disability. (Typically offered: Spring)

\section*{ARED 5953. Special Topics in Art Education. 3 Hours.}

Art education topics not included in regularly offered courses. Graduate degree credit will not be given for both ARED 4953 and ARED 5953. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ARED 6003. Philosophical Foundations and Histories of Art Education. 3 Hours.

Examines classic theories in art education and their relevance to current developments in the field. Develop and conduct historical research projects, respond to writings on histories of art education, and explore how art education histories are represented. (Typically offered: Fall)

\section*{ARED 6013. Community-Based Art Education. 3 Hours.}

Provides an overview of current and historical art education programs in the community. Introduces foundational knowledge and skills necessary for funding support, development, and implementation. Focuses on intergenerational and collaborative cross-disciplinary programs, their significance, and implications. (Typically offered: Irregular)

\section*{ARED 6023. Destabilizing Queer Theory. 3 Hours.}

Highlights constricted and racialized ways in which people generally visualize class, gender, race, and sexualities. Students will discuss the criticality of complex dynamics of visual politics in class, gender, race, and sexualities, and theoretical issues posed and negotiated by queer theory. (Typically offered: Irregular) This course is cross-listed with AAST 6023.

ARED 6033. Transnational Feminist Perspectives in Art and Education. 3 Hours.
Explores transnational feminist frameworks aimed at investigation and women's activism. Focuses on how artists, educators, activists, and makers employ various artistic interventions to build transnational solidarities against global injustices. (Typically offered: Irregular)

\section*{ARED 6043. Art, Play, and Aesthetics in Childhood. 3 Hours}

Provides a comprehensive review of research and theory related to the study and practice of art, play and aesthetics in childhood, with specific attention given to contemporary research that extends, critiques, and exists alongside earlier understandings of how and why these practices matter to childhood. (Typically offered: Irregular)

\section*{ARED 6053. Disability Studies in Art Education. 3 Hours}

An overview of the current issues and practices related to disability studies and application in art education. Involves readings, observations, reflections, discussion, and extensive experience applying art curriculum and contemporary pedagogy to inclusive art education practice with disabled adults 18 years and older at a community-based setting. (Typically offered: Irregular)

ARED 6063. Curriculum and Pedagogical Theories in Art Education. 3 Hours. Examines, explores, and applies theory and research to curriculum and pedagogy. These curricular theories are situated both in general education and in art education in order to provide multiple frameworks for theorizing curricular change. (Typically offered: Fall)

\section*{ARED 6393. Independent Study - Art Education. 3 Hours.}

Independent study with varied emphasis on topics relating to Art Education and Visual Culture Studies. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

\section*{ARED 686V. Internship in Art Education. 3-6 Hour.}

Provides off-campus experiential learning opportunities that will allow students to apply theories into their professional practices. Course content is individualized with a student's internship advisor (an art education faculty member) and a field supervisor. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ARED 695V. Special Topics in Art Education. 1-6 Hour.}

Subject matter not covered in regularly offered courses, and relating to art education. May be repeated for different topics. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{ARED 6963. Visualizing Critical Race Theory. 3 Hours.}

An examination of critical theoretical approaches to the concepts of race and racism. Students will examine the ways in which these constructs perform a critical function in the construction of race(s) and racism(s) and their relevance to visual culture. (Typically offered: Fall and Spring)
This course is cross-listed with PLSC 6963, AAST 6963.
ARED 698V. Master's Thesis in Art Education. 1-6 Hour.
Master's thesis in art education. Prerequisite: ARED 5003, ARED 5013, and ARED 6003. (Typically offered: Fall and Spring) May be repeated for up to 150 hours of degree credit.

\section*{Art History (ARHS)}

\section*{Courses}

ARHS 1003. Basic Course in the Arts: Art Lecture (ACTS Equivalency = ARTA 1003). 3 Hours.

A general introduction to the visual arts. Lectures on theory and criticism, demonstrations, films, and slides. Three hours a week plus attendance at specified programs and exhibits. May not be presented toward satisfaction of the B.A. fine arts requirement by art majors. (Typically offered: Fall, Spring and Summer)
ARHS 1003H. Honors Basic Course in the Arts: Art Lecture. 3 Hours.
A general introduction to the visual arts. Lectures on theory and criticism, demonstrations, films, slides. Three hours a week plus attendance at specified programs and exhibits. May not be presented toward satisfaction of the B.A. fine arts requirement by art majors. (Typically offered: Irregular)
This course is equivalent to ARHS 1003.
ARHS 2913. Art History Survey I (ACTS Equivalency = ARTA 2003). 3 Hours.
Survey of art works from Stone Age through Medieval. Completion of ARHS 2913 and ARHS 2923 satisfies the content covered in ARHS 1003 for fulfillment of the fine arts university/state core. (Typically offered: Fall and Spring)
ARHS 2923. Art History Survey II (ACTS Equivalency = ARTA 2103). 3 Hours. Survey of art works from Renaissance to the present. Completion of ARHS 2913 and ARHS 2923 satisfies the content covered in ARHS 1003 for fulfillment of the fine arts university/state core. (Typically offered: Fall and Spring)

\section*{ARHS 3923H. Honors Colloquium. 3 Hours.}

Covers a special topic or issue. Offered as a part of the honors program.
Prerequisite: honors candidacy (not restricted to candidacy in art). (Typically offered: Irregular)

\section*{ARHS 4013. Case Studies in Art History. 3 Hours.}

Provides in-depth studies of selected artists, themes, or specific groups of art works. Only offered during intersession. Prerequisite: 6 hours of ARHS courses. (Typically
offered: Irregular) May be repeated for up to 9 hours of degree credit.

ARHS 4013H. Honors Case Studies in Art History. 3 Hours.
Provides in-depth studies of selected artists, themes, or specific groups of art works. Only offered during intersession. Prerequisite: 6 hours of ARHS courses and honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to ARHS 4013.

\section*{ARHS 4413. Greek Art and Archaeology. 3 Hours.}

Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.) from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. Prerequisite: ARHS 2913. (Typically offered: Spring and Summer Odd Years)
This course is cross-listed with CLST 4413.
ARHS 4413H. Honors Greek Art and Archaeology. 3 Hours.
Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.) from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. Prerequisite: ARHS 2913 and honors standing. (Typically offered: Spring and Summer Odd Years)
This course is cross-listed with CLST 4413, ARHS 4413.

\section*{ARHS 4423. Roman Art and Archaeology. 3 Hours.}

Roman Art and Archaeology focuses on how visual and material culture shaped and were shaped by Roman society (religion, politics, economy, gender, ethnicity, etc.) from the Iron Age through the Late Antique period. We encounter famous masterpieces, but also the material remains of everyday Romans in civic and domestic spaces. Prerequisite: ARHS 2913. (Typically offered: Spring and Summer Even Years)
This course is cross-listed with CLST 4423.
ARHS 4423H. Honors Roman Art and Archaeology. 3 Hours.
Roman Art and Archaeology focuses on how visual and material culture shaped and were shaped by Roman society (religion, politics, economy, gender, ethnicity, etc.) from the Iron Age through the Late Antique period. We encounter famous masterpieces, but also the material remains of everyday Romans in civic and domestic spaces. Prerequisite: ARHS 2913 and honors standing. (Typically offered: Spring and Summer Even Years)
This course is cross-listed with CLST 4423, ARHS 4423.

\section*{ARHS 451V. Internship in Art History. 1-3 Hour.}

Credit for practical experience gained through an internship in art history. Report required from intern and field supervisor on significant accomplishments and/or progress. Prerequisite: 9 hours of ARHS courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ARHS 4563. Pre-Columbian Art. 3 Hours.}

An introduction to pre-Columbian art from Mexico (3000 BC- 1521 AD) through a survey of works of art from different media: sculpture, architecture, and mural painting. Topics examined include: sacred images, political uses of sculpture, architecture and cosmogony, as well as the relationship between the material and content. (Typically offered: Irregular)

\section*{ARHS 4563H. Honors Pre-Columbian Art. 3 Hours.}

An introduction to pre-Columbian art from Mexico (3000 BC- 1521 AD) through a survey of works of art from different media: sculpture, architecture, and mural painting. Topics examined include: sacred images, political uses of sculpture, architecture and cosmogony, as well as the relationship between the material and content. (Typically offered: Irregular)
This course is equivalent to ARHS 4563.

\section*{ARHS 4573. Artists of New Spain. 3 Hours.}

An overview of colonial art in colonial New Spain. Focused on native agency, social function of art, and cross-cultural communication. Topics include indigenous materials and techniques, the use of images in legal contexts, and ritual liturgy. Some consideration will be given to artworks from the viceroyalty of Peru. (Typically offered: Irregular)

\section*{ARHS 4573H. Honors Artists of New Spain. 3 Hours.}

An overview of colonial art in colonial New Spain. Focused on native agency, social function of art, and cross-cultural communication. Topics include indigenous materials and techniques, the use of images in legal contexts, and ritual liturgy.
Some consideration will be given to artworks from the viceroyalty of Peru. (Typically offered: Irregular)
This course is equivalent to ARHS 4573.

\section*{ARHS 4613. African Art and Society. 3 Hours.}

Situates the artistic production of modern Africa (1800-present) within a sociocultural framework, taking into consideration the role of the artist, the methods of production, the relationship between form and function, and the impact of geopolitical shifts (including intercontinental trade, colonialization, and globalization) on the artistic practice. Prerequisite: ARHS 2923. (Typically offered: Irregular)

\section*{ARHS 4613H. Honors African Art and Society. 3 Hours.}

Situates the artistic production of modern Africa (1800-present) within a sociocultural framework, taking into consideration the role of the artist, the methods of production, the relationship between form and function, and the impact of geopolitical shifts (including intercontinental trade, colonialization, and globalization) on the artistic practice. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular)
This course is equivalent to ARHS 4613.

\section*{ARHS 4623. African American Art History. 3 Hours.}

Surveys African American art from the seventeenth century to the present. It begins with a discussion of the transatlantic slave trade and it examines art produced in what Pratt terms the "contact zones." It then follows developments in African American art from the Antebellum Period to the present. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is cross-listed with AAST 4623.

\section*{ARHS 4623H. Honors African American Art History. 3 Hours.}

Surveys African American art from the seventeenth century to the present. It begins with a discussion of the transatlantic slave trade and it examines art produced in what Pratt terms the "contact zones." It then follows developments in African American art from the Antebellum Period to the present. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular)
This course is cross-listed with ARHS 4623, AAST 4623.

\section*{ARHS 4633. Contemporary African Art. 3 Hours.}

Serves as a forum for the study of contemporary African art. It situates African art from the 1980s to the present within a historic context, addressing the impact of geopolitical ruptures on artistic practices, and it examines how the work operates across different intellectual, political, and geographical spheres. Prerequisite: ARHS 2923. (Typically offered: Irregular)

\section*{ARHS 4633H. Honors Contemporary African Art. 3 Hours.}

Serves as a forum for the study of contemporary African art. It situates African art from the 1980s to the present within a historic context, addressing the impact of geopolitical ruptures on artistic practices, and it examines how the work operates across different intellectual, political, and geographical spheres. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular)
This course is equivalent to ARHS 4633.

ARHS 4733. Saint Peter's and the Vatican. 3 Hours.
Examines art and the architectural history of St. Peter's Basilica in Rome from antiquity to present. Emphasis on the Renaissance/Baroque church and its early Christian predecessor. Students consider the impact of devotional practices and papal politics on the church, the Vatican Palace, and its renown artworks including the Sistine ceiling. Prerequisite: ARHS 2913 and ARHS 2923. (Typically offered: Irregular)
ARHS 4733H. Honors Saint Peter's and the Vatican. 3 Hours.
Examines art and the architectural history of St. Peter's Basilica in Rome from antiquity to present. Emphasis on the Renaissance/Baroque church and its early Christian predecessor. Students consider the impact of devotional practices and papal politics on the church, the Vatican Palace, and its renown artworks including the Sistine ceiling. Prerequisite: ARHS 2913 and ARHS 2923 and honors standing. (Typically offered: Irregular)
This course is equivalent to ARHS 4733.

\section*{ARHS 4753. Renaissance and Baroque Architecture. 3 Hours.}

Study of Renaissance and Baroque architecture in Europe and the New World from 1400 to 1700 . With reference to an array of texts, drawings, and edifices, this course charts the evolution of a commanding Western architectural tradition with close attention to social, humanistic, and religious contexts. Prerequisite: ARHS 2923 or ARCH 4433. (Typically offered: Irregular)

\section*{ARHS 4763. Seminar in Critical Theory. 3 Hours.}

Study of critical theory as it relates to problems in modern and contemporary art. Prerequisite: Nine credit hours of ARHS coursework. (Typically offered: Spring)

\section*{ARHS 4763H. Honors Seminar in Critical Theory. 3 Hours.}

Study of critical theory as it relates to problems in modern and contemporary art. Prerequisite: Nine credit hours of ARHS coursework. (Typically offered: Spring) This course is equivalent to ARHS 4763.

\section*{ARHS 4773. History of New Media Art. 3 Hours.}

Examines the history of "new media" art in relation to larger shifts in technology, philosophy and politics. Beginning in the 19th century, the course explores the development of photography, film, video, performance, sound and digital art through the 20th century. Culminates with an examination of contemporary practice. Prerequisite: ARHS 2923 and 3 hours of 3000 level and above art history coursework. (Typically offered: Irregular)

\section*{ARHS 4773H. Honors History of New Media Art. 3 Hours.}

Examines the history of "new media" art in relation to larger shifts in technology, philosophy and politics. Beginning in the 19th century, the course explores the development of photography, film, video, performance, sound and digital art through the 20th century. Culminates with an examination of contemporary practice. Prerequisite: ARHS 2923, honors standing and 3 hours of 3000 level and above art history coursework. (Typically offered: Irregular)
This course is equivalent to ARHS 4773.

\section*{ARHS 4783. Special Topics in Contemporary Art. 3 Hours.}

Examines specialized topics within the field of contemporary art, with special attention to cutting-edge issues confronting artists today. Prerequisite: ARHS 2923. (Typically offered: Irregular) May be repeated for degree credit.
ARHS 4783H. Honors Special Topics in Contemporary Art. 3 Hours. Examines specialized topics within the field of contemporary art, with special attention to cutting-edge issues confronting artists today. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular) May be repeated for degree credit. This course is equivalent to ARHS 4783.

ARHS 4793. Making the Museum: History, Theory and Practice. 3 Hours. Presents a broad overview of the institutional history and the contemporary professional practice of the museum world. Features numerous visiting lectures from a working professionals from the local area and nationwide institutions. Prerequisite: Any 3 credit hour, 3000 level or higher art history course. (Typically offered: Irregular)

ARHS 4813. The History of Photography. 3 Hours.
Survey of photography from 1685 to present. (Typically offered: Irregular)
ARHS 4823. History of Graphic Design. 3 Hours.
Survey of graphic design history from 1850 to the present. Prerequisite: ARHS 2923. (Typically offered: Spring)

ARHS 4823H. Honors History of Graphic Design. 3 Hours.
Survey of graphic design history from 1850 to the present. Prerequisite: Honors standing and ARHS 2923. (Typically offered: Spring)
This course is equivalent to ARHS 4823.
ARHS 4833. Ancient Art. 3 Hours.
Study of selections from the visual arts of Mesopotamia, Egypt, Greece, or Rome. Prerequisite: ARHS 2913. (Typically offered: Irregular)

\section*{ARHS 4843. Medieval Art. 3 Hours.}

Study of Early Christian, Byzantine, Early Medieval, Romanesque, and Gothic styles. Prerequisite: ARHS 2913. (Typically offered: Irregular)

\section*{ARHS 4843H. Honors Medieval Art. 3 Hours.}

Study of Early Christian, Byzantine, Early Medieval, Romanesque, and Gothic styles. Prerequisite: ARHS 2913. (Typically offered: Irregular)
This course is equivalent to ARHS 4843.

\section*{ARHS 4853. Italian Renaissance Art. 3 Hours.}

Study of Proto-Renaissance, Early, High Renaissance, and Mannerist styles in Italy. Prerequisite: ARHS 2923. (Typically offered: Irregular)

ARHS 4853H. Honors Italian Renaissance Art. 3 Hours.
Study of Proto-Renaissance, Early, High Renaissance, and Mannerist styles in Italy. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is equivalent to ARHS 4853.
ARHS 4863. Northern Renaissance Art. 3 Hours.
Study of Late Gothic and Renaissance styles in the Netherlands, Germany, and France. Prerequisite: ARHS 2923. (Typically offered: Irregular)

ARHS 4863H. Honors Northern Renaissance Art. 3 Hours.
Study of Late Gothic and Renaissance styles in the Netherlands, Germany, and
France. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is equivalent to ARHS 4863.
ARHS 4873. Baroque Art. 3 Hours.
Study of art styles of the 17th century, primarily in Italy, Spain, France, Flanders, and the Netherlands. Prerequisite: ARHS 2923. (Typically offered: Irregular)
ARHS 4873H. Honors Baroque Art. 3 Hours.
Study of art styles of the 17th century, primarily in Italy, Spain, France, Flanders, and the Netherlands. Prerequisite: ARHS 2923. (Typically offered: Irregular)
This course is equivalent to ARHS 4873.
ARHS 4883. 18th and 19th Century European Art. 3 Hours.
Study of eighteenth- and nineteenth-century art and architecture in Europe.
Prerequisite: ARHS 2923. (Typically offered: Irregular)
ARHS 4893. 20th Century European Art. 3 Hours.
Study of the major styles and movements of the century, including Cubism, Fauvism, German Expressionism, and Surrealism. Prerequisite: ARHS 2923. (Typically offered: Irregular)

\section*{ARHS 490VH. Honors Thesis in Art History. 1-6 Hour.}

Special problems in art history. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.
ARHS 4913. American Art to 1860. 3 Hours.
The visual arts in the United States from Colonial times through 1860. Prerequisite: ARHS 2923. (Typically offered: Irregular)

ARHS 4913H. Honors American Art to 1860. 3 Hours.
The visual arts in the United States from Colonial times through 1860. Prerequisite:
ARHS 2923. (Typically offered: Irregular)
This course is equivalent to ARHS 4913.
ARHS 4923. American Art 1860-1960. 3 Hours.
The visual arts in the United States from the onset of the American Civil War through the Cold War Era. Prerequisite: ARHS 2923. (Typically offered: Irregular)

\section*{ARHS 4923H. Honors American Art 1860-1960. 3 Hours.}

The visual arts in the United States from the onset of the American Civil War through the Cold War Era. Prerequisite: ARHS 2923. (Typically offered: Irregular) This course is equivalent to ARHS 4923.

ARHS 4933. Contemporary Art. 3 Hours.
Study of styles and major trends in the visual arts since 1960. Prerequisite: ARHS 2923. (Typically offered: Fall)

ARHS 4933H. Honors Contemporary Art. 3 Hours.
Study of styles and major trends in the visual arts since 1960. Prerequisite: ARHS 2923 and ARHS 4923. (Typically offered: Fall)
This course is equivalent to ARHS 4933.
ARHS 4953. Art Museum Studies. 3 Hours.
A survey of the history and function of the art museum and an introduction to museum work. Investigation of collections and collections management, conservation, exhibitions, education and public programs, museum management, and contemporary issues which effect the museum profession. Prerequisite: ARHS 2913 and ARHS 2923, or graduate Art MFA standing. (Typically offered: Irregular)
ARHS 4963. Individual Research in Art History. 3 Hours.
Independent study in specific areas of art history and criticism. Prerequisite: 12 hours of Art History and permission of instructor. (Typically offered: Fall and Spring)

\section*{ARHS 4973. Seminar in Art History. 3 Hours.}

Special studies of periods and styles of art. Prerequisite: 9 hours of Art History. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ARHS 4983. Special Topics in Art History. 3 Hours.}

Subject matter not covered in regularly offered courses, and relating to the history of art before the eighteenth century. May be repeated for different topics. Prerequisite: ARHS 2913 or ARHS 2923. (Typically offered: Irregular) May be repeated for degree credit.

ARHS 4983H. Honors Special Topics in Art History. 3 Hours.
Subject matter not covered in regularly offered courses, and relating to the history of art before the eighteenth century. May be repeated for different topics. Prerequisite:
ARHS 2913 or ARHS 2923. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to ARHS 4983.

\section*{ARHS 4993. Special Topics in Modern Art. 3 Hours.}

Subject matter not covered in regularly offered courses, and relating to the history of art from the nineteenth century to the present. May be repeated for different topics. Prerequisite: ARHS 2923. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ARHS 4993H. Honors Special Topics in Modern Art. 3 Hours.}

Subject matter not covered in regularly offered courses, and relating to the history of art from the nineteenth century to the present. May be repeated for different topics. Prerequisite: ARHS 2923 and honors standing. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to ARHS 4993.

\section*{ARHS 5013. Case Studies in Art History. 3 Hours.}

This class provides in-depth studies of selected artists, themes, or specific groups of art works. This course is only offered during intersession. (Typically offered:
Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ARHS 5563. Pre-Columbian Art. 3 Hours.}

An introduction to pre-Columbian art from Mexico ( 3000 BC- 1521 AD) through a survey of works of art from different media: sculpture, architecture, and mura painting. Topics examined include: sacred images, political uses of sculpture, architecture and cosmogony, as well as the relationship between the material and content. (Typically offered: Irregular)

ARHS 5573. Artists of New Spain. 3 Hours.
An overview of colonial art in colonial New Spain. Focused on native agency, social function of art, and cross-cultural communication. Topics include indigenous materials and techniques, the use of images in legal contexts, and ritual liturgy.
Some consideration will be given to artworks from the viceroyalty of Peru. (Typically offered: Irregular)

\section*{ARHS 5763. Seminar in Critical Theory. 3 Hours.}

Study of critical theory as it relates to problems in modern and contemporary art. Graduate degree credit will not be given for both ARHS 4763 and ARHS 5763. (Typically offered: Spring)

\section*{ARHS 5773. History of New Media Art. 3 Hours.}

Examines the history of "new media" art in relation to larger shifts in technology, philosophy and politics. Beginning in the 19th century, the course explores the development of photography, film, video, performance, sound and digital art through the 20th century. Culminates with an examination of contemporary practice. Graduate degree credit will not be given for both ARHS 4773 and ARHS 5773. (Typically offered: Irregular)

ARHS 5793. Making the Museum: History, Theory and Practice. 3 Hours. Presents a broad overview of the institutional history and the contemporary professional practice of the museum world. Features numerous visiting lectures from a working professionals from the local area and nationwide institutions. (Typically offered: Spring Even Years)

\section*{ARHS 5813. The History of Photography. 3 Hours.}

Survey of photography from 1685 to present. Graduate degree credit will not be given for both ARHS 4813 and ARHS 5813. (Typically offered: Irregular)

\section*{ARHS 5823. History of Graphic Design. 3 Hours.}

Survey of graphic design history from 1850 to the present. Graduate degree credit will not be given for both ARHS 4823 and ARHS 5823. Prerequisite: ARHS 2923. (Typically offered: Irregular)

\section*{ARHS 5833. Ancient Art. 3 Hours.}

Study of selections from the visual arts of Mesopotamia, Egypt, Greece, or Rome. Graduate degree credit will not be given for both ARHS 4833 and ARHS 5833. (Typically offered: Irregular)

\section*{ARHS 5843. Medieval Art. 3 Hours}

Study of Early Christian, Byzantine, Early Medieval, Romanesque, and Gothic styles. Graduate degree credit will not be given for both ARHS 4843 and ARHS 5843. (Typically offered: Irregular)

\section*{ARHS 5853. Italian Renaissance Art. 3 Hours.}

Study of Proto-Renaissance, Early, High Renaissance, and Mannerist styles in Italy. Graduate degree credit will not be given for both ARHS 4853 and ARHS 5853. (Typically offered: Irregular)

\section*{ARHS 5863. Northern Renaissance Art. 3 Hours.}

Study of Late Gothic and Renaissance styles in the Netherlands, Germany, and France. Graduate degree credit will not be given for both ARHS 4863 and ARHS 5863. (Typically offered: Irregular)

ARHS 5873. Baroque Art. 3 Hours.
Study of art styles of the 17th century, primarily in Italy, Spain, France, Flanders, and the Netherlands. Graduate degree credit will not be given for both ARHS 4873 and ARHS 5873. (Typically offered: Irregular)

ARHS 5883. 18th and 19th Century European Art. 3 Hours.
Study of eighteenth- and nineteenth-century art and architecture in Europe. Graduate degree credit will not be given for both ARHS 4883 and ARHS 5883. (Typically offered: Irregular)

\section*{ARHS 5893. 20th Century European Art. 3 Hours.}

Study of the major styles and movements of the century, including Cubism, Fauvism, German Expressionism, and Surrealism. Graduate degree credit will not be given for both ARHS 4893 and ARHS 5893. (Typically offered: Irregular)

ARHS 5913. American Art to 1860. 3 Hours.
The visual arts in the United States from Colonial times through 1860. Graduate degree credit will not be given for both ARHS 4913 and ARHS 5913. (Typically offered: Irregular)

ARHS 5923. American Art 1860-1960. 3 Hours.
The visual arts in the United States from the onset of the American Civil War through the Cold War Era. Graduate degree credit will not be given for both ARHS 4923 and ARHS 5923. (Typically offered: Irregular)

\section*{ARHS 5933. Contemporary Art. 3 Hours.}

Study of styles and major trends in the visual arts since 1960. Graduate degree credit will not be given for both ARHS 4933 and ARHS 5933. (Typically offered: Fall)

\section*{ARHS 5953. Art Museum Studies. 3 Hours.}

A survey of the history and function of the art museum and an introduction to museum work. Investigation of collections and collections management, conservation, exhibitions, education and public programs, museum management, and contemporary issues which effect the museum profession. Graduate degree credit will not be given for both ARHS 4953 and ARHS 5953. Prerequisite: ARHS 2913 and ARHS 2923, or graduate Art MFA standing. (Typically offered: Irregular)

\section*{ARHS 5973. Seminar in Art History. 3 Hours.}

Special studies of periods and styles of art. Graduate degree credit will not be given for both ARHS 4973 and ARHS 5973. Prerequisite: 9 hours of Art History. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ARHS 5983. Special Topics in Art History. 3 Hours.
Subject matter not covered in regularly offered courses, and relating to the history of art before the nineteenth century. May be repeated for different topics. Graduate degree credit will not be given for both ARHS 4983 and ARHS 5983. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ARHS 5993. Special Topics in Modern Art. 3 Hours.}

Subject matter not covered in regularly offered courses, and relating to the history of art from the nineteenth century to the present. May be repeated for different topics. Graduate degree credit will not be given for both ARHS 4993 and ARHS 5993. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ARHS 6003. Art History's Histories: Critical Historiography and Methodology. 3 Hours.
Provides a theoretical, historiographic, and methodological foundation in art history. Exposes students to methods they can use throughout their degree work while providing them with the conceptual tools needed for meaningful engagement with the key debates animating the field. (Typically offered: Fall)

ARHS 6013. Immersive Travel. 3 Hours.
Involves hands-on research beyond the classroom. Includes site visits and access to collections, showcasing the multiplicity of perspectives one brings to cultural work. (Typically offered: Summer)

\section*{ARHS 6023. Graduate Art History Writing Workshop. 3 Hours.}

Prepares students to present their ideas in a range of formats and contexts for a variety of audiences. Guides students through the Qualifying Paper process. (Typically offered: Fall)

\section*{ARHS 6033. Art History Qualifying Paper. 3 Hours.}

Focused work on the art history Qualifying Paper, supervised by an art history faculty member/advisor. Preparation for art history symposium, the capstone event of the degree program. (Typically offered: Spring)

ARHS 6043. Art History Practicum. 3 Hours.
Internship at the Crystal Bridges Museum of American Art or another arts institution. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

ARHS 6103. Seminar in Spatial Practices in Mesoamerica and New Spain. 3 Hours.
Explores space as a category for historical analysis. Examines how different Mesoamerican cultures conceptualized space through the analysis of a wide variety of primary and secondary sources, such as archaeological sites, architecture, urbanism, maps, painted manuscripts, ceramics, and mural paintings. (Typically offered: Irregular)

\section*{ARHS 6203. Seminar in Art and Artifice of Americana. 3 Hours.}

Explores the aesthetic and social operations of Americana, loosely defined as things associated with the culture and history of the United States. Concepts to include imagined communities and usable pasts inform analysis of a wide range of material, from painting and sculpture to literature, magazine illustration, and interior design. (Typically offered: Irregular)
ARHS 6213. Seminar in Visual Legacies of the American West. 3 Hours. Explores the work of Euro-American painters who popularized visions of a mythic West and foregrounds the dramatically different stories told by Plains and Southwest artists. Indigenous methodologies and best practices with respect to community engagement are considered. (Typically offered: Irregular)

ARHS 6223. Seminar in Monuments and Public Space. 3 Hours.
Examines the relationship between ideology and space through the study of monuments, memorials, and public art. Explores the impacts monuments have on the built environment, the politics of iconoclasm, the meanings of memorialization, and interventions that reimagine, re-contextualize, and re-site existing monuments. (Typically offered: Irregular)

ARHS 6233. Seminar in Making and Unmaking the "Modern. 3 Hours. Investigates contested notions of the modern, modernism, and modernity in art historical discourse. Examines how modernism has been constructed by museum exhibitions and scholarship in specific historical and cultural contexts, and the power structures and investments that have shaped these narratives. (Typically offered: Irregular)

\section*{ARHS 6243. Seminar in Mining Museums. 3 Hours.}

Examines museums as complex sites of cultural production, with particular focus on contemporary debates. Students will be invited to reimagine the museum, testing their own approaches to collecting, curation, education, and public outreach by using the museum as a site for experimentation. (Typically offered: Irregular)

ARHS 6253. Seminar in Abstraction and Identity. 3 Hours.
Addresses how artists have used abstraction to make social arguments and how art institutions have framed the relationship between identity and abstraction with respect to their collections, by focusing on artworks in local collections. Brings together recent critical theory and the practical concerns of a public museum. (Typically offered: Irregular)
ARHS 6303. Seminar in Culture Wars: Politics, Protest, and Activism in the Arts. 3 Hours.
Explores the relationship between art and politics both historically and in the present. Examines art as activism and protest, considers theories of revolution, and discusses censorship and cultural appropriation, among other topics. (Typically offered: Irregular)

ARHS 6313. Seminar in Contemporary Native American Art. 3 Hours.
Explores the foundation and development of contemporary Native American art through a centering of Indigenous knowledge, world views, and voices from what is now known as Canada and the United States. Examines the scholarship, exhibitions, and art forms that have shaped the field historically through the present. (Typically offered: Irregular)

ARHS 6403. Seminar in Contemporary Latinx Art. 3 Hours.
Studies Latinx contemporary art, 1960 to the present, with an emphasis on the past 30 years. Addresses the political realities of migration, globalization, diaspora, crisis and violence, through theoretical frameworks including biopolitics, rasquachismo, relational aesthetics, and Majority World-ism. (Typically offered: Irregular)
ARHS 6413. Greek Art and Archaeology. 3 Hours.
Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.) from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. (Typically offered: Spring Odd Years)
ARHS 6423. Roman Art and Archaeology. 3 Hours.
Roman Art and Archaeology focuses on how visual and material culture shaped and were shaped by Roman society (religion, politics, economy, gender, ethnicity, etc.) from the Iron Age through the Late Antique period. We encounter famous masterpieces, but also the material remains of everyday Romans in civic and domestic spaces. (Typically offered: Spring Even Years)

\section*{ARHS 6433. Seminar in Queer, Trans, and Feminist Art. 3 Hours.}

Examines Queer, Trans, and Feminist art practices of the Americas, which challenge heteronormative, cis, settler colonialist, Western, and patriarchal frameworks of bodies, histories, and ideas. Uses tools from queer theory, Latin American and Latinx studies, critical race studies, and women's, gender, and sexuality studies. (Typically offered: Irregular)

\section*{ARHS 6613. African Art and Society. 3 Hours.}

Situates the artistic production of modern Africa (1800-present) within a sociocultural framework, taking into consideration the role of the artist, the methods of production, the relationship between form and function, and the impact of geopolitical shifts (including intercontinental trade, colonialization, and globalization) on the artistic practice. (Typically offered: Irregular)
ARHS 6623. African American Art History. 3 Hours.
Surveys African American art from the seventeenth century to the present. It begins with a discussion of the transatlantic slave trade and it examines art produced in what Pratt terms the "contact zones". It then follows developments in African American art from the Antebellum Period to the present. (Typically offered: Irregular)
ARHS 6633. Contemporary African Art. 3 Hours.
Serves as a forum for the study of contemporary African art. It situates African art from the 1980s to the present within a historic context, addressing the impact of geopolitical ruptures on artistic practices, and it examines how the work operates across different intellectual, political, and geographical spheres. (Typically offered: Irregular)

\section*{ARHS 6643. Seminar in Imagining Africa. 3 Hours.}

Traces the history of Pan-Africanism and related aesthetic imaginaries of Africa over the twentieth century. (Typically offered: Irregular)
ARHS 6653. Seminar in Cross-cultural Artistic Production in the Atlantic World. 3 Hours.
Examines the interdependent art cultures of bordering countries in Africa, the Americas, the Caribbean, and Europe. Draws on postcolonial theory, migration studies, and critical race theory to look at modes of exchange around the Atlantic and conceptions of modernity. (Typically offered: Irregular)

ARHS 6823. Case Studies in Art History and Curatorial Practice. 3 Hours. Topics in art history and curatorial practice that focuses on specific exhibitions at Crystal Bridges Museum of American Art or other museums. Investigates theoretical as well as practical considerations of exhibiting specific content for public audiences. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ARHS 6883. Special Topics in Art History. 3 Hours.}

Examines specialized topics in art history, with special attention to cutting-edge issues today. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ARHS 6933. Graduate Research In Art History. 3 Hours.
Independent study in specific areas of art history and criticism. (Typically offered: Irregular)

\section*{Arts and Sciences (ARSC) \\ Courses}

ARSC 104V. Special Topics in Student Success. 1-3 Hour.
Empowers students to explore various ARSC topics and programs under the guidance of ARSC faculty and/or advisors to advance student success. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

ARSC 1201. Introduction to Teaching STEM Subjects. 1 Hour.
This course provides a preview of what it is like to teach STEM subjects. Engaging activities that model effective teaching practices, discussions of STEM education issues, and optional school observations will help STEM majors clarify interest in teaching as a career or as an additional skill as a STEM professional. (Typically offered: Fall and Spring)

ARSC 1212. Inquiry Approach to Teaching STEM Subjects. 2 Hours. Along with learning classroom strategies for engaging students and organizing a lesson, student pairs plan and teach three inquiry-based lessons (choice of math, science, or computer science) in a local school classroom, assess student understanding, and reflect on feedback. For STEM majors exploring teaching as an additional career option. (Typically offered: Fall and Spring)

ARSC 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{ARSC 2003. Second Year Experience. 3 Hours.}

Explores the purpose of a college education, the university general education objectives, and the many dimensions of wellness for sophomores who are still discovering their place at the university. Prerequisite: Sophomore standing or instructor consent. (Typically offered: Fall and Spring)

ARSC 2201. College Perspectives for Transfer Students. 1 Hour.
Develops a sense of social belonging and wellness during the transition period by encouraging critical thinking and civil engagement for transfer students. Provides peer-to-peer support and instruction. (Typically offered: Fall and Spring)

\section*{ARSC 2600. Undergraduate Research Assistant. 0 Hours}

Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARSC 3013. Fulbright College Career Connections. 3 Hours.
This course teaches students how to capitalize on their strengths, skills, experience, professional connections, and academic discipline. Key components of this course are guest lectures from on-campus and off-campus professionals, interactive group activities to practice professional skills, and the creation of an online portfolio. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring)

ARSC 310V. Fulbright College Elective Internship. 1-3 Hour.
Available to students completing an internship that aligns with their career goals and/or their area of study. Credit-only course that may be repeated for up to 6 hours of elective degree credit. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

ARSC 3203. Professional ePortfolio. 3 Hours
Serves as a forum for the development of a professional ePortfolio, showcasing academic and co-curricular accomplishments. Intended for students exploring multiple majors or career opportunities, but can benefit any student. (Typically offered: Fall and Spring)

ARSC 3600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
ARSC 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{Asian Studies (AIST)}

\section*{Courses}

AIST 3103. Chinese Culture through Film. 3 Hours.
Explores Chinese culture through the lens of Chinese films with an emphasis on contemporary communicative culture. Designed to give students analytical insights into Chinese culture, especially how its language, history, philosophy, society, education, customs, family values, and gender roles shape contemporary culture and people's communication. (Typically offered: Fall and Spring)
This course is cross-listed with CHIN 3103.
AIST 3273. Sociology of China. 3 Hours.
This class offers a sociological account of China, including both its social ethos and the experience of Chinese Americans in the United States. (Typically offered: Fall) This course is cross-listed with SOCI 3273.

\section*{AIST 3503. Government and Politics of East Asia. 3 Hours.}

Comparative analysis of structures, processes, and problems of the political systems of the Democratic Republic of Vietnam, Japan, and the Peoples Republic of China.

Prerequisite: PLSC 2013. (Typically offered: Fall and Spring)
This course is cross-listed with PLSC 3503.

\section*{AIST 3533. World War II. 3 Hours}

This course explores broad themes such as imperialism, colonialism, nationalism, transnationalism, and racism by placing WWII in the context of the build-up of tensions between China, the Japanese Empire, and the United States starting in the nineteenth century. (Typically offered: Spring)

This course is cross-listed with HIST 3533.

\section*{AIST 3633. Modern Japan. 3 Hours.}

This course exposes students to the rapid transformations in Japan from the midnineteenth century through to their rise into an important player in global politics. Students will be familiarized with the narrative history of the Japanese home islands as well as the place of Japan in the context of world events and global currents. (Typically offered: Fall)
This course is cross-listed with HIST 3633.

\section*{AIST 390V. Special Topics in Asian Studies. 1-3 Hour.}

Special topics in Asian Studies. May be repeated for degree credit. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

AIST 4003. Asian Studies Colloquium. 3 Hours.
An interdepartmental colloquium with an annual change of subject, required of students in the Asian studies program. Prerequisite: Sophomore standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

\section*{AIST 4003H. Honors Asian Studies Colloquium. 3 Hours}

An interdepartmental colloquium with an annual change of subject, required of students in the Asian studies program. Prerequisite: Sophomore standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
This course is equivalent to AIST 4003.

AIST 4323. Culture and Society in China. 3 Hours.
Examines contemporary Chinese society and culture through the lens of language and with an emphasis on globalization. (Typically offered: Fall and Spring) This course is cross-listed with CHIN 4313.

\section*{AIST 4403. Islam in Asia. 3 Hours.}

This course will introduce students to the history and varieties of Muslim life in East Asia and Southeast Asia during the past 1,200 years. Through a comparative historical approach, it will examine themes of gender, imperialism and nationalism, religious education, pilgrimage, Islamic modernism, and religious extremism. (Typically offered: Fall)
This course is cross-listed with HIST 4403.

\section*{AIST 4823. Foreign Policy of East Asia. 3 Hours.}

This course provides an introduction to China's foreign policy at the undergraduate level. Key topics covered include the historical, domestic, and international contexts of Chinese foreign policy, China's relations with key partner countries, security strategies, foreign economic relations, and evolving role in global governance. (Typically offered: Fall)
This course is cross-listed with PLSC 4823.

\section*{Astronomy (ASTR)}

\section*{Courses}

ASTR 2001L. Survey of the Universe Laboratory (ACTS Equivalency = PHSC 1204 Lab). 1 Hour.
Daytime and nighttime observing with telescopes and indoor exercises on selected
topics. Pre- or Corequisite: ASTR 2003. (Typically offered: Fall, Spring and Summer)

\section*{ASTR 2001M. Honors Survey of the Universe Laboratory. 1 Hour.}

An introduction to the content and fundamental properties of the cosmos. Topics include planets and other objects of the solar system, the sun, normal stars and interstellar medium, birth and death of stars, neutron stars, and black holes. Pre- or Corequisite: ASTR 2003 or ASTR 2003H. (Typically offered: Fall)
This course is equivalent to ASTR 2001L.
ASTR 2003. Survey of the Universe (ACTS Equivalency = PHSC 1204 Lecture). 3 Hours.
An introduction to the content and fundamental properties of the cosmos. Topics include planets and other objects of the solar system, the Sun, normal stars and interstellar medium, birth and death of stars, neutron stars, pulsars, black holes, the Galaxy, clusters of galaxies, and cosmology. Corequisite: ASTR 2001L or ASTR 2001M. (Typically offered: Fall, Spring and Summer)

\section*{ASTR 2003H. Honors Survey of the Universe. 3 Hours.}

An introduction to the content and fundamental properties of the cosmos. Topics include planets and other objects of the solar system, the Sun, normal stars and interstellar medium, birth and death of stars, neutron stars, pulsars, black holes, the Galaxy, clusters of galaxies, and cosmology. Corequisite: ASTR 2001M. (Typically offered: Fall)
This course is equivalent to ASTR 2003.
ASTR 4033. Astrophysics I: Stars and Planetary Systems. 3 Hours.
An introduction to astrophysics covering stellar structure and evolution, the properties of the solar system, and extrasolar planetary systems. Prerequisite: PHYS 3613 or CHEM 3504. (Typically offered: Fall Odd Years)

ASTR 4043. Astrophysics II: Galaxies and the Large-Scale Universe. 3 Hours. An introduction to astrophysics covering the interstellar medium, the Milky Way galaxy, extragalactic astronomy, and introduction to cosmology. Prerequisite: ASTR 4033. (Typically offered: Spring Even Years)

\section*{ASTR 4073. Cosmology. 3 Hours.}

An introduction to modern Big Bang cosmology. The course covers the origin, evolution, and structure of the Universe, based on the Theory of Relativity. Prerequisite: PHYS 3613 or CHEM 3504. (Typically offered: Spring Odd Years)

ASTR 4083. Data Analysis and Computing in Astronomy. 3 Hours.
Study of the statistical analysis of large data sets that are prevalent in the physical sciences with an emphasis on astronomical data and problems. Includes computational lab 1 hour per week. Corequisite: Lab component. Prerequisite: PHYS 3613. (Typically offered: Fall Even Years)

ASTR 5033. Astrophysics I: Stars and Planetary Systems. 3 Hours.
An introduction to astrophysics covering stellar structure and evolution, the properties of the solar system, and extrasolar planetary systems. (Typically offered: Fall Odd Years)
This course is cross-listed with SPAC 5033.
ASTR 5043. Astrophysics II: Galaxies and the Large-Scale Universe. 3 Hours. An introduction to astrophysics covering the interstellar medium, the Milky Way galaxy, extragalactic astronomy, and introduction to cosmology. Prerequisite: ASTR 5033 or SPAC 5033. (Typically offered: Spring Even Years)

\section*{ASTR 5073. Cosmology. 3 Hours.}

An introduction to modern physical cosmology covering the origin, evolution, and structure of the Universe, based on the Theory of Relativity. (Typically offered: Spring Odd Years)

ASTR 5083. Data Analysis and Computing in Astronomy. 3 Hours.
Study of the statistical analysis of large data sets that are prevalent in the physical sciences with an emphasis on astronomical data and problems. Includes computational lab 1 hour per week. Corequisite: Lab component. (Typically offered: Fall Even Years)

\section*{ASTR 5523. Theory of Relativity. 3 Hours.}

Conceptual and mathematical structure of the special and general theories of relativity with selected applications. Critical analysis of Newtonian mechanics; relativistic mechanics and electrodynamics; tensor analysis; continuous media; and gravitational theory. (Typically offered: Fall Even Years)

\section*{Athletic Training (ATTR)}

\section*{Courses}

ATTR 5111. Evidence Based Practice in Athletic Training I. 1 Hour.
This course is an introduction to evidence-informed practice principles for clinicianscholars including developing clinical questions, understanding the hierarchy of research, applying critical appraisal to evidence, describing quality improvement principles, and applying statistics principles when reading research literature. Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5122. Intervention and Care Planning I. 2 Hours.}

This course will serve as foundational concepts and terminology for interventions and care planning in athletic training and will include content related to medical terminology, disablement framework, clinical reasoning habits, components of the history and physical examination, documentation, injury healing, \& tissue mechanics. Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5133. Core Competencies and Clinical Care I. 3 Hours.}

This course will serve as an introduction to the athletic training program procedures, policies, and application of preventative and protective strategies in patient/client care. Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5141. Professional Identity Formation. 1 Hour.}

This course will provide knowledge and skills related to professionalism and interprofessional education/practice. Concepts covered will include professional identity formation and professionalism, ethical considerations, professional longevity and interprofessional practice. Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5151L. Intervention and Care Planning II Lab. 1 Hour.}

This course will cover skills related to interventions and care planning in athletic training and will include rehabilitation and modalities applications, care planning and interventions for impairments with a focus on lower extremity conditions.
Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Fall)

\section*{ATTR 5153. Intervention and Care Planning II. 3 Hours.}

This course will present topics related to interventions and care planning in athletic training and will include rehabilitation \& modalities theory, care planning \& interventions for impairments with a focus on lower extremity conditions.
Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Fall)
ATTR 5161. Evidence Based Practice in Athletic Training II. 1 Hour.
This course continues evidence-informed practice principles for clinician-scholars including evidence-based practice and statistics concepts for diagnostics \& interventions and quality improvement. Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Fall)
ATTR 5172. Core Competencies and Clinical Care II. 2 Hours.
This course is designed to provide the student with clinical education experiences and applications of emergency care and critical incident management in patient/ client care and continued emphasis on prevention topics. Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Fall)

ATTR 5181. Evidence Based Practice in Athletic Training III. 1 Hour.
This course completes evidence-informed practice principles for clinician-scholars including evidence-based practice and statistics concepts for prevention research and epidemiology. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

\section*{ATTR 5213. Athletic Training Clinical I-Application of Injury Prevention Devices and Techniques. 3 Hours.}

This course will serve as an introduction to the athletic training program procedures, policies, and application of athletic preventive devices and how they support anatomical structures. Corequisite: ATTR 5223. Prerequisite: Admission to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5223. Emergency Procedures. 3 Hours.}

This course will serve as a theory, laboratory and clinical experiences designed to provide students with formal instruction and skills development regarding curricular content related to emergency care of injuries/illnesses with a focus on team-based and inter-professional strategies for responding to emergencies. Corequisite: Lab component. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Summer)
ATTR 5232. Athletic Training Clinical III - Lower Extremity Evaluation. 2 Hours. This course serves as a process to monitor student progression of athletic training competencies, acquire clinical hours under the direct supervision of a preceptor(s), and reinforce the evaluation skills of the lower extremity, lumbar and thoracic spine. Prerequisite: ATTR 5223. (Typically offered: Fall)

ATTR 5242. Athletic Training Clinical IV - Evaluation of Upper Extremity. 2 Hours.
This course serves as a process to monitor student's progression of athletic training competencies, acquire clinical hours under the direct supervision of a preceptor (s), and reinforce the evaluation skills of the gait, upper extremity, cervical abdominal/ thorax, head and face.Prerequisite: ATTR 5232. (Typically offered: Spring)

\section*{ATTR 5253. Professionalism in Athletic Training. 3 Hours.}

This course has dual purposes: to educate students on athletic training educational competencies related to professionalism and professional responsibility in the field of athletic training; and to provide an immersive clinical experience under the direct supervision of a preceptor as required by the accrediting body. Students will engage with information about professionalism in both the course material and the clinical experience. (Typically offered: Fall)

ATTR 5262. Athletic Training Clinical V - Rehabilitation Lab. 2 Hours.
This course will serve as a process for monitoring student's progression of athletic training competencies, acquire clinical hours under the direct supervision of a preceptor(s), practice clinical skills, and reinforce techniques and applications of therapeutic exercise and rehabilitation. (Typically offered: Fall)

\section*{ATTR 5272. Athletic Training Seminar. 2 Hours.}

This course will serve as a process for monitoring student's progression of athletic training competencies, acquire clinical hours under the direct supervision of a preceptor(s), practice clinical skills, and prepare students for the BOC-AT certification exam and future employment. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

\section*{ATTR 5281L. Primary Care Lab. 1 Hour.}

This course will cover skills related to the examination and management of medical illnesses/conditions in physically active individuals across the lifespan. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

\section*{ATTR 5283. Primary Care. 3 Hours.}

This course is a study of medical illnesses/conditions in physically active individuals across the lifespan with a focus on prevention, recognition, physical examination, management including medications, and referral of common conditions. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

\section*{ATTR 5314. Clinical Anatomy for Athletic Trainers. 4 Hours.}

Instruction of human anatomy for the athletic training professional using lecture, diagrams, textbook readings, labs, and demonstrations. Focus will be placed on anatomy of structures related to athletic and orthopedic injuries. This course will prepare students in the evaluation, treatment, and rehabilitation of injuries in a variety of athletic training and clinical settings. Corequisite: Lab component. Prerequisite: Admitted to the graduate program in athletic training or instructor consent. (Typically offered: Summer)

\section*{ATTR 5332. Core Competencies and Clinical Care III. 2 Hours.}

This course is designed to provide the student with clinical education experiences and applications of musculoskeletal injury evaluation and care plans in complex patient cases and continued emphasis on professional development and clinician longevity. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

\section*{ATTR 5341L. Intervention and Care Planning III Lab. 1 Hour.}

This course will cover skills related to interventions and care planning in athletic training and will include rehabilitation \& modalities applications, care planning \& interventions for activity limitations with a focus on upper extremity conditions and post-operative cases. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

\section*{ATTR 5342. Intervention and Care Planning III. 2 Hours.}

This course will present topics related to interventions and care planning in athletic training and will include rehabilitation \& modalities applications, care planning \& interventions for activity limitations with a focus on upper extremity conditions, long-term post-operative cases, and complex cases. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

ATTR 5361L. Upper Extremity Evaluation Lab. 1 Hour.
Athletic Training Students practice, apply and synthesize knowledge and skills from the injury prevention and upper extremity injury evaluation domains with a physically active population. This course provides the student with the formal instruction and evaluation of the psychomotor skills necessary for upper extremity assessment. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

ATTR 5362. Evaluation Techniques of Athletic Injuries - Upper Extremity. 2 Hours.
Use of scientific assessment methods to recognize and evaluate the nature and severity of athletic injuries to the upper extremities, trunk, and head. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

\section*{ATTR 5371L. Lower Extremity Evaluation Lab. 1 Hour.}

Athletic Training Students practice, apply and synthesize knowledge and skills from the injury prevention and lower extremity injury evaluation domains with a physically active population. This course provides the student with the formal instruction and evaluation of the psychomotor skills necessary for lower extremity assessment. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Fall)

ATTR 5373. Evaluation Techniques of Athletic Injuries - Lower Extremity. 3 Hours.
Use of scientific assessment methods to recognize and evaluate the nature and severity of athletic injuries to the hip and lower extremities. Prerequisite: Admission to graduate athletic training program. (Typically offered: Fall)

\section*{ATTR 5403. Pathophysiology and Treatment I. 3 Hours.}

This course will provide knowledge, skills, and values that the entry-level athletic trainer must possess to prevent, recognize, treat, advise on medications for and, when appropriate, refer general medical conditions and disabilities of physically active individuals. Prerequisite: Admission to the athletic training program. (Typically offered: Spring)

\section*{ATTR 5413. Pathophysiology and Treatment II. 3 Hours.}

This course will provide knowledge, skills, and values that the entry-level athletic trainer must possess to prevent, recognize, treat, advise on medications for and, when appropriate, refer general medical conditions and disabilities of physically active individuals. Prerequisite: ATTR 5403. (Typically offered: Fall)

ATTR 5422. Sport and Nutrition. 2 Hours.
This course is designed to cover concepts and skills related to nutrition and hydration for healing, performance enhancement/recovery and weight gain/loss in patients/clients. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5431. Sport-Related Concussion and Behavior. 1 Hour.}

The Sport-Related Concussion and Behavior course will immerse you in specific topics pertaining study to the study of human brain-behavior relationships. The course will focus on sports-related concussion in youth, collegiate, and professional athletes, with an emphasis on how athletes sustain concussions, how concussions are assessed, treated, and managed, and how return-to-play decisions are made. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5442. Core Competencies and Clinical Care IV. 2 Hours.}

This course is designed to provide the student with clinical education experiences and applications of recognizing and managing emergent mental health concerns in patients/clients with continued emphasis on professional development and clinician longevity. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5453. Therapeutic Modalities in Athletic Training. 3 Hours.}

Contemporary therapeutic modalities used in managing athletic injuries. Modalities covered are classified as thermal agents, electrical agents, or mechanical agents. Emphasis is placed on their physiological effects, therapeutic indications (and contraindications), and clinical application. Prerequisite: Admission to graduate athletic training program. (Typically offered: Fall)

ATTR 5463. Therapeutic Exercise and Rehabilitation of Athletic Injuries. 3 Hours.
A systematic approach to exercise program development, techniques, indications and contraindications of exercise, and progression as related to athletic injury, prevention, and return to play guidelines. Prerequisite: Admission to graduate athletic training program. (Typically offered: Fall)

ATTR 5473. Administration and Leadership in Athletic Training. 3 Hours. Administrative components of athletic training. Basic concepts of legal liability, leadership and management principles, financial management, day to day scheduling and supervision, maintenance, and general administration. Prerequisite: Admission to graduate athletic training program. (Typically offered: Fall)

ATTR 5493. Evidence-Based Practice in Athletic Training. 3 Hours.
In-depth analysis of current literature, research, case studies, and musculoskeletal evaluation and rehabilitation directed toward musculoskeletal injuries of the physically active. Prerequisite: Admission into the Athletic Training Education Program. (Typically offered: Summer)
ATTR 5501. Patient-Centered Care. 1 Hour.
This course will cover concepts related to patient advocacy, cultural competency, cultural humility, health literacy and social determinants of health in regard to patient/ client care. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Summer)

\section*{ATTR 5532. Behavioral Health I. 2 Hours.}

This course provides the student with knowledge and skills related to behavioral health and patient-oriented aspects of clinical care. Topics include but are not limited to understanding mental health emergencies and critical incident plans, behavioral health screening, behavior change theory, and patient advocacy. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Fall)

\section*{ATTR 5542. Behavioral Health II. 2 Hours.}

This course provides the student with knowledge and skills related to behavioral health and patient-oriented aspects of clinical care. Topics include but are not limited to concepts of mental health and rehabilitation due to forced inactivity, antecedents to injury, cognitive appraisal, and psychological skills applications. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Fall)

\section*{ATTR 5611. Performance Enhancement. 1 Hour.}

This course is designed to provide an overview of performance enhancement principles in patients/clients who participate in sport and physical activity. Emphasis is placed on creating relationships with strength conditioning specialists in transitioning patients from care in the clinic to the field. Prerequisite: Admitted to the graduate program in athletic training or instructor consent. (Typically offered: Spring)

\section*{ATTR 5621. Sport Science. 1 Hour.}

This course is designed to provide an overview of sports science principles and applications in physical activity for risk mitigation, return to play and health outcomes. Prerequisite: Admitted to the graduate program in athletic training or instructor consent. (Typically offered: Spring)

\section*{ATTR 5631. Prevention and Wellness. 1 Hour.}

This course is designed to provide the student with content regarding risk mitigation strategies and prevention programming for physical activity; public health concepts related to care, and management strategies for long term conditions. Prerequisite: Admitted to the graduate program in athletic training. (Typically offered: Spring)

\section*{Biological Engineering (BENG) Courses}

BENG 2632. Biological Engineering Design Studio. 2 Hours.
Application of the engineering design process to projects involving living systems. Projects are team-based open-ended design with hands-on construction and testing of design prototypes. Emphasis is placed on understanding, quantifying and controlling complex interacting living systems involving humans, animals, plants and microbes with the goal of creating economically and ecologically sustainable systems. 4 hours of design studio per week. Pre- or Corequisite: PHYS 2054 and BIOL 1543 and BIOL 1541L, and (GNEG 1111 or GNEG 1103). (Typically offered: Fall)

\section*{BENG 2643. Biological Engineering Methods I. 3 Hours.}

Introduction to software techniques for the graphical and geo-spatial representation of processes, structures, devices, landscapes and watersheds in biological engineering. Process layout and process flow diagrams. Two-dimensional and three-dimensional scale drawings and models. Elements of engineering drawings and plans. Mapping and introduction to geographic information systems. Surface topography, digital elevation modeling, spatial land use, soils and other GIS data sources. Stream networks, watershed delineation, grade planning and introductory runoff modeling. Introductory land surveying. Geo-referencing and integrating designed hydrologic structures with GIS-based site maps. Communicating complex designed systems. Two hours of lecture plus one 3-hour lab per week. Corequisite: Lab component. Prerequisite: PHYS 2054. (Typically offered: Spring)
BENG 3113. Measurement and Control for Biological Systems. 3 Hours. Principles of sensors, instruments, measurements, controls, and data acquisition systems, with emphasis on applications for biological systems; including basic circuit analysis, sensor calibration and hardware selection. Basic process monitoring and control methods, including hardware and software. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: PHYS 2074. (Typically offered: Spring)
BENG 3113H. Honors Measurement and Control for Biological Systems. 3 Hours.
Principles of sensors, instruments, measurements, controls, and data acquisition systems, with emphasis on applications for biological systems; including basic circuit analysis, sensor calibration and hardware selection. Basic process monitoring and control methods, including hardware and software. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: PHYS 2074 and honors candidacy. (Typically offered: Spring)
This course is equivalent to BENG 3113.

\section*{BENG 3653. Global Bio-Energy Engineering. 3 Hours.}

Global energy sources with a focus on renewable energy, solar and biomass derived fuels. Biomass energy production from crops and organic residues or waste products. Conversion of biomass to usable fuels. Utilization of renewable energy in society. Includes detailed systems analyses to examine inputs, efficiencies, usable outputs and by-products. Systems design to select and integrate components which meet client needs while maximizing sustainable global impacts. Three hours of lecture per week. Pre- or Corequisite: MEEG 2403 or CHEG 2313. (Typically offered: Fall)

\section*{BENG 3663. Biological Engineering Methods II. 3 Hours.}

Modeling biological processes to predict system behavior as part of the design process. Development and use of spreadsheets and script programming code to represent biological phenomena and processes. Introduction to experimental design as applied to biological processes, including data collection and analysis, and elementary statistics. Use of engineering economics to aid comparisons of alternatives. Analysis of engineering designs and management practices to best meet the needs of society and the client in areas of sustainable water, food and energy systems. Lecture 2 hours and lab 3 hours per week. Corequisite: Lab component. Prerequisite: PHYS 2054 and MATH 2564. (Typically offered: Fall)

\section*{BENG 3723. Unit Operations in Biological Engineering. 3 Hours.}

Design of basic unit operations typical of biological engineering practice; unit operations include pump-pipe, fan-duct, moist air (psychrometric) processes (cool/ heater/humidifier/dryer), air mixing, aeration, and refrigeration; unit operations design will account for unique constraints imposed by biological systems. Lecture 2 hours and lab 3 hours per week. Corequisite: Lab component. Prerequisite: (MEEG 2403 or CHEG 2313) and (CVEG 3213 or CHEG 2133 or MEEG 3503). (Typically offered: Spring)

BENG 3733. Transport Phenomena in Biological Systems. 3 Hours.
Basic principles governing transport of energy and mass. Estimating transfer of energy (heat) through solid bodies and liquid/gas boundary layers through conduction, convection, and radiation. Modeling the rates at which biological reactions occur (kinetics). Estimating the transfer of diffusing mass (gas or liquid) through solid bodies and liquid/gas boundary layers, including processes such as drying and oxygen diffusion. Three hours lecture per week. Pre- or Corequisite: (CVEG 3213 or MEEG 3503 or CHEG 2133) and MATH 2584. Prerequisite: (MEEG 2403 or CHEG 2313). (Typically offered: Fall)

\section*{BENG 4123. Biosensors \& Bioinstrumentation. 3 Hours.}

Principles of biologically based sensing elements and interfacing techniques. Design and analysis methods of biosensing and transducing components in bioinstrumentation. Applications of biosensors and bioinstrumentation in bioprocessing, bioenvironmental, biomechanical and biomedical engineering. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2013 or BIOL 2533 and BENG 3113. (Typically offered: Spring Odd Years)
BENG 450V. Special Problems. 1-4 Hour.
Selected problems in biological engineering are pursued in detail. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 4 hours of degree credit.
BENG 451VH. Honors Thesis. 1-6 Hour.
Honors thesis. Prerequisite: Honors candidacy. (Typically offered: Fall, Spring and Summer)

\section*{BENG 452V. Special Topics in Biological Engineering. 1-6 Hour.}

Special topics in biological engineering not covered in other courses. Prerequisite: Engineering student. (Typically offered: Irregular) May be repeated for up to 8 hours of degree credit.

\section*{BENG 4663. Sustainable Biosystems Designs. 3 Hours.}

Process and methodologies associated with measuring, assessing, and designing sustainable systems in water, energy and food. Quantitatively rigorous methodology for life cycle analysis (LCA) for inventory, assessment and impact analyses. Use of other systems analyses and process control theory to evaluate and design sustainable systems. Application of the methods to a project to gain experience in defining, quantifying and utilizing sustainable metrics. Three hours of lecture per week. Prerequisite: BENG 3653. (Typically offered: Spring)

BENG 4743. Food and Bio-Product Systems Engineering. 3 Hours.
Sustainable bio-product engineering through biosystem design, analysis, modeling, control, and optimization. Life cycle phases for bio-products (food, fiber, feed, and fuel). System analysis of inputs and outputs of energy, water and mass for the purpose of producing and processing biomass for human uses. Advanced bioprocess design topics to utilize enzymes, cells, tissues and organisms to create bio-products and methods for deactivating biological agents to preserve the quality and safety of food and other bio-products. Three hours lecture per week. Pre- or corequisite: BENG 3733. Prerequisite: BENG 3723. (Typically offered: Fall)

\section*{BENG 4812. Senior Biological Engineering Design I. 2 Hours.}

Initiation of comprehensive two-semester team-design projects to design processes, devices and systems to meet needs of clients in sustainable water, food and energy. Practice in following the design process, including the definition of design objectives and constraints, establishing functions and performance criteria, generating alternatives and evaluating alternatives through analysis, modeling and prototype testing; exploring relevant design considerations including performance, efficiency, costs, environmental impacts, sustainability and stewardship, safety and ethics. Developing analytic capability; and practicing design optimization to find best alternative for the client. Lecture 1 hour, laboratory 3 hours per week. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Fall)

\section*{BENG 4823. Senior Biological Engineering Design II. 3 Hours.}

Completion of comprehensive two-semester team-design projects to design processes, devices and systems to meet needs of clients in sustainable water, food and energy. Focus on building of prototypes or models, system optimization, evaluation and improvement. Final design details packaged to meet the needs of the client. Interaction with appropriate persons from other disciplines. Written and oral reporting. Communications with peers, supervisor, clients and the public. Lecture 1 hour per week, two 2-hour lab periods per week. Prerequisite: BENG 4812. Corequisite: Lab component. (Typically offered: Spring)

\section*{BENG 4831. Biological Engineering Professionalism. 1 Hour.}

Preparation to be job-ready, employable and successful in transition to a professional career and further study in Biological Engineering. Introduction to job and graduate study searches. Professional and ethical responsibilities; professional registration. Conflict, change and project management. Effective communications and interactions with supervisors, peers, clients, and stakeholders. Two hour discussion section per week. Prerequisite: Senior standing. (Typically offered: Fall)

BENG 4933. Sustainable Watershed Engineering. 3 Hours.
Provides students with expertise in using advanced tools in watershed monitoring, assessment, and design. Builds on core competencies in hydrology and hydraulics to allow student to evaluate water used by sector in water management regions; evaluate and quantify water demands by sector with emphasis on irrigation; develop risk-based simulations of hydrologic processes, including precipitation, evapotransportation, infiltration, runoff, and stream flow; quantify and simulate constituent loading to watersheds using GIS-based models, and understand the applications of these methods in water resource management policy. Three hours lecture per week. Prerequisite: CVEG 3223. (Typically offered: Fall)

\section*{BENG 4963. Modeling Environmental Biophysics. 3 Hours.}

Interactions between the biosphere and the atmosphere. Connecting the physical environment of solar energy, wind, soil, and hydrology to the biosphere through plant ecophysiology. Boundary layer meteorology, photosynthesis and boundary layer modeling strategies, and the soil-plant-atmosphere continuum. Instrumentation, measurement and modeling strategies for understanding leaf-, landscape- and regional behaviors; and, the transfer, kinetics, and balance of momentum, energy, water vapor, CO 2 , and other atmospheric trace gases between the landscape (vegetation and soil) and the atmosphere. Applications in sustainable agriculture, irrigation, land and water resources, and modeling plant water use and carbon uptake strategies. Three hours of lecture per week. Prerequisite: MATH 2564 and (BENG 4933 or CVEG 3223). (Typically offered: Spring Even Years)

BENG 4973. Practice in Water Quality Monitoring and Analysis. 3 Hours. Application of water quality principles to a real world problem. Team project experience developing quality assurance project plans, designing monitoring systems, selecting chemical analysis methods, estimating loads, performing trend analysis, basic model calibration and validation, and technical report writing and oral presentations. Working with various clientele to analyze water quality data in the context of evaluating real-world problems and issues. Technical course intended for students in engineering, environmental sciences, agriculture and biology. Three hours of lecture per week. Prerequisite: CVEG 3213 or instructor's consent to allow interdisciplinary student teams. (Typically offered: Spring Odd Years)
BENG 500V. Advanced Topics in Biological Engineering. 1-6 Hour.
Special problems in fundamental and applied research. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

BENG 5103. Advanced Instrumentation in Biological Engineering. 3 Hours.
Applications of advanced instrumentation in biological systems. Emphasis on updated sensing and transducing technologies, data acquisition and analytical instruments. Lecture 2 hours, lab 3 hours per week. Corequisite: Lab component. Prerequisite: BENG 3113. (Typically offered: Spring Even Years)

\section*{BENG 5253. Bio-Mems. 3 Hours.}

Topics include the fundamental principles of microfluidics, Navier-Stokes Equation, bio/abio interfacing technology, bio/abio hybrid integration of microfabrication technology, and various biomedical and biological problems that can be addressed with microfabrication technology and the engineering challenges associated with it. Lecture 3 hour per week. Prerequisite: MEEG 3503 or CVEG 3213 or CHEG 2133. (Typically offered: Irregular)
This course is cross-listed with MEEG 5253.

\section*{BENG 5613. Simulation Modeling of Biological Systems. 3 Hours.}

Application of computer modeling and simulation of discrete-event and continuoustime systems to solve biological and agricultural engineering problems. Philosophy and ethics of representing complex processes in simplified form. Deterministic and stochastic modeling of complex systems, algorithm development, application limits, and simulation interpretation. Emphasis on calibration, validation and testing of biological systems models for the purposes of system optimization, resource allocation, real-time control and/or conceptual understanding. Prerequisite: AGST 5023 or (STAT 3003 or STAT 5003) or INEG 2314. (Typically offered: Irregular)

\section*{BENG 5623. Life Cycle Assessment. 3 Hours.}

This course will examine the process and methodologies associated with life cycle analysis (LCA). The course will explore the quantitatively rigorous methodology for life cycle inventory (LCI), LCA and life cycle impact assessment (LCIA). This course is offered on-line. The principal instructor will be a UA faculty member. (Typically offered: Spring)
BENG 5633. Linkages Among Technology, Economics and Societal Values. 3 Hours.
Addresses how macro-level change is influenced by the linkages among technology, economics and societal values. Three major course initiatives: 1) Developing a conceptual model for understanding how macro-level change has occurred over history; 2) Examining recorded history in order to develop a contextual appreciation for Society's current situation; and 3) Using statistical data to identify six overriding world trends that are likely to greatly impact society's goal of achieving sustainable prosperity and well-being in the foreseeable future. Prerequisite: Graduate standing or instructor permission. (Typically offered: Fall and Spring)

BENG 5703. Design and Analysis of Experiments for Engineering Research. 3 Hours.
Principles of planning and design of experiments for engineering research.
Propagation of experimental error. Improving precision of experiments. Analysis of experimental data for optimal design and control of engineering systems using computer techniques. Students must have an introductory background in statistics. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. (Typically offered: Irregular)

\section*{BENG 5801. Graduate Seminar. 1 Hour.}

Reports presented by graduate students on topics dealing with current research in biological engineering. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{BENG 5923. Nonpoint Source Pollution Control and Modeling. 3 Hours.}

Control of hydrologic, meteorologic, and land use factors on nonpoint source (NPS) pollution in urban and agricultural watersheds. Discussion of water quality models to develop NPS pollution control plans and total maximum daily loads (TMDLs), with consideration of model calibration, validation, and uncertainty analysis. Prerequisite: CVEG 3223. (Typically offered: Irregular)

BENG 5933. Environmental and Ecological Risk Assessment. 3 Hours.
Process and methodologies associated with human-environmental and ecological risk assessments. Environmental risk assessments based on human receptors as endpoints, addressing predominantly abiotic processes. Ecological risk assessments based on non-human receptors as endpoints. Approach using hazard definition, effects assessment, risk estimation, and risk management. Application of methods to student projects to gain experience in defining and quantifying uncertainty associated with human perturbation, management and restoration of environmental and ecological processes. (Typically offered: Spring)

\section*{BENG 5963. Modeling Environmental Biophysics. 3 Hours.}

Interactions between the biosphere and the atmosphere. Connecting the physical environment of solar energy, wind, soil, and hydrology to the biosphere through plant ecophysiology. Boundary layer meteorology, photosynthesis and boundary layer modeling strategies, and the soil-plant-atmosphere continuum. Instrumentation, measurement and modeling strategies for understanding leaf-, landscape- and regional behaviors; and, the transfer, kinetics, and balance of momentum, energy, water vapor, CO 2 , and other atmospheric trace gases between the landscape (vegetation and soil) and the atmosphere. Applications in sustainable agriculture, irrigation, land and water resources, and modeling plant water use and carbon uptake strategies. A working knowledge of calculus and a discipline related to the course is expected. Three hours of lecture per week. Students may not earn degree credit for both BENG 4963 and BENG 5963. Prerequisite: Instructor consent. (Typically offered: Spring Even Years)

BENG 5973. Advanced Practice in Water Quality Monitoring and Analysis. 3 Hours.
Application of water quality principles to a real world problem. Team project experience leading and developing quality assurance project plans, designing monitoring systems, selecting chemical analysis methods, estimating loads, performing trend analysis, basic model calibration and validation, team management, and technical report writing and oral presentations. Working with various clientele to analyze water quality data in the context of evaluating realworld problems and issues. Three hours of lecture per week. Prerequisite: Graduate standing. (Typically offered: Spring Odd Years)

BENG 600V. Master's Thesis. 1-6 Hour.
Graduate standing required for enrollment. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

BENG 700V. Doctoral Dissertation. 1-18 Hour.
Candidacy is required for enrollment. (Typically offered: Fall, Spring and
Summer) May be repeated for degree credit.

\section*{Biology (BIOL)}

\section*{Courses}

BIOL 1524. Biological Principles (ACTS Equivalency = BIOL 1004 Lecture). 4 Hours.
Integrated lecture and laboratory focusing on the overriding principles of Biology. Designed to convey biological reasoning to non-science majors. May not count as prerequisite for advanced courses in BIOL. Corequisite: Lab component. (Typically offered: Fall, Spring and Summer)

BIOL 1541L. Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab). 1 Hour.
Experimental and observational techniques used in biology with emphasis on the acquisition and interpretation of results that illustrate major biological principles.
Corequisite: BIOL 1543. (Typically offered: Fall, Spring and Summer)

BIOL 1541M. Honors Principles of Biology Laboratory. 1 Hour.
This course is designed for the well prepared student in the Honors program. It focuses on teaching students experimental and observational techniques used in the science of biology. It emphasizes the acquisition and interpretation of results that illustrate the major principles of biology. Corequisite: BIOL 1543H or BIOL 1543. (Typically offered: Fall and Spring)
This course is equivalent to BIOL 1541 L .
BIOL 1543. Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture). 3 Hours.
Principles that unify biology with emphasis on scientific study that demonstrates how all organisms are the product of evolution and are parts of interacting systems from the molecular to the ecosystem level. Corequisite: BIOL 1541L. (Typically offered: Fall, Spring and Summer)

BIOL 1584. Biology for Majors (ACTS Equivalency = BIOL 1014 Lecture). 4 Hours.
Integrated lecture and laboratory course designed to prepare Biology Majors to enter the rest of the Biology Core of Cell Biology, General Genetics, Evolutionary Biology, and General Ecology. Pre- or Corequisite: CHEM 1103 or CHEM 1203. (Typically offered: Fall and Spring)

BIOL 1601L. Principles of Zoology Laboratory (ACTS Equivalency = BIOL 1054 Lab). 1 Hour.
Laboratory exercises illustrating animal structure, physiology, genetics, and ecology. Corequisite: BIOL 1603. (Typically offered: Fall and Summer)

BIOL 1603. Principles of Zoology (ACTS Equivalency = BIOL 1054 Lecture). 3 Hours.
Introduction to zoological principles relating to cells, organ systems, development, genetics, ecology, and animal phyla. Corequisite: BIOL 1601L. Prerequisite:
BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Fall and Summer)
BIOL 1611L. Plant Biology Laboratory (ACTS Equivalency = BIOL 1034 Lab). 1 Hour.
Plant biology lab. Pre- or Corequisite: BIOL 1613. (Typically offered: Spring and Summer)

BIOL 1613. Plant Biology (ACTS Equivalency = BIOL 1034 Lecture). 3 Hours. Consideration of basic flowering plant structure, growth, development, physiology, genetics, ecology, and a brief survey of other plant groups. Lecture 3 hours per week. BIOL 1611L is recommended as a corequisite and both are required for partial fulfillment of the Fulbright College natural sciences requirement. Prerequisite: BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Spring and Summer)

BIOL 1693. Biology Bridges. 3 Hours.
Prepares students for advanced biology courses including genetics, cell biology, ecology, and evolutionary biology, among others. Synthesizes sub-disciplines within biology using the underlying concepts of evolutionary theory found in scientific literature. Prerequisite: BIOL 1543 or BIOL 1584. (Typically offered: Spring)
BIOL 2011L. General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab). 1 Hour.
Techniques for handling microorganisms. Does not count toward BS in Biology. Corequisite: BIOL 2013. (Typically offered: Fall, Spring and Summer)

BIOL 2011M. Honors General Microbiology Laboratory. 1 Hour.
Techniques for handling microorganisms. Does not count towards BS in Biology. Corequisite: BIOL 2013. (Typically offered: Fall, Spring and Summer)
This course is equivalent to BIOL 2011 L .

BIOL 2013. General Microbiology (ACTS Equivalency = BIOL 2004 Lecture). 3 Hours.
Basic concepts of microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Does not count towards BS in Biology. Corequisite: BIOL 2011L. Prerequisite: (BIOL 1543 and BIOL 1541L) or BIOL 1584)) and (CHEM 1073 and CHEM 1071L or CHEM 1103 or CHEM 1123 and CHEM 1121L or CHEM 1203 and CHEM 1201L). (Typically offered: Fall, Spring and Summer)
BIOL 2211L. Human Physiology Laboratory (ACTS Equivalency = BIOL 2414 Lab). 1 Hour.
Exercises include experiments on osmosis, reflexes, senses, muscle, cardiovascular system, ventilation, metabolism, renal function, etc. Data collection, analysis, and report writing. Does not satisfy the Fulbright College writing requirement. Does not count toward BS in Biology. Corequisite: BIOL 2213. (Typically offered: Fall and Spring)

\section*{BIOL 2213. Human Physiology (ACTS Equivalency = BIOL 2414 Lecture). 3} Hours.
Fundamental concepts of physiology with emphasis in the human. Does not count toward BS in Biology. Corequisite: BIOL 2211L. Prerequisite: (CHEM 1073 and CHEM 1071L) or (CHEM 1103) or (CHEM 1123 and CHEM 1121L) and MATH 1203. (Typically offered: Fall and Spring)
BIOL 2321L. General Genetics Laboratory. 1 Hour.
Analysis of genetic problems and experiments with emphasis on "hands-on" experience with a variety of organisms. May require time outside laboratory period. Laboratory 3 hours per week. Pre- or Corequisite: BIOL 2323. (Typically offered: Fall and Spring)

\section*{BIOL 2323. General Genetics. 3 Hours.}

Surveys of Mendelian, molecular, and population mechanisms of inheritance and gene expression in prokaryotes and eukaryotes. Lecture 3 hours per week. Prerequisite: (BIOL 1584 or BIOL 1543 and BIOL 1541L) and (CHEM 1103 or CHEM 1203) and (MATH 1203 or higher or STAT 2823 or STAT 2303 or equivalent). (Typically offered: Fall and Spring)
BIOL 2441L. Human Anatomy Laboratory (ACTS Equivalency = BIOL 2404 Lab). 1 Hour.
Laboratory 3 hours exercises in mammalian anatomy. Cannot be taken without prior credit in BIOL 2443 or concurrent enrollment in BIOL 2443. Does not count toward BS in Biology. Corequisite: BIOL 2443. (Typically offered: Fall, Spring and Summer)
BIOL 2443. Human Anatomy (ACTS Equivalency = BIOL 2404 Lecture). 3 Hours.
Description of human body as a series of organ systems and their interrelationships. Does not count towards BS in Biology. Corequisite: BIOL 2441L. Prerequisite: Four hours of biological sciences. (Typically offered: Fall, Spring and Summer)
BIOL 2531L. Cell Biology Laboratory. 1 Hour.
Introduction to methods and techniques used in Cell Biology research. Laboratory experiences to highlight topics covered in BIOL 2533. Pre- or Corequisite:
BIOL 2533. (Typically offered: Fall and Spring)
BIOL 2533. Cell Biology. 3 Hours.
Introduction to cell structure, cell processes, biological polymers, energetics, and diversity. An introduction to biochemistry and cell chemistry. Recommended: (CHEM 1123 and CHEM 1121L) or (CHEM 1223 and CHEM 1221L) or equivalent. Prerequisite: BIOL 1584, or BIOL 1543 and BIOL 1541L. (Typically offered: Fall and Spring)

\section*{BIOL 3001L. Principles of Plant Pathology Lab. 1 Hour.}

Lab course in examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions. Spread of disease and principles of disease control. Pre- or Corequisite: PLPA 3003 or BIOL 3003. (Typically offered: Fall)
This course is cross-listed with PLPA 3001L.

BIOL 3003. Principles of Plant Pathology. 3 Hours.
Examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions. Spread of disease and principles of disease control. (Typically offered: Fall)
This course is cross-listed with PLPA 3003.
BIOL 3011L. Introduction to Insect Identification Lab. 1 Hour.
Introductory lab course on insect identification, collection, and curation techniques, primarily designed as an intensive add-on to BIOL 3013 for students wanting a more in-depth examination of insect diversity. Insect collection required. Course includes field trips. Students are encouraged to contact instructor before enrolling. Pre- or corequisite: BIOL 3013. (Typically offered: Fall)
This course is cross-listed with ENTO 3011L.
BIOL 3013. Introduction to Entomology. 3 Hours.
Fundamentals of insect biology including structure and function, development, ecology, behavior, plant feeding and disease transmission. Lecture 3 hours/week. Students interested in a more intensive examination of insects, including collection, curation, and identification techniques, should sign up for the separate one credit lab BIOL 3011L. Students are strongly encouraged to take BIOL 1543 before registering for this course. (Typically offered: Fall)
This course is cross-listed with ENTO 3013.
BIOL 3023. Evolutionary Biology. 3 Hours.
An introduction to the mechanisms and patterns of evolutionary change. Seeks to develop logical, scientific skills and to apply them in understanding how life has changed during the history of the earth. Corequisite: Drill component. Prerequisite: (BIOL 1584 or BIOL 1543, BIOL 1541L) and BIOL 2323. (Typically offered: Fall and Spring)
BIOL 3043. Bones, Bodies, and Brains in Evolutionary Perspective. 3 Hours.
Reviews the anatomy of the human body, comparing this anatomy with primates, mammals, and vertebrates, and it will consider how the major features of the human body emerged throughout evolution. (Typically offered: Spring)
This course is cross-listed with ANTH 3043.

\section*{BIOL 3123H. Honors Prokaryote Biology. 3 Hours.}

An in-depth coverage of prokaryote diversity, genetics, metabolism, growth, structures and functions. Prerequisite: BIOL 2533. (Typically offered: Spring)
BIOL 3273. Inquiry and Modeling in Science Education. 3 Hours.
Study of science practices with emphasis on modeling and inquiry for learning/ teaching. Includes practical, philosophical, cognitive, and disciplinary specific dimensions of doing science in academic and nonacademic settings. Includes planning and implementing multiple scientific inquiries, engaging in reflective practices, writing and presenting scientific information. Safety and ethical issues are included. Prerequisite: 8 hours of BIOL courses. Corequisite: Drill component. (Typically offered: Fall)
This course is cross-listed with PHYS 3273, CHEM 3273.

\section*{BIOL 3404. Comparative Vertebrate Morphology. 4 Hours.}

Anatomy of selected vertebrate animals with emphasis upon homologous structures in various animal groups. The recommended anatomy course for Biology BS majors. Lecture 2 or 3 hours, laboratory 4 or 6 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Fall and Spring)
BIOL 3861L. General Ecology Laboratory. 1 Hour.
General ecology lab. Pre- or Corequisite: BIOL 3863. (Typically offered: Fall)
BIOL 3863. General Ecology. 3 Hours.
Ecological principles and concepts; environmental factors and interactions that determine distribution and abundance of organisms. Prerequisite: 7 hours of biological science. (Typically offered: Fall and Spring)

\section*{BIOL 3923H. Honors Colloquium. 3 Hours.}

Covers a special topic or issue, offered as part of the honors program. Prerequisite: honors candidacy (not restricted to candidacy in biological sciences). (Typically offered: Irregular) May be repeated for degree credit.

\section*{BIOL 4003L. Laboratory in Prokaryote Biology. 3 Hours.}

Laboratory techniques in prokaryote culture, identification, physiology, metabolism, and genetics. Laboratory 6 hours per week. Prerequisite: BIOL 3123. (Typically offered: Fall and Spring)

\section*{BIOL 4013. Insect Behavior and Chemical Ecology. 3 Hours.}

Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory/discussion 2 hours per week. Corequisite: Lab component. (Typically offered: Spring Even Years)
This course is cross-listed with ENTO 4013.
BIOL 4024. Insect Diversity and Taxonomy. 4 Hours.
Principles and practices of insect classification and identification with emphasis on adult insects. Corequisite: Lab component. Prerequisite: ENTO 3013. (Typically offered: Fall Even Years)
This course is cross-listed with ENTO 4024.

\section*{BIOL 4043. Prokaryote Biology. 3 Hours.}

An in-depth coverage of prokaryote diversity, genetics, metabolism, growth, structures and functions. Prerequisite: BIOL 2533. (Typically offered: Spring)

\section*{BIOL 4053. Insect Ecology. 3 Hours.}

To develop understanding of important ecological concepts through study of dynamic relationships among insects and their environment. To become familiar with the literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. Corequisite: Lab component. (Typically offered: Fall Even Years)
This course is cross-listed with ENTO 4053.
BIOL 4104. Taxonomy of Flowering Plants. 4 Hours.
Identifying, naming, and classifying of wildflowers, weeds, trees, and other flowering plants. Emphasis is on the practical aspects of plant identification. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1613 and BIOL 1611L and BIOL 2323 and BIOL 3023. (Typically offered: Spring)

\section*{BIOL 4114. Dendrology. 4 Hours.}

Morphology, classification, geographic distribution, and ecology of woody plants. Lecture 3 hours, laboratory 3 hours per week, and fieldtrips. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Fall)

BIOL 4122. Food Microbiology. 2 Hours.
The study of food microbiology including classification/taxonomy, contamination, preservation and spoilage of different kinds of foods, pathogenic microorganisms, food poisoning, sanitation, control and inspection and beneficial uses of microorganisms. Prerequisite: BIOL 2013 and BIOL 2011L or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with FDSC 4122.
BIOL 4133. Plant Disease Control. 3 Hours.
Principles, methods and mechanics of plant disease control. Emphasis is given to the integration of control measures and epidemiology of plant diseases. Lecture 3
hours per week. Prerequisite: PLPA 3003. (Typically offered: Fall)
This course is cross-listed with PLPA 4223.
BIOL 4153. Biology of Global Change. 3 Hours.
Covers impact of global change on sustainability and adaptability of biological systems. Corequisite: BIOL 4252. Prerequisite: (BIOL 1543 and BIOL 1541L) or BIOL 1584. (Typically offered: Spring)

BIOL 4163. Dynamic Models in Biology. 3 Hours.
Mathematical and computational techniques for developing, executing, and analyzing dynamic models arising in the biological sciences. Both discrete and continuous time models are studied. Applications include population dynamics, cellular dynamics, and the spread of infectious diseases. Prerequisite: MATH 2554. (Typically offered: Irregular)
This course is cross-listed with MATH 4163.
BIOL 4174. Conservation Genetics. 4 Hours.
Covers concepts of biodiversity identification and illustrates how genetic data are generated and analyzed to conserve and restore biological diversity. Corequisite: Lab component and drill. Prerequisite: BIOL 3023, BIOL 3863 and STAT 2823 (or equivalent), and Junior standing. (Typically offered: Spring)

BIOL 4213. Biological Regulation and Subcellular Communication. 3 Hours. Combines lectures, review of primary literature, student presentations, and small group discussions to explore a diversity of topics related to mechanisms of biological regulation and subcellular communication. Prerequisite: BIOL 2323 and BIOL 2533. (Typically offered: Irregular)

\section*{BIOL 4223. Bacterial Lifestyles. 3 Hours.}

Introduces students to bacteria as prokaryotic organisms, different from eukaryotes such as plants and animals. Model microbial systems will be studied to identify unique strategies that bacteria employ to thrive in their respective environments or develop special adaptations to harsh environments. Prerequisite: BIOL 2013 and BIOL 2011L or BIOL 3123. (Typically offered: Spring Odd Years) This course is cross-listed with PLPA 4123.

BIOL 4233. Genomics and Bioinformatics. 3 Hours.
Principles of molecular and computational analyses of genomes. Prerequisite: BIOL 2533 and BIOL 2323. (Typically offered: Spring)

\section*{BIOL 4234. Comparative Physiology. 4 Hours.}

Comparison of fundamental physiological mechanisms in various animal groups. Adaptations to environmental factors at both the organismal and cellular levels are emphasized. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2533 and CHEM 3613 and (CHEM 3611L or CHEM 3612M). (Typically offered: Fall)

\section*{BIOL 4241L. Ichthyology Laboratory. 1 Hour.}

Practical application of fish identification based on anatomy, fish sampling methods, and curation of fish specimen. Laboratory component of BIOL 4243. Corequisite: BIOL 4243. (Typically offered: Spring Odd Years)

\section*{BIOL 4241M. Honors Ichthyology Laboratory. 1 Hour.}

Practical application of fish identification based on anatomy, fish sampling methods, and curation of fish specimen. Laboratory component of BIOL 4243H. Prerequisite: Honors standing. Corequisite: BIOL 4243H. (Typically offered: Spring Odd Years) This course is equivalent to BIOL 4241 L .

BIOL 4243. Ichthyology. 3 Hours.
Comprehensive overview of the diversity of fishes. Covers anatomy, physiology, evolution, taxonomy, ecology, behavior, zoogeography and conservation of marine and freshwater fishes. Lecture 3 hours per week. Prerequisite: Eight credits in Biology. Corequisite: BIOL 4241L. (Typically offered: Spring Odd Years)

\section*{BIOL 4243H. Honors Ichthyology. 3 Hours.}

Comprehensive overview of the diversity of fishes. Covers anatomy, physiology, evolution, taxonomy, ecology, behavior, zoogeography and conservation of marine and freshwater fishes. Lecture 3 hours per week. Prerequisite: Eight credits in Biology and honors standing. Corequisite: BIOL 4241L. (Typically offered: Spring Odd Years)
This course is equivalent to BIOL 4243.

BIOL 4252. Biology of Global Change Seminar. 2 Hours.
Readings, essays, and group discussions that parallel the 27 lectures in BIOL 4153 and which dissect the resulting impacts of global change on sustainability and adaptability of biological systems. Corequisite: BIOL 4153. Prerequisite: BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Spring)

BIOL 4252H. Honors Biology of Global Change Seminar. 2 Hours.
Readings, essays, and group discussions that parallel the 27 lectures in BIOL 4153 and which dissect the resulting impacts of global change on sustainability and adaptability of biological systems. Corequisite: BIOL 4153. Prerequisite: BIOL 1584 or BIOL 1543 and BIOL 1541L. (Typically offered: Spring)
This course is equivalent to BIOL 4252.

\section*{BIOL 4263. Cell Physiology. 3 Hours.}

In-depth molecular coverage of cellular processes involved in growth, metabolism, transport, excitation, signalling and motility, with emphasis on function and regulation in eukaryotes, primarily animals. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3813 and PHYS 2033. (Typically offered: Fall)

BIOL 4273. Endocrinology. 3 Hours.
In endocrinology we study hormonal integration of living processes as all levels from molecule to organism. We will work with the mechanisms of hormone action, the endocrine control axes and hormones physiological role. The course will include paper discussions and student presentations on topics of special interest. Prerequisite: BIOL 2533 or equivalent. (Typically offered: Spring)

BIOL 4313. Molecular Cell Biology. 3 Hours.
In-depth molecular coverage of transcription, cell cycle, translation, and protein processing in eukaryotes and prokaryotes. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3603 and CHEM 3601L and CHEM 3613 and CHEM 3611L. (Typically offered: Spring)

\section*{BIOL 4313H. Honors Molecular Cell Biology. 3 Hours.}

In-depth molecular coverage of transcription, cell cycle, translation, and protein processing in eukaryotes and prokaryotes. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3603 and CHEM 3601L and CHEM 3613 and CHEM 3611L. (Typically offered: Spring)
This course is equivalent to BIOL 4313.
BIOL 4323. Comparative Neurobiology. 3 Hours.
Exploration of modern research approaches to understanding the development and function of animal nervous systems, with emphasis on molecular and cellular approaches in non-human animal models commonly used in biomedical research. Format combines lectures, group discussions, and student presentations using examples from the primary neurobiology literature. Prerequisite: BIOL 2323 and BIOL 2533 or equivalents. (Typically offered: Irregular)
BIOL 4333. Biotechnology in Agriculture. 3 Hours.
Discussion of the techniques, applications, and issues of biotechnology as it is being used in modern agriculture. Coverage includes the basics of molecular biology, production of transgenic plants and animals, and new applications in the agricultural, food, and medical marketplace. Lecture and discussion, 3 hours per week. (Typically offered: Fall)
This course is cross-listed with PLPA 4333.
BIOL 4353. Ecological Genetics/Genomics. 3 Hours.
Analysis of the genetics of natural and laboratory populations with emphasis on the ecological bases of evolutionary change. Prerequisite: BIOL 2323 and BIOL 2321L and MATH 2554 and STAT 2823 or equivalents. (Typically offered: Fall Odd Years)

\section*{BIOL 4433. Principles of Evolution. 3 Hours.}

Advanced survey of the mechanisms of evolutionary change with special emphasis on advances since the Modern Synthesis. Historical, theoretical, and population genetics approaches are discussed. Recommended BIOL 3023 and BIOL 2321L and BIOL 3861L. Prerequisite: BIOL 2323 and BIOL 3863. (Typically offered: Fall Even Years)

BIOL 4463. Physiological Ecology. 3 Hours.
Interactions between environment, physiology, and properties of individuals and populations on both evolutionary and ecological scales. Prerequisite: BIOL 3863 and BIOL 4234 and its lab component. (Typically offered: Spring Odd Years)
BIOL 4511L. Population Ecology Laboratory. 1 Hour.
Population Ecology Lab. Pre- or Corequisite: BIOL 4513. (Typically offered: Fall Even Years)

\section*{BIOL 4513. Population Ecology. 3 Hours.}

Survey of theoretical and applied aspects of population processes stressing models of growth, interspecific interactions, and adaptation to physical and biotic environments. Prerequisite: BIOL 3863. (Typically offered: Fall Even Years)

\section*{BIOL 4523. Plant Ecology. 3 Hours.}

To develop understanding of important ecological concepts through study of dynamics relationships among plants and their environment. To become familiar with the literature of plant ecology, and interpretation and critique of ecological research. Prerequisite: BIOL 3863. (Typically offered: Spring Even Years)

\section*{BIOL 4543. Developmental Biology. 3 Hours.}

An analysis of the principles and mechanisms of development emphasizing the embryonic and postembryonic development of animals. Prerequisite: BIOL 2533 and BIOL 2323. (Typically offered: Irregular)

BIOL 4554. Developmental Biology with Laboratory. 4 Hours.
An analysis of the concepts of mechanisms of development emphasizing the experimental approach. Lecture 3 hours, laboratory 3 hours per week. Students may not receive degree credit for both BIOL 4543 and BIOL 4554. Corequisite: Lab component. Prerequisite: BIOL 2533 and BIOL 2323 or graduate standing. (Typically offered: Fall)

\section*{BIOL 4563. Cancer Biology. 3 Hours.}

An introduction to the fundamentals of cancer biology. Prerequisite: BIOL 2533. (Typically offered: Fall)

\section*{BIOL 4573L. Introduction to Research in Animal Development and Evolution. 3} Hours.
Provides a hands-on introduction to investigation of problems in animal development and evolution. Emphasis on comparative molecular genetic approaches using nontraditional model organisms. Prerequisite: BIOL 2323. (Typically offered: Fall)

\section*{BIOL 4583. Genetic Engineering. 3 Hours.}

Provides an overview of current methods for altering gene expression, as well as ethical concerns arising from genetic engineering. Special emphasis is placed on practical considerations and techniques necessary for implementing genetic engineering strategies. Prerequisite: BIOL 2323 and BIOL 2533. (Typically offered: Fall)

\section*{BIOL 4613. Primate Adaptation and Evolution. 3 Hours.}

Introduction to the biology of the order Primates. This course considers the comparative anatomy, behavioral ecology and paleontology of our nearest living relatives. Prerequisite: BIOL 3023 or ANTH 1013. (Typically offered: Spring) This course is cross-listed with ANTH 4613.

\section*{BIOL 4693. Forest Ecology. 3 Hours.}

Introduction to the various biological, ecological and historical aspects of forest communities, with particular emphasis on the forests of the central and southeastern United States. Prerequisite: BIOL 3863. (Typically offered: Irregular)

\section*{BIOL 4703. Mechanisms of Pathogenesis. 3 Hours.}

A survey of the events causing human disease at the molecular, cellular and genetic levels. Seeks to develop an appreciation that both the tricks pathogens use and the body's own defenses contribute to pathology. Prerequisite: BIOL 2533. (Typically offered: Fall)
BIOL 4711L. Basic Immunology Laboratory. 1 Hour.
Basic immunology laboratory. Corequisite: BIOL 4713. (Typically offered: Spring)

\section*{BIOL 4713. Basic Immunology. 3 Hours.}

A general overview of immunity with emphasis on the underlying cellular, molecular, and genetic events, and discussions of more specialized issues in immunology, such as disease states involving the immune system, and other interesting problems in modern immunology. Lecture 2 hours, laboratory 4 hours per week. Prerequisite: BIOL 2323 and BIOL 2533. (Typically offered: Spring)

\section*{BIOL 4713H. Honors Basic Immunology. 3 Hours.}

A general overview of Immunity with emphasis on the underlying cellular, molecular, and genetic events, and discussions of more specialized issues in Immunology, such as disease states involving the Immune system, and other interesting problems in modern Immunology. Prerequisite: BIOL 2323 and BIOL 2533. (Typically offered: Spring)
This course is equivalent to BIOL 4713.
BIOL 4723L. Laboratory in Microbial Fermentation. 3 Hours.
An inquiry-based lab focusing on the microbiology of brewing. Introduces students to laboratory techniques used in molecular ecology, microbial physiology, genetics, and brewing. Laboratory 6 hours per week. Pre- or corequisite: FDSC 2723. Prerequisite: BIOL 2013 or BIOL 2323 or BIOL 2533. (Typically offered: Fall Even Years)

\section*{BIOL 4734. Wildlife Management Techniques. 4 Hours.}

To familiarize students with techniques used in the management of wildlife populations. Students will be exposed to field methods, approaches to data analysis, experimental design, and how to write a scientific paper. Management applications will be emphasized. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Irregular)

\section*{BIOL 4744. Fish Biology. 4 Hours.}

Morphology, classification, life history, population dynamics, and natural history of fishes and fish-like vertebrates. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: 12 hours of biological science. (Typically offered: Spring Odd Years)

\section*{BIOL 4763. Ornithology. 3 Hours.}

Taxonomy, morphology, physiology, behavior, and ecology of birds. Lecture, laboratory, and field work. Corequisite: Lab component. Prerequisite: BIOL 3863 (Typically offered: Spring Even Years)

\section*{BIOL 4774. Biometry. 4 Hours.}

Students learn biological statistics and experimental design by actually designing experiments and analyzing data, as well as through lecture, discussion, reading, writing, and problem solving. Lecture 3 hours, laboratory 3 hours each week.
Corequisite: Lab component. Prerequisite: (STAT 2823 or STAT 2303 or equivalent) and BIOL 3863. (Typically offered: Spring Even Years)

BIOL 4793. Introduction to Neurobiology. 3 Hours.
Exploration of the neurological underpinnings of perception, action, and experience including: how sense receptors convert information in the world into electricity, how information flows through the nervous systems, how neural wiring makes vision possible, how the nervous system changes with experience, and how the system develops. Prerequisite: BIOL 2533. (Typically offered: Spring)

BIOL 480V. Special Topics in Biological Sciences. 1-6 Hour.
Consideration of new areas of biological sciences not yet treated adequately in other courses. Prerequisite: 8 hours of biological sciences. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

BIOL 480VH. Honors Special Topics in Biological Sciences. 1-6 Hour.
Consideration of new areas of biological sciences not yet treated adequately in other courses. Prerequisite: 8 hours of biological sciences. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to BIOL 480V.

\section*{BIOL 4833. Animal Behavior. 3 Hours.}

Organization, regulation, and phylogeny of animal behavior, emphasizing diversity across animal taxa. Lecture, laboratory, and field work. Corequisite: Lab component. (Typically offered: Spring)

BIOL 4844. Community and Ecosystem Ecology. 4 Hours.
Survey of theoretical and applied aspects of community processes stressing structure, tropic dynamics, community interactions, and major community types. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Fall Odd Years)

\section*{BIOL 4863. Analysis of Animal Populations. 3 Hours.}

Basic principles of design and analysis for population studies of fish and wildlife species. Students will be instructed in the use of the latest software for estimating population parameters. Focus will be on both concepts and applications.
Management applications of estimated parameters will be emphasized. Lecture
2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Spring Even Years)

BIOL 4873. Microbial Molecular Genetics and Informatics. 3 Hours.
Fundamentals of microbial genomics and bioinformatics. Course covers microbial genetics, genetic structure, genome organization, proteome organization, approaches for the analysis of DNA, RNA, and proteins, cellular metabolic pathways, genetic regulation, small RNA molecules, functional genomics, metagenomics, and bioinformatics approaches for analysis of microbial genomes. Prerequisite: BIOL 2323 or BIOL 2533. (Typically offered: Fall)

BIOL 4883. Mammalian Evolution and Osteology. 3 Hours.
Focuses on describing the evolutionary history of mammals, a group of vertebrates that include over 5,000 species in 29 orders, and will provide an overview of living species and their identifying features. Prerequisite: ANTH 1013 and ANTH 1011L, or BIOL 1543 and BIOL 1541L, or instructor consent. (Typically offered: Fall Even Years)
This course is equivalent to ANTH 4703.

\section*{BIOL 496V. Culture and Environment: Field Studies. 1-6 Hour.}

May be taken by students participating in overseas study programs or other domestic field study programs approved by the department. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
BIOL 496VH. Honors Culture and Environment: Field Studies. 1-6 Hour.
May be taken by students participating in overseas study programs or other domestic field study programs approved by the department. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
This course is equivalent to BIOL 496V.
BIOL 498V. Senior Thesis. 1-6 Hour.
Senior thesis. (Typically offered: Fall, Spring and Summer)
BIOL 499V. Research In Biological Sciences. 1-4 Hour.
Research. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.
BIOL 499VH. Honors Research in Biological Sciences. 1-4 Hour.
Honors research. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.
This course is equivalent to BIOL 499V.
BIOL 5001. Seminar in Biology. 1 Hour.
Discussion of selected topics and review of current literature in any area of the biological sciences. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
BIOL 5003L. Laboratory in Prokaryote Biology. 3 Hours.
Laboratory techniques in prokaryote culture, identification, physiology, metabolism, and genetics. Laboratory 6 hours per week. Prerequisite: BIOL 3123. (Typically offered: Fall and Spring)

BIOL 5024. Insect Diversity and Taxonomy. 4 Hours.
Principles and practices of insect classification and identification with emphasis on adult insects. 2.5 hours lecture, 4 hours lab. Previous knowledge of basic entomology is necessary. Graduate degree credit will not be given for both
BIOL 4024 and BIOL 5024. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Fall)
This course is cross-listed with ENTO 5024.
BIOL 5034. Wildlife Management Techniques. 4 Hours.
To familiarize students with techniques used in the management of wildlife populations. Students will be exposed to field methods, approaches to data analysis, experimental design, and how to write a scientific paper. Management applications will be emphasized. Lecture 3 hours, laboratory 3 hours per week. Graduate degree credit will not be given for both BIOL 4734 and BIOL 5034. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Irregular)

\section*{BIOL 5043. Prokaryote Biology. 3 Hours.}

An in-depth coverage of prokaryote diversity, genetics, metabolism, growth, structures and functions. (Typically offered: Spring)

\section*{BIOL 5053. Insect Ecology. 3 Hours.}

Teaches important ecological concepts through study of dynamic relationships among insects and their environment. Introduces literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. 2 hours lecture/2 hours lab. Graduate degree credit will not be given for both BIOL 4053 and BIOL 5053. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Fall Even Years) This course is cross-listed with ENTO 5053.

\section*{BIOL 5104. Taxonomy of Flowering Plants. 4 Hours.}

Identifying, naming, and classifying of wildflowers, weeds, trees, and other flowering plants. Emphasis is on the practical aspects of plant identification. Lecture 3 hours, laboratory 3 hours per week. Graduate degree credit will not be given for both BIOL 4104 and BIOL 5104. Corequisite: Lab component. Prerequisite: BIOL 1613 and BIOL 1611L and BIOL 2323 and BIOL 3023. (Typically offered: Spring)

\section*{BIOL 5113. Insect Behavior and Chemical Ecology. 3 Hours.}

Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Spring Even Years)
This course is cross-listed with ENTO 5113.

\section*{BIOL 5122. Food Microbiology. 2 Hours.}

The study of food microbiology including classification/taxonomy, contamination, preservation and spoilage of different kinds of foods, pathogenic microorganisms, food poisoning, sanitation, control and inspection and beneficial uses of microorganisms. Graduate degree credit will not be given for both BIOL 4122 and BIOL 5122. Prerequisite: BIOL 2013 and BIOL 2011L or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with FDSC 5122.

\section*{BIOL 5124. Dendrology. 4 Hours.}

Morphology, classification, geographic distribution, and ecology of woody plants. Lecture 3 hours, laboratory 3 hours per week, and fieldtrips. Graduate degree credit will not be given for both BIOL 4114 and BIOL 5124. Prerequisite: BIOL 3863. (Typically offered: Fall)

\section*{BIOL 5153. Practical Programming for Biologists. 3 Hours.}

Hands-on instruction in the fundamentals of biological computing. Students learn how to set up a Unix work station, work from the command line, install software, build databases, and program in Python, a popular scripting language for biological applications. Most examples focus on the analysis of genomic data. (Typically offered: Spring)

BIOL 5163. Dynamic Models in Biology. 3 Hours.
Mathematical and computational techniques for developing, executing, and analyzing dynamic models arising in the biological sciences. Both discrete and continuous time models are studied. Applications include population dynamics, cellular dynamics, and the spread of infectious diseases. Graduate degree credit will not be given for both BIOL 4163 and BIOL 5163. Prerequisite: MATH 2554. (Typically offered: Irregular)

\section*{BIOL 5174. Conservation Genetics. 4 Hours.}

Covers concepts of biodiversity identification and illustrates how genetic data are generated and analyzed to conserve and restore biological diversity. Corequisite: Lab component. Prerequisite: BIOL 3023, BIOL 3863 and STAT 2823 (or equivalent) and graduate standing. (Typically offered: Spring)

BIOL 5213. Biological Regulation and Subcellular Communication. 3 Hours. Combines lectures, review of primary literature, student presentations, and small group discussions to explore a diversity of topics related to mechanisms of biological regulation and subcellular communication. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{BIOL 5223. Bacterial Lifestyles. 3 Hours.}

The course will introduce students to bacteria as prokaryotic organisms, different from eukaryotes such as plants and animals. Model microbial systems will be studied in more detail to identify unique strategies that bacteria employ to thrive in their respective environment, whether they are causing diseases or establishing beneficial interactions with animal or plants or coexisting with other microorganisms in diverse ecological environments. The course will also cover special adaptations that bacteria have evolved to adapt to harsh environments and how these adaptations can be harnessed to control pollution. Prerequisite: (BIOL 2013 and BIOL 2011L) or BIOL 3123. (Typically offered: Spring Odd Years) This course is cross-listed with PLPA 5123.

\section*{BIOL 5233. Genomics and Bioinformatics. 3 Hours.}

Principles of molecular and computational analyses of genomes. Prerequisite: BIOL 2533 or BIOL 2323. (Typically offered: Spring)

\section*{BIOL 5241L. Ichthyology Laboratory. 1 Hour.}

Practical application of fish identification based on anatomy, fish sampling methods, and curation of fish specimen. Laboratory component of BIOL 5243. Corequisite: BIOL 5243. (Typically offered: Spring Odd Years)

\section*{BIOL 5243. Ichthyology. 3 Hours.}

Comprehensive overview of the diversity of fishes. Covers anatomy, physiology, evolution, taxonomy, ecology, behavior, zoogeography and conservation of marine and freshwater fishes. Lecture 3 hours per week. Corequisite: BIOL 5241L. (Typically offered: Spring Odd Years)

\section*{BIOL 5254. Comparative Physiology. 4 Hours.}

Comparison of fundamental physiological mechanisms in various animal groups. Adaptations to environmental factors at both the organismal and cellular levels are emphasized. Lecture 3 hours, laboratory 3 hours per week. Graduate degree credit will not be given for both BIOL 4234 and BIOL 5254. Prerequisite: BIOL 2533 and CHEM 3613 and (CHEM 3611L or CHEM 3612M). (Typically offered: Fall)

BIOL 5263. Cell Physiology. 3 Hours.
In-depth molecular coverage of cellular processes involved in growth, metabolism, transport, excitation, signaling and motility, with emphasis on function and regulation in eukaryotes, primarily animals. Prerequisite: BIOL 2323, BIOL 2533, BIOL 2531L, CHEM 3813, and PHYS 2033. (Typically offered: Fall)

\section*{BIOL 5273. Endocrinology. 3 Hours.}

In endocrinology we study hormonal integration of living processes at all levels from molecule to organism. We will work with the mechanisms of hormone action, the endocrine control axes and hormones physiological role. The course will include paper discussions and student presentations on topics of special interest. (Typically offered: Spring)

\section*{BIOL 5313. Molecular Cell Biology. 3 Hours.}

In-depth molecular coverage of transcription, cell cycle, translation, and protein processing in eukaryotes and prokaryotes. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3603 and CHEM 3601L and CHEM 3613 and CHEM 3611L. (Typically offered: Spring)

\section*{BIOL 5323. Comparative Neurobiology. 3 Hours.}

Exploration of modern research approaches to understanding the development and function of animal nervous systems, with emphasis on molecular and cellular approaches in non-human animal models commonly used in biomedical research. Format combines lectures, group discussions, and student presentations using examples from the primary neurobiology literature. Prerequisite: Graduate standing (Typically offered: Irregular)

\section*{BIOL 5343. Advanced Immunology. 3 Hours.}

Aspects of innate, cell-mediated, and humoral immunity in mammalian and avian species. Molecular mechanisms underlying the function of the immune system are emphasized. A course in Basic Immunology prior to enrollment in Advanced Immunology is recommended but not required. Lecture 3 hours per week. (Typically offered: Spring)
This course is cross-listed with POSC 5343.

\section*{BIOL 5352L. Immunology in the Laboratory. 2 Hours.}

Laboratory course on immune-diagnostic laboratory techniques and uses of antibodies as a research tool. Included are cell isolation and characterization procedures, immunochemistry, flow cytometry, ELISA and cell culture assay systems. Laboratory 6 hours per week. Prerequisite: POSC 5343 or BIOL 5343. (Typically offered: Spring)

This course is cross-listed with POSC 5352L.

\section*{BIOL 5353. Ecological Genetics/genomics. 3 Hours.}

Analysis of the genetics of natural and laboratory populations with emphasis on the ecological bases of evolutionary change. Prerequisite: BIOL 2323 and BIOL 2321L, BIOL 3023 and MATH 2554 and STAT 2823 or equivalents. (Typically offered: Fall Odd Years)

\section*{BIOL 5404. Comparative Botany. 4 Hours.}

A comparative approach to organisms classically considered to be plants with emphasis on morphology, life history, development, and phylogeny. Three hours lecture, 4 hours lab per week. Corequisite: Lab component. Prerequisite: Graduate standing. (Typically offered: Fall Odd Years)

BIOL 5433. Principles of Evolution. 3 Hours.
Advanced survey of the mechanisms of evolutionary change with special emphasis on advances since the Modern Synthesis. Historical, theoretical, and population genetics approaches are discussed. Recommended: BIOL 3023 and BIOL 2321L and BIOL 3861L. Prerequisite: BIOL 2323 and BIOL 3863. (Typically offered: Fall Even Years)

BIOL 5463. Physiological Ecology. 3 Hours.
Interactions between environment, physiology, and properties of individuals and populations on both evolutionary and ecological scales. Prerequisite: BIOL 3863 and BIOL 4234. (Typically offered: Spring Odd Years)

BIOL 5511L. Population Ecology Laboratory. 1 Hour.
Demonstration of the models and concepts from BIOL 5513. Pre- or Corequisite:
BIOL 5513. (Typically offered: Fall Even Years)
BIOL 5513. Population Ecology. 3 Hours.
Survey of theoretical and applied aspects of populations processes stressing models of growth, interspecific interactions, and adaptation to physical and biotic environments. Corequisite: BIOL 5511L. Prerequisite: BIOL 3863. (Typically offered: Fall Even Years)

BIOL 5523. Plant Ecology. 3 Hours.
To develop understanding of important ecological concepts through study of dynamics relationships among plants and their environment. To become familiar with the literature of plant ecology, and interpretation and critique of ecological research. Prerequisite: BIOL 3863. (Typically offered: Spring Even Years)

\section*{BIOL 5524. Developmental Biology with Laboratory. 4 Hours.}

An analysis of the concepts and mechanisms of development emphasizing the experimental approach. Students may not receive degree credit for both BIOL 5543 Developmental Biology and BIOL 5524 Developmental Biology with Laboratory. Corequisite: Lab component. (Typically offered: Fall)

BIOL 5543. Developmental Biology. 3 Hours.
An analysis of the principles and mechanisms of development emphasizing the embryonic and postembryonic development of animals. Degree credit will not be allowed for both BIOL 5543 and BIOL 5524. (Typically offered: Irregular)

\section*{BIOL 5553. Astrobiology. 3 Hours.}

Discusses the scientific basis for the possible existence of extraterrestrial life. Includes the origin and evolution of life on Earth, possibility of life elsewhere in the solar system (including Mars), and the possibility of life on planets around other stars. Prerequisite: Instructor consent. (Typically offered: Irregular) This course is cross-listed with SPAC 5553.

\section*{BIOL 5563. Cancer Biology. 3 Hours.}

An introduction to the fundamentals of cancer biology. Prerequisite: BIOL 2533. (Typically offered: Fall)

BIOL 5613. Primate Adaptation and Evolution. 3 Hours.
Introduction to the biology of the order Primates. This course considers the comparative anatomy, behavioral ecology and paleontology of our nearest living relatives. Graduate degree credit will not be given for both BIOL 4613 and BIOL 5613. Prerequisite: BIOL 3023 or ANTH 1013. (Typically offered: Spring) This course is cross-listed with ANTH 5623.

BIOL 5693. Forest Ecology. 3 Hours.
Introduction to the various biological, ecological and historical aspects of forest communities, with particular emphasis on the forests of the central and southeastern United States. Graduate degree credit will not be given for both BIOL 4693 and BIOL 5693. Prerequisite: BIOL 3863. (Typically offered: Irregular)

BIOL 5703. Mechanisms of Pathogenesis. 3 Hours.
A survey of events causing human disease at the molecular, cellular and genetic levels. Seeks to develop an appreciation that both the tricks pathogens use and the body's own defenses contribute to pathology. (Typically offered: Fall)

BIOL 5711L. Basic Immunology Laboratory. 1 Hour.
Basic immunology laboratory. Graduate degree credit will not be given for both BIOL 4711L and BIOL 5711L. Corequisite: BIOL 5713. (Typically offered: Spring)

BIOL 5713. Basic Immunology. 3 Hours.
A general overview of Immunity with emphasis on the underlying cellular, molecular and genetic events controlling immune reactions. Reading of the primary literature on disease states involving the immune system. (Typically offered: Spring)

\section*{BIOL 5723. Fish Biology. 3 Hours.}

Morphology, classification, life histories, population dynamics, and natural history of fishes and fish-like vertebrates. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: 12 hours of biological sciences. (Typically offered: Spring Odd Years)

BIOL 5743. Herpetology. 3 Hours.
Morphology, classification and ecology of amphibians and reptiles. Lecture 2 hours, laboratory 1 hour per week. Corequisite: Lab component. (Typically offered: Spring Even Years)

BIOL 5763. Ornithology. 3 Hours.
Taxonomy, morphology, physiology, behavior, and ecology of birds. Lecture, laboratory, and field work. Corequisite: Lab component. Prerequisite: 10 hours of biological sciences. (Typically offered: Spring Even Years)

\section*{BIOL 5774. Biometry. 4 Hours.}

Students learn biological statistics and experimental design by actually designing experiments and analyzing data, as well as through lecture, discussion, reading, writing, and problem solving. Lecture 3 hours, laboratory 3 hours each week. Graduate degree credit will not be given for both BIOL 4774 and BIOL 5774. Corequisite: Lab component. Prerequisite: STAT 2823 or equivalent, BIOL 3863. (Typically offered: Spring Even Years)

\section*{BIOL 5793. Introduction to Neurobiology. 3 Hours.}

Exploration of the neurological underpinnings of perception, action, and experience including: how sense receptors convert information in the world into electricity, how information flows through the nervous systems, how neural wiring makes vision possible, how the nervous system changes with experience, and how the system develops. Graduate degree credit will not be given for both BIOL 4793 and BIOL 5793. Prerequisite: BIOL 2533. (Typically offered: Spring)
BIOL 580V. Special Topics in Biological Sciences. 1-6 Hour.
Consideration of new areas of biological sciences not yet treated adequately in other courses. Prerequisite: 8 hours of biological sciences. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{BIOL 5823. Science Communication. 3 Hours.}

Covers the foundations of writing strategies, how to communicate with disciplinespecific versus broad audiences, elements of an effective presentation, and the manuscript and proposal review process. (Typically offered: Fall)
BIOL 5833. Animal Behavior. 3 Hours.
Organization, regulation, and phylogeny of animal behavior, emphasizing diversity across animal taxa. Lecture, laboratory, and field work. Corequisite: Lab component. (Typically offered: Spring)
BIOL 5843. Conservation Biology. 3 Hours.
The study of direct and indirect factors by which biodiversity is impacted by human activity. It is a synthetic field of study that incorporates principles of ecology, biogeography, population genetics, economics, sociology, anthropology, philosophy, geology, and geography. Prerequisite: BIOL 3863. (Typically offered: Irregular)

\section*{BIOL 5844. Community Ecology. 4 Hours.}

Survey of theoretical and applied aspects of community processes stressing structure, trophic dynamics, community interactions, and major community types. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Fall Odd Years)

\section*{BIOL 5863. Analysis of Animal Populations. 3 Hours.}

Basic principles of design and analysis for population studies of fish and wildlife species. Students will be instructed in the use of the latest software for estimating population parameters. Focus will be on both concepts and applications. Management applications of estimated parameters will be emphasized. Lecture 2 hours, laboratory 3 hours per week. Graduate degree credit will not be given for both BIOL 4863 and BIOL 5863. Corequisite: Lab component. Prerequisite: BIOL 3863. (Typically offered: Spring Even Years)
BIOL 5873. Microbial Molecular Genetics and Informatics. 3 Hours.
Fundamentals of microbial genomics and bioinformatics. Course covers microbial genetics, genetic structure, genome organization, proteome organization, approaches for the analysis of DNA, RNA, and proteins, cellular metabolic pathways, genetic regulation, small RNA molecules, functional genomics, metagenomics, and bioinformatics approaches for analysis of microbial genomes. Prerequisite: Graduate status. (Typically offered: Fall)

BIOL 5883. Mammalian Evolution and Osteology. 3 Hours.
Focuses on describing the evolutionary history of mammals, a group of vertebrates that include over 5,000 species in 29 orders, and will provide an overview of living species and their identifying features. Credit will not be given for both ANTH 4703 and ANTH 5703. Prerequisite: Instructor consent. (Typically offered: Fall Even Years)
This course is cross-listed with ANTH 5703.

\section*{BIOL 5914. Stream Ecology. 4 Hours.}

Current concepts and research in lotic ecosystem dynamics. Lecture, laboratory, field work and individual research projects required. Corequisite: Lab component. Prerequisite: 3 hours of ecology-related coursework. (Typically offered: Fall Even Years)

BIOL 5933. Global Biogeochemistry: Elemental Cycles and Environmental Change. 3 Hours.
This course explores the chemical, biological, and geological processes occurring within ecosystems. An understanding of these processes is used to investigate how they form the global biogeochemical cycles that provide energy and nutrients necessary for life. Class discussions focus on global change and the effects of more recent anthropogenic influences. Prerequisite: 3 hours of chemistry or biochemistry and ecology. (Typically offered: Spring Odd Years)
BIOL 596V. Culture and Environment: Field Studies. 1-6 Hour.
May be taken by students participating in overseas study programs or other domestic field study programs approved by the department. Graduate degree credit will not be given for both BIOL 496V and BIOL 596V. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{BIOL 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

BIOL 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Biomedical Engineering (BMEG)}

\section*{Courses}

\section*{BMEG 2614. Introduction to Biomedical Engineering. 4 Hours.}

An introductory course for undergraduate biomedical engineering students. It covers topics such as recombinant DNA technologies, cell and tissue engineering, stem cell and organ regeneration, the biomechanics, bioinstrumentation, engineering of immunity, and bio- and medical imaging, etc. The application of nano-biotechnology in developing clinical products such as tissue engineered products, drug delivery systems, etc. will be emphasized in the course. Prerequisite: (GNEG 1321H, or GNEG 1121, or GNEG 1103), and CHEM 1103, with a grade of \(C\) or better, MATH 2554 and PHYS 2054. (Typically offered: Fall and Summer)

\section*{BMEG 2813. Biomechanical Engineering. 3 Hours.}

This course introduces basic concepts and principles of biomechanics to biomedical and other engineering students. The course topics include mechanics and materials, viscoelastic properties, bone, cartilage, ligament, tendon, muscle, cardiovascular dynamics, clinical gait analysis, etc. After taking this course, students are expected to understand the application of engineering kinetics to describe motions of human body and mechanic properties of tissues. MATLAB will be used to write and solve biomechanical static and dynamic equations. Lecture 3 hours per week. Prerequisite: BMEG 2614, CHEM 1123, MATH 2564, and PHYS 2074. (Typically offered: Spring)

\section*{BMEG 2904. Biomedical Instrumentation. 4 Hours.}

This course is designed for biomedical engineering undergraduate students to learn both theoretical and practical concepts of bioinstrumentation and their applications in modern life science and medicine. Analytical experiments will be practiced in the laboratory along with the lecture section. This course covers basic topics in circuits such as charge current, voltage, resistance, power energy, linear network analysis, inductors, capacitors, operational amplifier, time-varying signals, active analog filters, bioinstrumentation design etc. The application of these principles and theories in bioinstrumentation design and development is particularly emphasized in this course. The lab section requires team work, planning, and data sharing. Corequisite: Lab component. Prerequisite: BMEG 2614, MATH 2564 and PHYS 2074. (Typically offered: Spring)

\section*{BMEG 3124. Biomedical Signals and Systems. 4 Hours.}

This course will introduce students to the basics of signals - continuous and digital signals, and signal processing tools, such as filters, Laplace and Fourier transforms. The 'systems' aspect of the course will focus on physiological systems and methods to model such systems. The course will also focus on the biomedical applications of these methods through lab components. Prerequisite: BMEG 2904. (Typically offered: Fall)

\section*{BMEG 3634. Biomaterials. 4 Hours.}

Introduction to the engineering properties of materials used in biomedical devices and applications. Topics include: atomic properties, structure-property-processing relationships, bulk engineering properties, surface and interfacial properties and applications of materials in biology and medicine. All topics will be reviewed in the context of specific biomedical devices and the engineering principles involved in their design. Corequisite: Lab component. Prerequisite: BMEG 2813, CHEM 1123, and BIOL 1543 and BIOL 1541L. (Typically offered: Fall)

\section*{BMEG 3653. Biomedical Modeling and Numerical Methods. 3 Hours.} Application of mathematical techniques to physiological systems. The emphasis will be on cellular physiology and cardiovascular system. Cellular physiology topics include models of cellular metabolism, membrane dynamics, membrane potential, excitability, wave propagation and cellular function regulation. Cardiovascular system topics include models of blood cells, oxygen transport, cardiac output, cardiac regulation, and circulation. Pre- or Corequisite: MATH 2584. Prerequisite: BMEG 2614, and (MATH 2574 or MATH 3083). (Typically offered: Spring)

BMEG 3653H. Honors Biomedical Modeling and Numerical Methods. 3 Hours. Application of mathematical techniques to physiological systems. The emphasis will be on cellular physiology and cardiovascular system. Cellular physiology topics include models of cellular metabolism, membrane dynamics, membrane potential, excitability, wave propagation and cellular function regulation. Cardiovascular system topics include models of blood cells, oxygen transport, cardiac output, cardiac regulation, and circulation. Pre- or Corequisite: MATH 2584. Prerequisite: BMEG 2614, and (MATH 2574 or MATH 3083). (Typically offered: Spring) This course is equivalent to BMEG 3653.

\section*{BMEG 3801. Clinical Observations and Needs Finding. 1 Hour.}

This course involves the introduction of clinical procedures and biomedical devices and technology to biomedical engineering students. Students will tour medical facilities, clinics and hospitals and will participate in medical seminars, workshops and medical rounds. The course prepares students to successfully select and complete a project in the senior capstone course. Prerequisite: The prerequisites for BMEG students are BMEG 2813 or BMEG 2904; prerequisites for DASC students: BMEG 2614 and DASC 2594. (Typically offered: Fall and Spring)

\section*{BMEG 3824. Biomolecular Engineering. 4 Hours.}

Biomolecular Engineering is to design and produce biomolecules, especially proteins, for uses ranging from pharmaceuticals, materials, sensors, transducers, to functional interfaces with conventional engineering materials. The course begins with an introduction to the tools and techniques of molecular biology that are used for protein engineering. Additional topics include recombinant DNA techniques, biochemical kinetics, cell growth reaction and kinetics, bioreactors, membrane processes, and bioproduct purification. There is an associated laboratory with exercises related to lecture topics. Corequisite: Lab component. Prerequisite: BMEG 3634, CHEM 1123, and BIOL 2533. (Typically offered: Spring)

BMEG 3824H. Honors Biomolecular Engineering. 4 Hours.
Biomolecular Engineering is to design and produce biomolecules, especially proteins, for uses ranging from pharmaceuticals, materials, sensors, transducers, to functional interfaces with conventional engineering materials. The course begins with an introduction to the tools and techniques of molecular biology that are used for protein engineering. Additional topics include recombinant DNA techniques, biochemical kinetics, cell growth reaction and kinetics, bioreactors, membrane processes, and bioproduct purification. There is an associated laboratory with exercises related to lecture topics. Corequisite: Lab component. Prerequisite: BMEG 3634, CHEM 1123, and BIOL 2533. (Typically offered: Spring) This course is equivalent to BMEG 3824.

\section*{BMEG 3913. Biofluid Mechanics. 3 Hours.}

Introduction to fundamental concepts and applications of fluid dynamics from a biological and physiological perspective. Topics include physical properties of fluids, fluid statics, manometers, streamlines and the Bernoulli relation, velocity and acceleration fields, viscous flow and the Navier-Stokes equations, flows in pipes and over submerged surfaces, properties of blood and other physiological fluids, transport models in the lungs, lymph, blood, and artificial organs, and computational fluid dynamics (CFD) simulations. Prerequisite: MATH 2584, PHYS 2074, and BMEG 2614. (Typically offered: Fall)

\section*{BMEG 4213. Tissue Mechanics. 3 Hours.}

The purpose of this course is to introduce students to non-linear biomechanics of soft tissues such as skin, bladder, blood vessels, and the brain. Topics covered: Tissue mechanics: continuum biomechanics, tensor analysis, kinematics of continua, balance laws. Governing physics of mechanics as applied to soft tissues. Various constitutive relations will be discussed: linear elastic, hyperelastic, viscoelastic, poroelastic, and inelastic materials with internal variables. Cannot receive credit for both BMEG 4213 and BMEG 5213. Prerequisite: BMEG 2813, BMEG major and Senior standing. (Typically offered: Irregular)

\section*{BMEG 4243. Advanced Biomaterials and Biocompatibility. 3 Hours.}

From Absorbable sutures to Zirconium alloy hip implants, biomaterials science influences nearly every aspect of medicine. This course focuses on the study of different classes of biomaterials and their interactions with human tissues. Topics include: biocompatibility; biofouling; hemocompatibility; wound healing response; foreign body response; design of orthopedic, dental and cardiovascular implants; opthalmological and dermatological materials; degradable polymers for drug delivery; nanobiomaterials; smart biomaterials and the regulation of devices and materials by the FDA. Pre- or Corequisite: BMEG 4623. Prerequisite: BMEG 3634. (Typically offered: Irregular)

\section*{BMEG 4253. Biologics: Next Generation Therapeutics and Their Purification. 3} Hours.
The course focuses on the production and purification of biologics including monoclonal antibodies, viral vectors, nucleic acids and other biotherapeutics. In particular, the course will focus on the fundamental thermodynamics principles as well as kinetic limitations involved in upstream harvesting and downstream purification. Applications of PCR, mass spectroscopy, electrophoresis, imaging and modeling tools during the production and purification of biologics will be discussed. (Typically offered: Irregular)

\section*{BMEG 4403. Biomedical Microscopy. 3 Hours.}

An advanced course covering light microscopy techniques, conjugate image planes, principles of contrast, fluorescence imaging, confocal and multi-photon microscopy, electron microscopy, atomic force microscopy, image reconstruction and digital image processing with supporting units in tissue culture and histology. Prerequisite: The prerequisites for BMEG students are BMEG 2904, PHYS 2074, BMEG major and Senior standing; prerequisites for DASC students: BMEG 2614, PHYS 2054 and DASC 2113. (Typically offered: Irregular)

\section*{BMEG 4413. Tissue Engineering. 3 Hours.}

This course introduces Tissue Engineering approaches at genetic and molecular, cellular, tissue, and organ levels. Topics include cell and tissue in vitro expansion, tissue organization, signaling molecules, stem cell and stem cell differentiation, organ regeneration, biomaterial and matrix for tissue engineering, bioreactor design for cell and tissue culture, dynamic and transportation in cell and tissue cultures, clinical implementation of tissue engineered products, and tissue-engineered devices. Prerequisite: BMEG 3824 and BIOL 2533. (Typically offered: Irregular)

\section*{BMEG 450VH. Honors Thesis. 1-4 Hour.}

Provides Biomedical Engineering students an opportunity to explore a topic in depth through an independent research or design project. Prerequisite: Honors standing. (Typically offered: Spring and Summer) May be repeated for degree credit.

\section*{BMEG 4513. Biomedical Optics and Imaging. 3 Hours.}

This course will provide students with a fundamental understanding of various biomedical imaging modalities. Topics will include: Basics of light-tissue interaction - absorption, fluorescence, elastic and inelastic scattering; Computational and analytical models of light propagation to quantify tissue optical properties; Optical imaging techniques spectroscopy, tomography, and laser speckle with potential clinical applications; and Clinical imaging modalities and recent advances \(X\) ray, Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET), Computed Tomography (CT), Ultrasound imaging, and Photoacoustic imaging. At the end of this course, students should have a good understanding of optical imaging, spectroscopy, and non-optical imaging modalities, specific anatomical sites that they are best suited for, and the trade-offs between imaging depth and resolution. Students may not receive credit for both BMEG 4513 and BMEG 5513. Prerequisite: The prerequisites for BMEG students are BMEG 2904 and senior standing; prerequisites for DASC students: BMEG 2614, PHYS 2054 and DASC 2113 and senior standing. (Typically offered: Irregular)
BMEG 4523. Biomedical Data and Image Analysis. 3 Hours.
This course focuses on an introduction to image processing and analysis for applications in biomedical research. After a review of basic MATLAB usage, students will learn fundamental tools for processing and analyzing data from a variety of subdisciplines within biomedical engineering. Topics include: filtering, thresholding, segmentation, morphological processing, and image registration. Through exercises involving 1D, 2D, and 3D data, students will develop problemsolving skills and a knowledge base in MATLAB required for customized quantitative data analysis. Students may not receive credit for both BMEG 4523 and BMEG 5523. Prerequisite: The prerequisites for BMEG students are BMEG 3124 and BMEG 3653; prerequisites for DASC students: BMEG 2614, PHYS 2054 and DASC 3203. (Typically offered: Irregular)

\section*{BMEG 4593. Biomedical Innovations for Global Impact. 3 Hours.}

This course focuses on specific problems triggered or exacerbated by selected global health care challenges. Acknowledging the interdependence of our world, where the well-being of one individual is intrinsically connected to the well-being of the entire ecosystem, the course connects participating students with a global and local network of students, faculty, community partners, and mentors, and invite them to develop solutions to some of these health care challenges. Pre- or corequisite: Junior Level Standing. (Typically offered: Fall)
This course is cross-listed with SEVI 4333.

BMEG 460V. Individual Study. 1-6 Hour.
Individual study and research of a topic mutually agreeable to the student and faculty member. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{BMEG 460VH. Honors Individual Study. 1-6 Hour.}

Individual study and research of a topic mutually agreeable to the student and faculty member. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to BMEG 460 V .

\section*{BMEG 4623. Biomedical Transport Phenomena. 3 Hours.}

An introduction to the modeling of complex biological systems using principles of transport phenomena and biochemical kinetics. This course will cover molecular transport due to velocity, concentration and thermal gradients. Topics include the conservation relations; rheology of Newtonian and non-Newtonian physiological fluids; regulation of blood flow; steady and transient diffusion in reacting systems; dimensional analysis; transport processes in disease pathology. Prerequisite: BMEG 3653, CHEG 2133 or MEEG 3503, CHEG 2313 or MEEG 2403, and MATH 2584. (Typically offered: Fall)

\section*{BMEG 4623H. Honors Biomedical Transport Phenomena. 3 Hours.}

An introduction to the modeling of complex biological systems using principles of transport phenomena and biochemical kinetics. This course will cover molecular transport due to velocity, concentration and thermal gradients. Topics include the conservation relations; rheology of Newtonian and non-Newtonian physiological fluids; regulation of blood flow; steady and transient diffusion in reacting systems; dimensional analysis; transport processes in disease pathology. Prerequisite: BMEG 3653, CHEG 2133 or MEEG 3503, CHEG 2313 or MEEG 2403, and MATH 2584. (Typically offered: Fall)
This course is equivalent to BMEG 4623.
BMEG 470V. Special Topics in Biomedical Engineering. 1-4 Hour.
Consideration of current biomedical engineering topics not covered in other courses. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{BMEG 4713. Cardiovascular Physiology and Devices. 3 Hours.}

Understanding etymology of disease while creating solutions and dedicated devices is the primary focus of biomedical engineering. This course describes an interdisciplinary approach of the clinical and engineering worlds to develop devices for treating cardiovascular disease. The first part of the course will be a thorough review of the relevant anatomic and physiological considerations important for developing devices. Understanding these considerations from an engineering perspective to inform device development will be the second part of the course. Students may not receive credit for both BMEG 4713 and BMEG 5713. Prerequisite: CHEG 2133 or MEEG 3503, and BIOL 2213. (Typically offered: Irregular)

\section*{BMEG 4813. Biomedical Engineering Design I. 3 Hours.}

This is part one of a two-semester course that introduces students to the basic concepts of design from a biomedical engineering perspective. Groups are organized into teams of 4-5 members. The students put together a development plan and complete an initial prototype. Students will design what is to be fabricated and tested as a medical device or software following design process and product design specification guidelines. Corequisite: Lab component. Pre- or Corequisite: BMEG 4623 and BMEG 2904. (Typically offered: Fall)

\section*{BMEG 4823. Biomedical Engineering Design II. 3 Hours.}

This is part two of a two-semester course that introduces students to the basic concepts of design from a biomedical engineering perspective. Groups are organized into teams of 4-5 members. The students put together a development plan and complete an initial prototype. Students will design what is to be fabricated and tested as a medical device or software following design process and product design specification guidelines. Corequisite: Lab component. Prerequisite: BMEG 4813. (Typically offered: Spring)

\section*{BMEG 4903. Entrepreneurial Bioengineering. 3 Hours.}

The course introduces entrepreneurship, business model canvas, and lean startup principles to the students with a focus on medical device customer discovery and technology commercialization. Degree credit will not be awarded for both BMEG 4903 and BMEG 5903. Prerequisite: The prerequisite for BMEG students is BMEG 2904; prerequisites for DASC students: BMEG 2614 and DASC 2594. (Typically offered: Irregular)

\section*{BMEG 4973. Regenerative Medicine. 3 Hours.}

This is an advanced course focusing on tissue engineering and regenerative medicine. Topics include stem cell tissue engineering, cell signaling, transport and kinetics, biomaterials and scaffolds, surface interactions, viral and nonviral-based gene delivery, tissue engineered organs, organ transplantation, nanomedicine, cell replacement therapy, and organ regenerative therapy. Technologies used to grow clinical relevant cells and tissues in lab will also be discussed in this course. Pre- or Corequisite: Senior standing. (Typically offered: Irregular)

\section*{BMEG 4983. Genome Engineering and Synthetic Biology. 3 Hours.}

Genome Engineering and Synthetic Biology examines contemporary topics in genome engineering and synthetic biology and will be taught using a "journal club" style lecture format. This course covers a broad range of topics in synthetic biology and genome engineering using recently published literature and publicly available data and software and includes an ethics discussion at course end. Prerequisite: BMEG 3653 or DASC 3213. (Typically offered: Fall and Spring)

BMEG 5103. Design and Analysis of Experiments in Biomedical Research. 3 Hours.

An advanced course covering sample size estimation with power calculations, protection of vertebrate animals and human subjects, factorial design, multivariate analysis of variance, parametric and non-parametrics data analysis, Kaplan-meier analysis, and post-test correction of multiple comparisons as related to biomedical data. Prerequisite: MATH 2584 and BMEG 3653 or equivalents. (Typically offered: Irregular)

\section*{BMEG 5213. Tissue Mechanics. 3 Hours.}

The purpose of this course is to introduce students to non-linear biomechanics of soft tissues such as skin, bladder, blood vessels, and the brain. Topics covered: Tissue mechanics: continuum biomechanics, tensor analysis, kinematics of continua, balance laws. Governing physics of mechanics as applied to soft tissues. Various constitutive relations will be discussed: linear elastic, hyperelastic, viscoelastic, poroelastic, and inelastic materials with internal variables. Cannot receive credit for both BMEG 4213 and BMEG 5213. Prerequisite: BMEG 2813 and BMEG 4623 or equivalents. (Typically offered: Irregular)

\section*{BMEG 5223. Genome Engineering and Synthetic Biology. 3 Hours.}

Genome Engineering and Synthetic Biology provides an overview of contemporary topics in genome engineering and synthetic biology. This course will introduce a range of topics in synthetic biology and genome engineering using recently published literature and publicly available data sets and software. In this rapidly evolving field, an ethics discussion will be held at the end of the course on potential topics including human embryo editing, genomic data privacy, patent claims, and GMOs. Students may not receive credit for both BMEG 4983 and BMEG 5223. Prerequisite: BMEG 3653 or DASC 3213. (Typically offered: Spring)

BMEG 5253. Biologics: Next Generation Therapeutics and Their Purification. 3 Hours.
The course focuses on the production and purification of biologics including monoclonal antibodies, viral vectors, nucleic acids and other biotherapeutics. In particular, the course will focus on the fundamental thermodynamics principles as well as kinetic limitations involved in upstream harvesting and downstream purification. Applications of PCR, mass spectroscopy, electrophoresis, imaging and modeling tools during the production and purification of biologics will be discussed. Students may not receive credit for both BMEG 4253 and BMEG 5253. (Typically offered: Irregular)

BMEG 5313. Advanced Biomaterials and Biocompatibility. 3 Hours.
From Absorbable sutures to Zirconium alloy hip implants, biomaterials science influences nearly every aspect of medicine. This course focuses on the study of different classes of biomaterials and their interactions with human tissues. Prerequisite: BMEG 3634 and BMEG 4623 or equivalents. (Typically offered: Irregular)

BMEG 5413. Tissue Engineering. 3 Hours.
This course introduces Tissue Engineering approaches at genetic and molecular, cellular, tissue, and organ levels. Topics include cell and tissue in-vitro expansion, tissue organization, signaling molecules, stem cell and stem cell differentiation, organ regeneration, biomaterial and matrix for tissue engineering, bioreactor design for cell and tissue culture, dynamic and transportation in cell and tissue cultures, clinical implementation of tissue engineered products, and tissue-engineered devices. Students may not earn credit for both BMEG 5413 and BMEG 4413. Prerequisite: BIOL 2533 and BMEG 3824. (Typically offered: Irregular)

\section*{BMEG 5423. Regenerative Medicine. 3 Hours.}

The course covers five broad areas: Biological and molecular basis for regenerative medicine, tissue development, regenerative medicine and innovative technologies, clinical applications of regenerative medicine, and regulation and ethics. Prerequisite: BIOL 2533 and BMEG 3824 or equivalents. (Typically offered: Irregular)

\section*{BMEG 5513. Biomedical Optics and Imaging. 3 Hours.}

This course will provide students with a fundamental understanding of various biomedical imaging modalities. Topics will include: Basics of light-tissue interaction - absorption, fluorescence, elastic and inelastic scattering; Computational and analytical models of light propagation to quantify tissue optical properties; Optical imaging techniques - spectroscopy, tomography, and laser speckle with potential clinical applications; and Clinical imaging modalities and recent advances - Xray, Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET), Computed Tomography (CT), Ultrasound imaging, and Photoacoustic imaging. At the end of this course, students should have a good understanding of optical imaging, spectroscopy, and non-optical imaging modalities, specific anatomical sites that they are best suited for, and the trade-offs between imaging depth and resolution. Students may not receive credit for both BMEG 4513 and BMEG 5513. (Typically offered: Irregular)

BMEG 5523. Biomedical Data and Image Analysis. 3 Hours.
This course focuses on an introduction to image processing and analysis for applications in biomedical research. After a review of basic MATLAB usage, students will learn fundamental tools for processing and analyzing data from a variety of subdisciplines within biomedical engineering. Topics include: filtering, thresholding, segmentation, morphological processing, and image registration. Through exercises involving 1D, 2D, and 3D data, students will develop problemsolving skills and a knowledge base in MATLAB required for customized quantitative data analysis. Students may not receive credit for both BMEG 4523 and BMEG 5523. Prerequisite: Graduate standing. (Typically offered: Irregular)

BMEG 560V. Advanced Individual Study. 1-6 Hour.
Individual study and research of a topic mutually agreeable to the student and faculty member. Prerequisite: Graduate standing. (Typically offered: Irregular)

BMEG 570V. Advanced Special Topics. 1-6 Hour.
Consideration of current biomedical engineering topics not covered in other courses. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 15 hours of degree credit

BMEG 5713. Cardiovascular Physiology and Devices. 3 Hours.
Understanding etymology of disease while creating solutions and dedicated devices is the primary focus of biomedical engineering. This course describes an interdisciplinary approach of the clinical and engineering worlds to develop devices for treating cardiovascular disease. The first part of the course will be a thorough review of the relevant anatomic and physiological considerations important for developing devices. Understanding these considerations from an engineering perspective to inform device development will be the second part of the course. Students may not receive credit for both BMEG 4713 and BMEG 5713. Prerequisite: Graduate standing. (Typically offered: Irregular)

BMEG 5800. Graduate Seminar I. 0 Hours.
A weekly seminar series comprised of presentations by invited speakers and graduate students as well as didactic instruction in relevant topics including research ethics, authorship, biosafety and the use of animals in biomedical research.
Prerequisite: BMEG 5801. (Typically offered: Fall) May be repeated for up to 0 hours of degree credit.

BMEG 5801. Graduate Seminar I. 1 Hour.
A weekly seminar series comprised of presentations by invited speakers and graduate students as well as didactic instruction in relevant topics including research ethics, authorship, biosafety and the use of animals in biomedical research. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.
BMEG 5810. Graduate Seminar II. 0 Hours.
A weekly seminar series comprised of presentations by invited speakers and graduate students as well as didactic instruction in relevant topics including professional development, career options, effective communication, technology transfer, clinical translation and intellectual property. Prerequisite: BMEG 5811. (Typically offered: Spring) May be repeated for up to 0 hours of degree credit.

BMEG 5811. Graduate Seminar II. 1 Hour.
A weekly seminar series comprised of presentations by invited speakers and graduate students as well as didactic instruction in relevant topics including professional development, career options, effective communication, technology transfer, clinical translation and intellectual property. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

BMEG 5903. Entrepreneurial Bioengineering. 3 Hours.
The course introduces entrepreneurship, business model canvas, and lean startup principles to the students with a focus on medical device customer discovery and technology commercialization. Graduate degree credit will not be awarded for BMEG 4903. Degree credit will not be awarded for both BMEG 4903 and BMEG 5903. (Typically offered: Irregular)
BMEG 5953. Fundamentals of Fracture and Fatigue in Structures. 3 Hours. The course will cover the concepts of linear-elastic, elastic-plastic and timedependent Fracture Mechanics as applied to fracture in a variety of materials, structures, and operating conditions. The examples will include fracture in large components such as aircraft, bridges and pressure vessels and also in bones and in soft materials and human tissue. Prerequisite: Graduate standing in Civil, Mechanical or Biomedical Engineering or consent of the instructor. (Typically offered: Fall and Spring)
This course is cross-listed with MEEG 5953, CVEG 5953.
BMEG 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.
BMEG 700V. Doctoral Dissertation. 1-6 Hour.
Doctoral Dissertation. Prerequisite: Graduate standing. (Typically offered:
Irregular) May be repeated for degree credit.

\section*{Brewing Science (BREW)}

\section*{Courses}

\section*{BREW 4313. Internship in Brewing Science. 3 Hours.}

The Internship in Brewing Science is a supervised practical work experience with a brewing or brewing-related industry, program or governmental agency to gain professional experience and insight into career opportunities. Prerequisite: BREWCP students only. (Typically offered: Fall, Spring and Summer)

\section*{BREW 4573. Production Design and Analysis of Beer. 3 Hours.}

Production design, compositional analysis, and sensory evaluation of barley, malt, hops, water, yeast and beer. Corequisite: Lab component. Prerequisite: FDSC 2723, BIOL 2013, BIOL 2011L \& ((CHEM 2613 \& CHEM 2611L) or (CHEM 3603, CHEM 3601L, CHEM 3613, \& CHEM 3613L)). (Typically offered: Spring Odd Years)

BREW 5573. Production design and analysis of Beer. 3 Hours.
Production design, compositional analysis, and sensory evaluation of barley, malt, hops, water, yeast and beer. Corequisite: Lab component. Prerequisite: FDSC 2723, BIOL 2013, BIOL 2011L and ((CHEM 2613 \& CHEM 2611L) or (CHEM 3603, CHEM 3601L, CHEM 3613 \& CHEM 3613L)). (Typically offered: Spring Odd Years)

\section*{Business Administration (BADM)}

\section*{Courses}

BADM 5231. Intro to Global Business. 1 Hour.
Integrated overview of the global business environment and the organizational challenges of a multinational firm. To enhance understanding of the business and cultural environment of prominent emerging markets, the course includes a 2-3 week overseas immersion project to fulfill a predefined goal. Project is integrated with global content upon return. (Typically offered: Summer)

\section*{BADM 535V. MBA Internship. 1-3 Hour.}

This course allows a student to experience an internship within a business and benefit from the applied experience. The internship may be designed to offer a wide range of business experiences. The internship must be supervised by a faculty member as well as a member of the firm. MBA Director approval required. (Typically offered: Summer) May be repeated for up to 3 hours of degree credit.

\section*{BADM 537V. Special Topics. 1-3 Hour.}

This course provides students with a deep dive into a relevant and timely topic in business administration. The topic will change periodically to stay current with business trends. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
BADM 5511. Professional Development -- Special Topics In Business. 1 Hour. A concentrated emphasis on one business topic. Corequisite: MGMT 5613, ACCT 5263 and ECON 5253. (Typically offered: Fall and Spring) May be repeated for up to 5 hours of degree credit.

\section*{BADM 5533. Global Business. 3 Hours.}

Provides MBA students with the opportunity to explore a business problem in depth under the guidance of a graduate faculty member. (Typically offered: Summer)
BADM 5602. Introduction to Strategy. 2 Hours.
This course provides an introduction to business strategy, the driving force behind virtually all decisions of the firm. The goal of strategy is to make decisions that ensure the long-term survival and success of the firm. (Typically offered: Fall)

\section*{Business (BUSI)}

\section*{Courses}

BUSI 1011. Writing with Integrity for the Academic World. 1 Hour.
This course is designed to train students in responsible academic writing with a particular emphasis on academic honesty in the writing process. This course will emphasize the skills necessary to distinguish what ideas are your own, and which have been gleaned from another source. We will examine the ideological foundations of intellectual property, and the ethical implications of recognizing intellectual property as belonging to its creator or creators. (Typically offered: Fall and Spring)

\section*{BUSI 1033. Data Analysis and Interpretation. 3 Hours.}

This is an introductory level course covering topics involving estimation of population characteristics, research design and hypothesis testing, as well as measuring and predicting relationships. The course should enable the students to develop an understanding regarding the application and interpretation of basic data analysis techniques with an emphasis on statistical applications. Prerequisite: (MATH 2053 or MATH 2554, each with a grade of C or better) and ISYS 1123 with a grade of \(C\) or better. (Typically offered: Fall, Spring and Summer)

BUSI 1033H. Honors Data Analysis and Interpretation. 3 Hours.
This is an introductory level course covering topics involving estimation of population characteristics, research design and hypothesis testing, as well as measuring and predicting relationships. The course should enable the students to develop an understanding regarding the application and interpretation of basic data analysis techniques with an emphasis on statistical applications. Prerequisite: (MATH 2053 or MATH 2554, each with a grade of C or better) and ISYS 1123 with a grade of \(C\) or better. (Typically offered: Irregular)
This course is equivalent to BUSI 1033.

\section*{BUSI 1111. Freshman Business Connection. 1 Hour.}

Development of personal development skills, including time management; stress management and academic planning, necessary for success; introduction to business career options and opportunities. (Typically offered: Fall)

\section*{BUSI 1111H. Honors Freshman Business Connection. 1 Hour.}

Development of personal development skills, including time management; stress management and academic planning, necessary for success; introduction to business career options and opportunities. Prerequisite: Honors standing. (Typically offered: Irregular)
This course is equivalent to BUSI 1111.
BUSI 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{BUSI 2063. Workplace Competencies. 3 Hours.}

This online course identifies the skills necessary to be successful as a professional in the workforce. Employers expect new college graduates to possess certain competencies. This course identifies and creates opportunities for the development of the skills most often valued in the workplace, including working in a team structure; goal setting; decision making and problem solving; planning, organizing and prioritizing work; power, persuasion and oral communication; obtaining and processing relevant data; technical skills evaluation; written communications skills; workplace image and attitude; corporate values and workplace ethics; and influencing others at a new job. (Typically offered: Irregular)
BUSI 210V. Special Topics in Business. 1-6 Hour.
Special topics of an interdisciplinary nature. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{BUSI 210VH. Honors Special Topics in Business. 1-6 Hour.}

Special topics of an interdisciplinary nature. Prerequisite: Honors standing. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to BUSI 210 V .

BUSI 230V. Walton College Study Abroad. 3-6 Hour.
Open to undergraduate students studying abroad in officially sanctioned programs in Walton College. Topics vary by location of study abroad opportunities. Prerequisite: Departmental consent. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{BUSI 230VH. Honors Walton College Study Abroad. 3-6 Hour.}

Open to undergraduate students studying abroad in officially sanctioned programs in Walton College. Topics vary by location of study abroad opportunities. Prerequisite: Honors standing and departmental consent. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
This course is equivalent to BUSI 230 V .

\section*{BUSI 2600. Undergraduate Research Assistant. 0 Hours.}

Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{BUSI 3003H. Honors College Colloquium. 3 Hours.}

An inter-disciplinary course exploring events, concepts, and/or new developments in the field of business administration. Prerequisite: Junior or senior standing. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{BUSI 3023. Sustainability in Business. 3 Hours.}

The course focuses on theoretical and practical bases for pursuing sustainability in business and society. Students learn four definitions of sustainability, measured on four axes expressed by: 1987 UN Brundtland Report (intergenerational equity), Triple-play (people, planet, profits), resource sustainability, and economic justice (fair global system of rules, fairly enforced). Prerequisite: Junior standing. (Typically offered: Irregular)

BUSI 3033. The African American Experience in Business. 3 Hours.
This course is designed to provide the student with a comprehensive and critical analysis of the history of the African American experience as a member of the business sector of the United States economics. The course will review information that includes and demonstrates activities prior to slavery, during, and after slavery. (Typically offered: Irregular)

\section*{BUSI 3043. From Books to Boardrooms. 3 Hours.}

Examines career choices and skills necessary to be successful as a professional in the workforce. Self-assessment and career exploration strategies are examined using career development theories. Incorporates career path management principles to include exploring occupations, networking, enhancing business communications, job searching, workplace success skills, and college to work transition. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)

\section*{BUSI 3053. Diversity in the Workforce. 3 Hours.}

This course is designed to engage students in discussions and to increase their awareness and knowledge about barriers and contributions of underrepresented groups. This course will cover race, class, gender, sexuality, ethnicity, nationality, and physical differences that impacts underrepresented groups and how this information can influence that work environment. The course involves weekly discussion, critical evaluation, and reflection of the subjects that are covered in the assignments. Prerequisite: Junior Standing. (Typically offered: Spring Odd Years)

\section*{BUSI 310V. Internship. 1-3 Hour.}

Internship allows students to earn one to three hours of academic credit per semester for work related to their major and/or minor. Accumulated credit may not exceed six hours. Eligibility requires: 1) junior standing in the college, 2) completion of the pre-business core and 3 ) the prescribed GPA. See catalog for details. Prerequisite: Junior standing and completion of pre-business core. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

BUSI 320V. International Internship. 1-3 Hour.
The International Internship allows students to work overseas with a pre-approved employer. Students must have a faculty supervisor who will work with their employer to monitor their work experience and progress. Students are responsible for finding a faculty supervisor, and the Global Engagement Office will work with both the student and faculty member to facilitate the employer relationship and expectations. Students will receive one to three hours of credit per semester based on hours worked and length of time abroad. Students may receive up to three hours of credit. Prerequisite: Junior Standing, 3.0 cumulative GPA, and Department Consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{BUSI 330V. Walton College Study Abroad. 3-6 Hour.}

Open to undergraduate students studying abroad in officially sanctioned programs in the Walton College. Topics vary by location of study abroad opportunities. To be eligible for credit, students must have junior standing and Walton College majors must have completed all pre-business requirements prior to studying abroad. Prerequisite: Departmental consent, completion of 30 hours, ENGL 1013, (MATH 2053 or MATH 2554), ECON 2013, ECON 2023, ISYS 1123, BUSI 1111 and ACCT 2013. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

BUSI 330VH. Honors Walton College Study Abroad. 3-6 Hour.
Open to undergraduate students studying abroad in officially sanctioned programs in the Walton College. Topics vary by location of study abroad opportunities. To be eligible for credit, students must have junior standing and Walton College majors must have completed all pre-business requirements prior to studying abroad. Prerequisite: Honors standing, departmental consent, completion of 30 hours, ENGL 1013, (MATH 2053 or MATH 2554), ECON 2013, ECON 2023, ISYS 1123, BUSI 1111 and ACCT 2013. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to BUSI 330 V .

\section*{BUSI 3600. Undergraduate Research Assistant. 0 Hours.}

Undergraduate research. (Typically offered: Fall, Spring and Summer)
BUSI 410V. Special Topics in Business. 1-6 Hour.
Special business topics of an interdisciplinary nature. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
BUSI 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
BUSI 499VH. Honors Thesis. 1-3 Hour.
Provides Honors Students with an opportunity to explore a business topic in depth through an independent research project. Prerequisite: Good standing in the Walton College Honors Program. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

BUSI 510V. Special Topics in Business. 1-3 Hour.
Special business topics of an interdisciplinary nature. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

BUSI 6111. Seminar in Business Administration Teaching I. 1 Hour. This course in college level teaching is designed for graduate students and new college teachers with specific emphasis on the Business Administration learning and classroom management. The purpose of this course is to introduce graduate students to principles of teaching and learning and to prepare these future teachers to lifelong learners in the classroom as teachers. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{Business Law (BLAW) \\ \section*{Courses}}

BLAW 2013. The Legal Environment of Business (ACTS Equivalency = BLAW 2003). 3 Hours.

Introduction to the legal and ethical environment in which business operates. Topics covered in this survey course include: introduction to the legal system and the judicial resolution of disputes, constitutional law, administrative law, criminal law, torts, contracts, property law, advertising and marketing law, bankruptcy and credit transactions, business organizations, antitrust, employment law and ethics. (Typically offered: Fall, Spring and Summer)

\section*{BLAW 2013H. Honors The Legal Environment of Business. 3 Hours.}

Introduction to the legal and ethical environment in which business operates. Topics covered in this survey course include: introduction to the legal system and the judicial resolution of disputes, constitutional law, administrative law, criminal law, torts, contracts, property law, advertising and marketing law, bankruptcy and credit transactions, business organizations, antitrust, employment law and ethics. (Typically offered: Fall, Spring and Summer)
This course is equivalent to BLAW 2013.

\section*{BLAW 3033. Commercial Law. 3 Hours.}

A study of the laws applicable to commercial transactions. Topics covered include the common law of contracts, Articles Two (Sales) and Three (Commercial Paper) of the Uniform Commercial Code, secured transactions, suretyship, and bankruptcy. (Typically offered: Spring)

\section*{BLAW 5003. Commercial Transactions. 3 Hours.}

A study of laws applicable to business. Topics covered include the law of Contracts and UCC Sales, Payment Systems (checking accounts and E-payments), Bankruptcy, Intellectual Property, Principal-Agency Relationships, Business Entities, Data Security, Federal Securities Law, and Accountant's Legal Liability. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{Career and Technical Education (CATE)}

\section*{Courses}

CATE 3003. Teaching Housing and Interior Design to Secondary Students. 3 Hours.
This course prepares students to teach housing and interior design concepts to students in secondary school settings. Topics to be covered include housing needs and decisions, architectural design and construction, furnishings, safety and security, and careers related to the housing industry. Problem-based and project-based learning will provide the foundation for content delivery in this course. (Typically offered: Spring)

\section*{CATE 3103. Introduction to Professionalism. 3 Hours.}

Studying and developing educational concepts in career and technical education with accepted principles of professionalism in secondary education settings.
Prerequisite: Career and Technical Education (CATE) students only. (Typically offered: Fall)
CATE 3103H. Honors Introduction to Professionalism. 3 Hours.
Studying and developing professional concepts in vocational education with accepted principles of professionalism applied to career and technical education settings. (Typically offered: Fall)
This course is equivalent to CATE 3103.
CATE 4013. Teaching Strategies. 3 Hours.
Methods and techniques in the preparation and delivery of teaching. Prerequisite:
CATE 3103 and admission to CATE-BS major. (Typically offered: Fall)

CATE 4023. Classroom Management. 3 Hours.
Theory and techniques in classroom management, including professional ethics and school policies related to students, faculty and programs. Prerequisite: CATE 3103 and admission to CATEBS major. (Typically offered: Fall)

CATE 4033. Assessment / Program Evaluation. 3 Hours.
An introduction to constructing, evaluating and interpreting tests; descriptive and inferential statistics; state competency testing; and guidelines for state program valuations. Prerequisite: CATE 3103 and admission to the CATEBS major. (Typically offered: Fall)

CATE 4052. Seminar Teaching Internship. 2 Hours.
Site-based field experiences are integrated with the course content to provide continuity between theory and practice. Classroom management, ethics and diversity are emphasized. Corequisite: CATE 406X. Prerequisite: Admission to CATEBS major. (Typically offered: Spring)

CATE 406X. Teaching Internship. 12 Hours.
A minimum of 15 weeks will be spent in an off-campus school, at which time the student will have an opportunity under supervision to observe, to teach and to participate in other activities involving the school and the community. Successful completion of a criminal background check required before student can begin internship. Prerequisite: Senior status, CATE 3103, CATE 4013, CATE 4023, CATE 4033, (CIED 3023 or CIED 4023), CIED 3033 and admission to CATEBS major. (Typically offered: Spring)

CATE 4073. Introduction to Teaching Programming in the Secondary Schools. 3 Hours.
This course provides an introduction to the foundations of teaching methods for computer programming in the secondary schools. Methods of computer programming instruction will include teaching strategies in coding, developing computational thinking, problem-solving skills, and applying key programming concepts. This is an introductory level course. No prerequisites are required. (Typically offered: Irregular)
CATE 4443. Teaching Career Development in Public Schools. 3 Hours. This course provides a study of curricula, methods, and techniques involved in teaching career development as related to the 16 occupational clusters. Successful completion of this course is required for licensed teachers to earn their 418 Career Development endorsement. (Typically offered: Summer)

\section*{CATE 4803. Word Processing and Multimedia. 3 Hours.}

This course is designed to provide an overview of computer technology for prospective teachers in career and technical education. The main emphasis will be placed on the hands-on learning of word processing and multimedia applications that are widely used in career and technical education programs and emerging trends and issues in computer technology. (Typically offered: Fall, Spring and Summer)

\section*{CATE 5003. Introduction to Professionalism. 3 Hours.}

This course examines the principles and concepts of professionalism in the teaching profession, with an emphasis on developing professional concepts in the profession. Added emphasis is on career and technical education organizations. Prerequisite: Admission to the CATE teacher education program. (Typically offered: Fall)

CATE 5013. Teaching Strategies. 3 Hours.
This course is designed to offer a variety of ideas and experiences concerning methods of teaching, planning and presenting instruction. (Typically offered: Fall)

CATE 5016. Cohort Teaching Internship. 6 Hours.
A minimum of 12 weeks will be spent in an off-campus school, at which time the intern will have an opportunity under supervision to observe, to teach, and to participate in other activities involving the school and the community. Prerequisite: Admission to the College of Education and Health Professions Teacher Education and CATE Master's program. (Typically offered: Spring)

CATE 5023. Classroom Management. 3 Hours.
Theory and techniques in classroom management, including professional ethics and school policies related to students, faculty and programs. Graduate degree credit will not be given for both CATE 4023 and CATE 5023. Prerequisite: CATE 3103. (Typically offered: Fall)

\section*{CATE 5033. Assessment/Program Evaluation. 3 Hours.}

An introduction to constructing, evaluating, and interpreting tests; descriptive and inferential statistics; state competency testing; and guidelines for state program evaluations. Prerequisite: Graduate standing. (Typically offered: Fall)
CATE 5073. Introduction to Teaching Programming in the Secondary Schools. 3 Hours.
This course provides an introduction to the foundations of teaching methods for computer programming in the secondary schools. Methods of computer programming instruction will include teaching strategies in coding, developing computational thinking, problem-solving skills, and applying key programming concepts. This is an introductory level course. No prerequisites are required. Graduate degree credit will not be given for both CATE 4073 and CATE 5073. Corequisite: Lab component. (Typically offered: Irregular)
CATE 5443. Teaching Career Development in Public Schools. 3 Hours. This course provides a study of curricula, methods, and techniques involved in teaching career development as related to the 16 occupational clusters. Successful completion of this course is required for licensed teachers to earn their 418 Career Development endorsement. (Typically offered: Summer)

\section*{CATE 5803. Teaching Apparel Production to Secondary Students. 3 Hours.}

This course prepares students to teach apparel production concepts to students in secondary school settings. Topics to be covered include clothing selection, textiles, clothing care and laundry, clothing construction, and careers and technology. Problem- and project-based learning will provide the foundation for content delivery in this course. The focus on this course is on preparing preservice teachers in secondary schools to teach apparel production utilizing a variety of teaching methods. Corequisite: Lab component. (Typically offered: Spring)

\section*{Cell and Molecular Biology (CEMB)}

\section*{Courses}

CEMB 590V. Special Topics in Cell and Molecular Biology. 1-6 Hour.
Consideration of new areas in Cell and Molecular Biology not yet treated adequately in textbooks or in other courses. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

CEMB 5911. Seminar in Cell and Molecular Biology. 1 Hour.
Discussion of current topics in Cell and Molecular Biology. All graduate students in the Cell and Molecular Biology degree program must enroll every fall and spring semester in this course or an approved alternate seminar course. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{CEMB 600V. Master's Thesis. 1-6 Hour.}

Master's thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
CEMB 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Chemical Engineering (CHEG)}

\section*{Courses}

CHEG 2113. Introduction to Chemical Engineering I. 3 Hours.
Introduction to the field of chemical engineering. Industries, careers, and the curriculum are discussed. Basic chemical engineering terms, concepts, and calculations are presented. Mass balance calculations are performed and the application of computers to chemical engineering problems is introduced. Pre- or Corequisite: CHEM 1123 or CHEM 1223. (Typically offered: Fall and Spring)

\section*{CHEG 2133. Fluid Mechanics. 3 Hours.}

Analysis and design of fluids handling equipment and systems. Application of the principles of fluid statics, fluid dynamics, compressible flow, etc. Prerequisite: MATH 2584 or MATH 2584C. Pre- or Corequisite: MATH 2574 or MATH 2574C and (CHEG 2113 or BENG 2632 or BMEG 2614). (Typically offered: Fall, Spring and Summer)

\section*{CHEG 2133H. Honors Fluid Mechanics. 3 Hours.}

Analysis and design of fluids handling equipment and systems. Application of the principles of fluid statics, fluid dynamics, compressible flow, etc. Prerequisite: MATH 2584 or MATH 2584C. Pre- or Corequisite: MATH 2574 or MATH 2574C and (CHEG 2113 or BENG 2632 or BMEG 2614). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CHEG 2133.
CHEG 2313. Thermodynamics of Single-Component Systems. 3 Hours. A detailed study of the thermodynamic "state principles," energy and entropy balances, and their application to the solution of problems involving singlecomponent physical systems and processes. Prerequisite: MATH 2584. Pre- or Corequisite: CHEG 2113 or BENG 2632 or BMEG 2614. (Typically offered: Fall, Spring and Summer)

CHEG 2313H. Honors Thermodynamics of Single-Component Systems. 3 Hours.
A detailed study of the thermodynamic "state principles," energy and entropy balances, and their application to the solution of problems involving singlecomponent physical systems and processes. Prerequisite: MATH 2584. Pre- or Corequisite: CHEG 2113 or BENG 2632 or BMEG 2614. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CHEG 2313.
CHEG 3144. Heat and Mass Transfer. 4 Hours.
Applications of the principles of conduction, convection and radiation to the analysis and design of chemical processing heat transfer equipment and systems.
Fundamentals of chemical diffusional and convection processes. Pre- or Corequisite: CHEG 3323. Prerequisite: CHEG 2133 with a C or above, and MATH 2584. (Typically offered: Fall and Spring)
CHEG 3144H. Honors Heat and Mass Transfer. 4 Hours.
Applications of the principles of conduction, convection and radiation to the analysis and design of chemical processing heat transfer equipment and systems. Fundamentals of chemical diffusional and convection processes. Pre- or Corequisite: CHEG 3323. Prerequisite: CHEG 2133 with a C or above, and MATH 2584. (Typically offered: Fall and Spring)
This course is equivalent to CHEG 3144.

\section*{CHEG 3233L. Chemical Engineering Laboratory I. 3 Hours.}

Experimental measurements of various physical properties and comparison with published values and theoretical predictions. Experimental investigation of fluid flow and thermodynamics. Interpretation of results using graphical, numerical and statistical tools, and presentation of results in written technical reports and oral briefings. Identification and quantification of sources of experimental error. Identification of relevant experimental parameters to achieve an objective. Pre- or Corequisite: CHEG 3144. Corequisite: Drill component. Prerequisite: CHEG 2133 and CHEG 2313, both with a C or above. (Typically offered: Fall and Spring)

CHEG 3253. Chemical Engineering Computer Methods. 3 Hours.
Application of computer methods to chemical engineering problems including a review of structured programming principles. Corequisite: Drill component. Pre- or Corequisite: CHEG 3144 and CHEG 3323. Prerequisite: MATH 2584. (Typically offered: Fall and Spring)

CHEG 3323. Thermodynamics of Multi-Component Systems. 3 Hours.
The use of the state principle and energy and entropy balance developed in CHEG 2313 is extended to allow processes. Physical and chemical equilibrium processes are considered in detail. Prerequisite: CHEG 2313 with a C or above, and MATH 2574. (Typically offered: Fall and Spring)
CHEG 3323H. Honors Thermodynamics of Multi-Component Systems. 3 Hours.
The use of the state principle and energy and entropy balance developed in CHEG 2313 is extended to allow processes. Physical and chemical equilibrium processes are considered in detail. Prerequisite: Honors standing, CHEG 2313 with a C or above, and MATH 2574. (Typically offered: Fall and Spring) This course is equivalent to CHEG 3323.
CHEG 3333. Chemical Engineering Reactor Design. 3 Hours.
Principles of kinetics of homogeneous and heterogeneous reactions, catalysis, and reactor design with applications, drawn from industrial processes. Pre- or Corequisite: CHEG 3253. Prerequisite: CHEG 3323, with a C or above. (Typically offered: Fall and Spring)

\section*{CHEG 3333H. Honors Chemical Engineering Reactor Design. 3 Hours.}

Principles of kinetics of homogeneous and heterogeneous reactions, catalysis, and reactor design with applications, drawn from industrial processes. Pre- or Corequisite: CHEG 3253. Prerequisite: Honors standing, and CHEG 3323 with a C or above. (Typically offered: Fall and Spring)
This course is equivalent to CHEG 3333.

\section*{CHEG 3713. Chemical Engineering Materials Technology. 3 Hours.}

Selection of metals, polymers and ceramics for service in process conditions (including corrosion). In addition to static strains on materials, specialized materials such as semiconductors,, composites, and nano-materials are studied. The relationship between molecular structure and macroscopic properties is emphasized including processing and manufacture. Prerequisite: CHEG 3323 with a C or above, CHEM 3603, and PHYS 2054. (Typically offered: Spring)

\section*{CHEG 4163. Separation Processes. 3 Hours.}

Applications of chemical engineering design to stagewise and continuous separations in systems approaching equilibrium. Prerequisite: CHEG 3144 with a C or above. (Typically offered: Fall and Spring)

\section*{CHEG 4163H. Honors Separation Processes. 3 Hours.}

Applications of chemical engineering design to stagewise and continuous separations in systems approaching equilibrium. Prerequisite: Honors standing and CHEG 3144 with a C or above. (Typically offered: Fall and Spring) This course is equivalent to CHEG 4163.

\section*{CHEG 4332L. Chemical Engineering Laboratory II. 2 Hours.}

Experimental investigations of mass transfer and kinetics/reactor design. Special attention to attaining a high order of accuracy and to presenting results in complete written reports, with emphasis on quality rather than quantity work performed. Pre- or Corequisite: CHEG 3333 and CHEG 4163. Corequisite: Drill component. Prerequisite: CHEG 3233L with a C or above. (Typically offered: Fall and Spring)

\section*{CHEG 4413. Chemical Engineering Design I. 3 Hours.}

Principles of cost estimation, profitability, economic analysis, and economic balances as practiced in the chemical process industries. Special emphasis on the solution of problems involving the combination of engineering principles and economics. Corequisite: Drill component. Pre- or Corequisite: CHEG 4163. Prerequisite: CHEG 3144 with a C or above, CHEG 3333 with a C or above, and (ECON 2013 or ECON 2143). (Typically offered: Fall and Spring)

\section*{CHEG 4413H. Honors Chemical Engineering Design I. 3 Hours.}

Principles of cost estimation, profitability, economic analysis, and economic balances as practiced in the chemical process industries. Special emphasis on the solution of problems involving the combination of engineering principles and economics. Corequisite: Drill component. Pre- or Corequisite: CHEG 4163. Prerequisite: Honors standing, CHEG 3144 with a C or above, CHEG 3333 with a C or above, and (ECON 2013 or ECON 2143). (Typically offered: Fall and Spring)
This course is equivalent to CHEG 4413.

\section*{CHEG 4423. Automatic Process Control. 3 Hours.}

Application of mathematical modeling methods to the description of transient phenomena of interest to process engineers. Modes of control and principles of feedback control are introduced with applications to process engineering problems. Pre- or Corequisite: CHEG 4163. Prerequisite: CHEG 3253 with a C or above. (Typically offered: Spring)

CHEG 4423H. Honors Automatic Process Control. 3 Hours.
Application of mathematical modeling methods to the description of transient phenomena of interest to process engineers. Modes of control and principles of feedback control are introduced with applications to process engineering problems. Pre- or Corequisite: CHEG 4163. Prerequisite: Honors standing, and CHEG 3253 with a C or above. (Typically offered: Spring)
This course is equivalent to CHEG 4423.
CHEG 4443. Chemical Engineering Design II. 3 Hours.
Responsibility for decision making is placed on the students in the solution of a comprehensive, open ended problem based on an industrial process. Both formal oral and formal written presentation of results are required. Students are selected for participation in some sections of the course based on academic performance, honors standing and instructor recommendations. Corequisite: Drill component. Prerequisite: CHEG 4413 with a C or above. (Typically offered: Fall and Spring)

\section*{CHEG 4443H. Honors Chemical Engineering Design II. 3 Hours.}

Responsibility for decision making is placed on the students in the solution of a comprehensive, open ended problem based on an industrial process. Both formal oral and formal written presentation of results are required. Students are selected for participation in some sections of the course based on academic performance, honors standing and instructor recommendations. Corequisite: Drill component. Prerequisite: CHEG 4413 with a C or above. (Typically offered: Fall and Spring) This course is equivalent to CHEG 4443.

\section*{CHEG 4813. Chemical Process Safety. 3 Hours.}

Application of chemical engineering principles to the study of safety, health, and loss prevention. Fires and explosions, hygiene, toxicology, hazard identification, and risk assessment in the chemical process industries. Corequisite: Drill component. Prerequisite: CHEG 3144 and CHEG 3323, both with a C or above. (Typically offered: Fall)

\section*{CHEG 4813H. Honors Chemical Process Safety. 3 Hours.}

Application of chemical engineering principles to the study of safety, health, and loss prevention. Fires and explosions, hygiene, toxicology, hazard identification, and risk assessment in the chemical process industries. Corequisite: Drill component.
Prerequisite: Honors standing, CHEG 3323 and CHEG 3144 both with a C or above. (Typically offered: Fall)
This course is equivalent to CHEG 4813.
CHEG 488V. Special Problems. 1-6 Hour.
Special problems. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{CHEG 5013. Membrane Separation and System Design. 3 Hours.}

Theory and system design of cross flow membrane process--reverse osmosis, nanofiltration, ultrafiltration, and microfiltration--and applications for pollution control, water treatment, food and pharmaceutical processing. (Typically offered: Irregular)

CHEG 5043. Colloid and Interface Science. 3 Hours.
This course aims to provide essential knowledge about surface, interface, and molecular self-organization. At the end of this course students should understand (i) basic concepts to describe phenomena at surfaces, (ii) molecular self-organization, and (iii) basic techniques for characterization of surfaces and interfaces. (Typically offered: Spring Odd Years)

CHEG 5113. Transport Processes I. 3 Hours.
Fundamental concepts and laws governing the transfer of momentum, mass, and heat. (Typically offered: Fall)

\section*{CHEG 5133. Advanced Reactor Design. 3 Hours.}

Applied reaction kinetics with emphasis on the design of heterogeneous reacting systems including solid surface catalysis, enzyme catalysis, and transport phenomena effects. Various types of industrial reactors, such as packed bed, fluidized beds, and other non-ideal flow systems are considered. (Typically offered: Spring)

\section*{CHEG 5273. Corrosion Control. 3 Hours.}

Qualitative and quantitative introduction to corrosion and its control. Application of the fundamentals of corrosion control in the process industries is emphasized. (Typically offered: Spring)

CHEG 5333. Advanced Thermodynamics. 3 Hours.
Methods of statistical thermodynamics, the correlation of classical and statistical thermodynamics, and the theory of thermodynamics of continuous systems (nonequilibrium thermodynamics). (Typically offered: Fall)

\section*{CHEG 5443. Chemical Engineering Design II. 3 Hours.}

A capstone design class designed for graduate students who do not have an engineering degree. Responsibility for decision making is placed on the students in the solution of a comprehensive, open ended problem based on an industrial process. Both formal oral and formal written presentation of results are required. Students may not receive credit for both CHEG 4443 and CHEG 5443. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

CHEG 5513. Biochemical Engineering Fundamentals. 3 Hours.
An introduction to bioprocessing with an emphasis on modern biochemical engineering techniques and biotechnology. Topics include: basic metabolism (procaryote and eucaryote), biochemical pathways, enzyme kinetics (including immobilized processes), separation processes (e.g. chromatography) and recombinant DNA methods. Material is covered within the context of mathematical descriptions (calculus, linear algebra) of biochemical phenomenon. (Typically offered: Spring Even Years)

\section*{CHEG 5733. Polymer Science and Engineering. 3 Hours.}

Synthesis, characterization, and application for polymers and multi-component polymer materials are presented. Topics include polymer science principles, commercial and research practices, processing, and recycling. (Typically offered: Irregular)

CHEG 5773. Medical Applications of Membranes Theory, Current Uses, and Development Areas. 3 Hours.
The course will cover most present-day medical products, treatments, and surgical equipment that rely on membrane transport and/or separation to function effectively. Membranes or membrane devices are used when certain human organs stop working or lose some degree of effectiveness. Those that will be covered in this course include the kidney, the pancreas, the lungs, the skin, and the eye. Localized, controlled-release of medications is also an area where membranes are used in medicine and this area will be described also. Along with dialysis, other external membrane treatment processes such as membrane plasmapheresis (a process whereby a membrane is used to separate blood cells from plasma and thereby opening the door for more effectively treating the cells or plasma separately outside of the body) will be discussed. (Typically offered: Irregular)

\section*{CHEG 5801. Graduate Seminar. 1 Hour.}

Students hear and present oral presentations on innovations in a variety of chemical engineering subjects with special emphasis on new developments. Prerequisite:
Graduate standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

\section*{CHEG 588V. Special Problems. 1-6 Hour.}

Opportunity for individual study of an advanced chemical engineering problem not sufficiently comprehensive to be a thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

CHEG 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

CHEG 6123. Transport Processes II. 3 Hours.
Continuation of CHEG 5113. Prerequisite: CHEG 5113. (Typically offered: Spring)
CHEG 688V. Special Topics in Chemical Engineering. 1-3 Hour.
Advanced study of current Chemical Engineering topics not covered in other courses. Prerequisite: Doctoral students only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CHEG 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Chemistry and Biochemistry (CHEM)}

\section*{Courses}

CHEM 1051L. Chemistry in the Modern World Laboratory (ACTS Equivalency = CHEM 1004 Lab). 1 Hour.
Basic laboratory exercises involving measurements of mass and volume, acids and bases, hardness of water, energy content in fuel, sugar content in drinks, and radioactivity. Meets 2 hours per week. Corequisite: CHEM 1053. (Typically offered: Fall and Spring)

CHEM 1053. Chemistry in the Modern World (ACTS Equivalency = CHEM 1004 Lecture). 3 Hours.
The impact of chemical developments upon contemporary society. Chemical problems of ecological, environmental, nutritional, economic, and sociological concern. Designed for non-science majors. Lecture 3 hours per week. Corequisite: CHEM 1051L. (Typically offered: Fall and Spring)

CHEM 1071L. Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab). 1 Hour.
Laboratory exercises in principles and practices of Fundamental Chemistry Corequisite: CHEM 1073. (Typically offered: Fall)

CHEM 1073. Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture). 3 Hours.
One-semester introductory-level general chemistry course introducing select fundamental concepts and related problem-solving for atomic and molecular structures, nomenclature, dimensional analysis, chemical reactions, chemical bonding, intermolecular forces, states of matter, solutions, acid-base reactions, redox reactions, kinetics, thermochemistry, and chemical equilibrium. Corequisite: CHEM 1071L and related course component drill section for CHEM 1073. (Typically offered: Fall and Summer)

CHEM 1101L. University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab). 1 Hour.
Laboratory exercises involving density, types of chemical reactions separations and chromatography, solubility, waters of hydration, freezing point depression, gas laws, and data interpretation. Meets 3 hours per week for 1 hour credit. Pre- or Corequisite: CHEM 1103. (Typically offered: Fall, Spring and Summer)

CHEM 1103. University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture). 3 Hours.
An introductory course for science, engineering or agriculture majors. Atomic structure, electron configurations and periodic properties, nomenclature and bonding in compounds, Lewis structure and resonance forms, molecular geometries and polarity, stoichiometry, solution chemistry and aqueous reactions, thermochemistry, gas laws and kinetic molecular theory. Corequisite: Drill component. Prerequisite: MATH 1203 or higher, or AP Calculus AB 3C or higher, or AP Calculus BC 4C or higher, or MATH 1203 CLEP 54 or higher, or UA Math Placement 46 or higher, or ACT MATH 22 or higher, or new SAT MATH 540/old SAT MATH 540 or higher (Typically offered: Fall, Spring and Summer)

CHEM 1121L. University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab). 1 Hour.
Quantitative laboratory with data interpretation and exercises covering the topics of stoichiometry, thermodynamics, kinetics, chemical equilibrium, pH , and descriptive inorganic chemistry. Laboratory 3 hours per week. Upon completion of CHEM 1121L on the UAF campus with a grade of "C" or better, credit for CHEM 1101L can be requested. Corequisite: CHEM 1123 and related course component drill section for CHEM 1123. (Typically offered: Fall, Spring and Summer)

CHEM 1121M. Honors University Chemistry II Laboratory. 1 Hour.
Qualitative and quantitative laboratory with data interpretation and exercises covering the topics of stoichiometry, thermodynamics, kinetics, chemical equilibrium, pH , and descriptive inorganic chemistry. Laboratory notebooks are required as part of every experiment. Designed for students in the honors programs. Laboratory 3 hours per week. Corequisite: CHEM 1123H and related course component drill for CHEM 1123H. (Typically offered: Fall and Spring) This course is equivalent to CHEM 1121L

CHEM 1123. University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture). 3 Hours.

Introductory course for science, engineering or agriculture majors. Liquids, solids, intermolecular forces, phase diagrams, solution chemistry, solubility, colligative properties, chemical kinetics, chemical equilibria, acid-base equilibria, aqueous ionic equilibria, titrations, buffers, solubility equilibria, thermodynamics, electrochemistry, and nuclear chemistry. Lecture 3 hours per week. Corequisite: CHEM 1121L and related course component drill section for CHEM 1123. Prerequisite: CHEM 1103 (or CHEM 1203, or satisfactory performance on the chemistry proficiency exam) and MATH 1203 or higher, or AP Calculus AB 3C or higher, or AP Calculus BC 4C or higher, or MATH 1203 CLEP with a score of 54 or higher, or UA Math Placement 46 or higher, or ACT MATH 22 or higher, or new SAT MATH 540/old SAT Math 540 or higher. (Typically offered: Fall, Spring and Summer)

CHEM 1123H. Honors University Chemistry II. 3 Hours.
Presents the topics of periodicity, bonding, stoichiometry, thermodynamics, kinetics, and chemical equilibrium in detail. Lecture 3 hours per week. Students with satisfactory performance on the proficiency exam and who complete CHEM 1123H on the UAF campus with a grade of "C" or better can request credit for CHEM 1103. Pre- or Corequisite: MATH 1284C or higher. Corequisite: CHEM 1121M and related course component drill section for CHEM 1123H. Prerequisite: Honors candidacy and CHEM 1103 (or CHEM 1203, or satisfactory performance on the chemistry proficiency exam). (Typically offered: Fall, Spring and Summer) This course is equivalent to CHEM 1123.

\section*{CHEM 1201L. Chemistry for Majors I Laboratory. 1 Hour.}

Laboratory exercises involving density, types of chemical reactions separations and chromatography, solubility, waters of hydration, freezing point depression, gas laws, and data interpretation. Laboratory notebooks are required as part of every experiment.Laboratory 3 hours per week. Students may not receive credit for both CHEM 1201L and CHEM 1101L. Corequisite: CHEM 1203 and related course component drill for CHEM 1203. (Typically offered: Fall)

CHEM 1203. Chemistry for Majors I. 3 Hours.
The first half of a two-semester course designed especially for students planning to major in chemistry or biochemistry. Students may not receive credit for both CHEM 1203 and CHEM 1103. Corequisite: CHEM 1201L and related course component drill section for CHEM 1203. Prerequisite: MATH 1203 or higher, or AP Calculus AB 3C or higher, or AP Calculus BC 4C or higher, or MATH 1203 CLEP with a score of 54 or higher, or UA Math Placement 46 or higher, or ACT MATH 22 or higher, or new SAT MATH 540/old SAT MATH 540 or higher. (Typically offered: Fall)

\section*{CHEM 1221L. Chemistry for Majors II Laboratory. 1 Hour.}

Qualitative and quantitative laboratory with data interpretation and exercises covering the topics of stoichiometry, thermodynamics, kinetics, chemical equilibrium, pH , and descriptive inorganic chemistry. Laboratory notebooks are required as part of every experiment. Laboratory 3 hours per week. Students may not receive credit for both CHEM 1221L and CHEM 1121L. Corequisite: CHEM 1223 and related course component drill for CHEM 1223. (Typically offered: Spring)
This course is equivalent to CHEM 1121L.
CHEM 1223. Chemistry for Majors II. 3 Hours.
The second half of a two-semester course designed specifically for students planning to major in chemistry or biochemistry. Students may not receive credit for both CHEM 1223 and CHEM 1123. Pre- or Corequisite: MATH 1284C or higher. Corequisite: CHEM 1221L and related course component drill section for CHEM 1223. Prerequisite: CHEM 1203 and CHEM 1201L (or CHEM 1103 and CHEM 1101L). (Typically offered: Spring)
This course is equivalent to CHEM 1123.
CHEM 2261L. Analytical Chemistry Laboratory. 1 Hour.
Covers techniques of classical and instrumental methods of chemical separation and analysis. Laboratory 4 hours per week. Chemistry Majors/Minors must take analytical lecture and lab prior to any physical chemistry course. Chemistry Majors/Minors should take analytical lecture and lab together. Pre- or Corequisite: CHEM 2263. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L) or (CHEM 1073 and CHEM 1071L) and MATH 1203 or higher, or AP Calculus AB 3C or higher, or AP Calculus BC 4C or higher, or CLEP College Algebra 54 or higher. (Typically offered: Fall and Spring)

CHEM 2263. Analytical Chemistry Lecture. 3 Hours.
Principles of chemical separations, analysis by classical and instrumental methods, and chemical equilibrium in physical and biological systems. Lecture 3 hours per week. Chemistry Majors/Minors must take analytical lecture and lab prior to any physical chemistry course. Chemistry Majors/Minors should take analytical lecture and lab together. Prerequisite: ((CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L) or (CHEM 1073 and CHEM 1071L)) and ((MATH 1203 or higher) or (AP Calculus AB 3C or higher) or (AP Calculus BC 4C or higher) or (MATH 1203 CLEP score of College Algebra 54 or higher) or (UA Math Placement 46 or higher) or (ACT MATH 22 or higher) or (old/ new SAT MATH of 540 or higher)). (Typically offered: Fall and Spring)

\section*{CHEM 2611L. Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab). 1 Hour.}

A focus on properties of organic compounds as well as reactions of organic compounds with an emphasis on functional groups along with some classifications of certain types of compounds.Laboratory 3 hours per week. Corequisite: CHEM 2613 and related course component drill for CHEM 2613. (Typically offered: Fall, Spring and Summer)

\section*{CHEM 2613. Organic Physiological Chemistry (ACTS Equivalency = CHEM} 1224 Lecture). 3 Hours.
One semester survey of organic chemistry necessary for understanding of biological systems, with some related physiological chemistry. Lecture 3 hours per week. Corequisite: CHEM 2611L and related course component drill section for CHEM 2613. Prerequisite: (CHEM 1073 and CHEM 1071L) or (CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L). (Typically offered: Fall, Spring and Summer)

CHEM 3203. Forensic Chemistry. 3 Hours.
Survey of chemistry used in criminal investigations. Topics may include detection and identification of drugs, alcohol, toxins, explosives and gun powder residue. Chemical analysis of paint, ink, paper, soil, glass and fibers. Chemical detection of blood and fingerprints. Extraction of DNA from evidence, DNA fingerprinting. Prerequisite: CHEM 2613, or CHEM 3613 (recommended), or CHEM 3613H, or CHEM 3713. (Typically offered: Irregular)

CHEM 3273. Inquiry and Modeling in Science Education. 3 Hours.
Study of science practices with an emphasis on modeling and inquiry for learning/ teaching. Includes practical, philosophical, cognitive, and disciplinary specific dimensions of doing science in academic and nonacademic settings. Includes planning and implementing multiple scientific inquiries, engaging in reflective practices, writing and presenting scientific information. Safety issues are included. Corequisite: Drill component. Prerequisite: 8 hours of CHEM courses. (Typically offered: Spring)
This course is cross-listed with PHYS 3273, BIOL 3273.
CHEM 3451L. Elements of Physical Chemistry Laboratory. 1 Hour. Experimental measurements of the physical properties, chemical systems, error analysis and report writing. Experiments cover topics in thermochemistry, heat capacity, chemical kinetics, spectroscopy, and phase/chemical equilibrium using a variety of physical chemistry techniques. Laboratory 3 hours per week. Corequisite: Chemistry majors and chemistry minors must enroll in CHEM 3453 concurrently. Prerequisite: CHEM 2261L and PHYS 2031L (or PHYS 2074). (Typically offered: Fall)

\section*{CHEM 3453. Elements of Physical Chemistry. 3 Hours.}

One semester accelerated course in physical chemistry primarily for students majoring/minoring in chemistry with biochemistry option, or pre-professional and agriculture students. Topics include thermodynamics, phase \& chemical equilibrium, chemical kinetics, quantum chemistry and spectroscopy. Presented at the same level as the 2-semester course with some recourse to calculus, although covering fewer topics in quantum chemistry. Lecture 3 hours per week. Students cannot earn credit for both CHEM 3453 and CHEM 3514. Corequisite: Chemistry majors and chemistry minors must enroll in CHEM 3451L concurrently. Prerequisite: CHEM 2263 and PHYS 2033 (or PHYS 2074), and MATH 2554 (or MATH 2043). (Typically offered: Fall)

\section*{CHEM 3504. Physical Chemistry I. 4 Hours.}

First semester of a 2-semester course in physical chemistry designed for chemistry majors and chemistry minors with topics covering wave-particle duality, quantum chemistry, atomic and molecular structure, bonding, spectroscopy and elementary statistical mechanics. Lecture and recitation 4 hours per week. Pre- or Corequisite: MATH 2564. Prerequisite: CHEM 2263 and PHYS 2074. (Typically offered: Fall)

\section*{CHEM 3512L. Physical Chemistry Laboratory. 2 Hours.}

Experimental studies of molecular structure, thermochemistry, and chemical kinetics, and the determination of other physicochemical properties of matter. Laboratory 8 hours per week. Students cannot earn credit for both CHEM 3451L and CHEM 3512L. Corequisite: Chemistry majors and chemistry minors must take CHEM 3514 concurrently. Prerequisite: CHEM 2261L and PHYS 2031L (or PHYS 2074). (Typically offered: Spring)
CHEM 3514. Physical Chemistry II. 4 Hours.
Second semester of a 2-semester course in physical chemistry aimed for B.S. chemistry majors/minors with topics covering the laws of thermodynamics, phase \& chemical equilibria; structure and properties of solutions, chemical potential, and chemical kinetics. Lecture and recitation 4 hours per week. Students cannot earn credit for both CHEM 3453 and CHEM 3514. Corequisite: Chemistry majors and chemistry minors must enroll in CHEM 3512L concurrently. Prerequisite: CHEM 3504. (Typically offered: Spring)
CHEM 3601L. Organic Chemistry I Laboratory. 1 Hour.
Introduction to basic techniques for separation, purification, and identification of organic compounds. Laboratory exercises in organic chemistry. Meets 3 hours per week. Corequisite: CHEM 3603 and related course component drill for CHEM 3603. (Typically offered: Fall and Summer)

CHEM 3602M. Honors Organic Chemistry I Laboratory. 2 Hours.
Introduction to basic techniques for separation, purification, and identification of organic compounds. Drill lecture-discussion ( \(1 \mathrm{hr} / \mathrm{wk}\) ) and laboratory ( \(4 \mathrm{hr} / \mathrm{wk}\) ). Writing component. Required drill. Corequisite: CHEM 3603H and related course component drill sections for CHEM 3603H and CHEM 3602M. Prerequisite: Honors candidacy. (Typically offered: Fall and Summer)
This course is equivalent to CHEM 3601 L .
CHEM 3603. Organic Chemistry I. 3 Hours.
Introduction to organic compounds including alkanes, haloalkanes, alkenes and alkynes; properties including basic stereochemistry and reactions including nucleophilic substitution, elimination, and electrophilic addition reactions. Lecture 3 hours per week. Corequisite: CHEM 3601L and related course component drill section for CHEM 3603. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L). (Typically offered: Fall and Summer)

\section*{CHEM 3603H. Honors Organic Chemistry I. 3 Hours.}

In-depth introduction to organic compounds; properties and reactions. Including alkanes, haloalkanes, alkenes and alkynes; nucleophilic substitution, elimination, and electrophilic addition reactions. Lecture 3 hours per week. Corequisite: CHEM 3602M and related course component drill sections for CHEM 3603H and CHEM 3602M. Prerequisite: Honors candidacy and ((CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L)). (Typically offered: Fall and Summer)
This course is equivalent to CHEM 3603.

\section*{CHEM 3611L. Organic Chemistry II Laboratory. 1 Hour.}

Continuation of CHEM 3601L and introduction to basic techniques of synthesis, isolation, and determination of structure and reactivity of organic compounds. Laboratory exercises in organic chemistry. Meets 3 hours per week. Corequisite: CHEM 3613 and related course component drill for CHEM 3613. Prerequisite: CHEM 3601L. (Typically offered: Spring and Summer)

\section*{CHEM 3612M. Honors Organic Chemistry II Laboratory. 2 Hours.}

Continuation of CHEM 3602M and introduction to basic techniques of synthesis, isolation, and determination of structure and reactivity of organic compounds. Drill lecture-discussion (1 hour/wk) and laboratory (4 hours/wk). Writing component. Drill required. Corequisite: CHEM 3613H and related course component drill sections for CHEM 3612M and CHEM 3613H. Prerequisite: Honors candidacy and CHEM 3602M. (Typically offered: Spring and Summer)
This course is equivalent to CHEM 3611 L .

CHEM 3613. Organic Chemistry II. 3 Hours.
Basic chemistry of aromatic and carbonyl compounds: properties and reactions. Lecture 3 hours per week. Corequisite: CHEM 3611L and related course component drill section for CHEM 3613. Prerequisite: (CHEM 3603 and CHEM 3601L) or (CHEM 3603H and CHEM 3602M) or (CHEM 3703 and CHEM 3702L). (Typically offered: Spring and Summer)

\section*{CHEM 3613H. Honors Organic Chemistry II. 3 Hours.}

In-depth coverage of the basic chemistry of aromatic and carbonyl compounds; properties and reactions. Lecture 3 hours per week.Corequisite: CHEM 3612M and related course component drill sections for CHEM 3613 H and CHEM 3612M. Prerequisite: Honors candidacy and CHEM 3603H and CHEM 3602M. (Typically offered: Spring and Summer)
This course is equivalent to CHEM 3613.
CHEM 3702L. Organic Chemistry I Lab for Chemistry Majors. 2 Hours.
Introduction to basic techniques for separation, purification, and identification of organic compounds. Drill lecture-discussion (1hr/wk) and laboratory (4hr/wk). Writing component. Required drill. Corequisite: CHEM 3703 and related course component drill sections for CHEM 3703 and CHEM 3702L. Prerequisite: Chemistry major or minor. (Typically offered: Fall)

CHEM 3703. Organic Chemistry I Lecture for Chemistry Majors. 3 Hours. In-depth introduction to organic compounds including alkanes, haloalkanes, alkenes and alkynes; properties including basic stereochemistry and reactions including nucleophilic substitution, elimination, and electrophilic addition. Lecture 3 hours per week. Corequisite: CHEM 3702L and related course component drill sections for CHEM 3703 and CHEM 3702L. Prerequisite: Chemistry major or minor and (CHEM 1123 and CHEM 1121L) or (CHEM 1123H and CHEM 1121M) or (CHEM 1223 and CHEM 1221L). (Typically offered: Fall) This course is equivalent to CHEM 3603.
CHEM 3712L. Organic Chemistry II Lab for Chemistry Majors. 2 Hours. Continuation of CHEM 3702L and introduction to basic techniques of synthesis, isolation, and determination of structure and reactivity of organic compounds. Drill lecture-discussion (1 hour/wk) and laboratory (4 hours/wk). Writing component. Drill required. Corequisite: CHEM 3713 and related course component drill sections for CHEM 3713 and CHEM 3712L. Prerequisite: Chemistry major or minor and CHEM 3702L. (Typically offered: Spring)
CHEM 3713. Organic Chemistry II Lecture for Chemistry Majors. 3 Hours. Continuation of in-depth coverage of the basic chemistry of the compounds of carbon. Properties and reactions of aromatic and carbonyl functional groups. Lecture 3 hours per week. Corequisite: CHEM 3712L and related course component drill sections for CHEM 3713 and CHEM 3712L. Prerequisite: Chemistry major or minor and CHEM 3703 and CHEM 3702L. (Typically offered: Spring) This course is equivalent to CHEM 3613.

\section*{CHEM 3813. Elements of Biochemistry. 3 Hours.}

One semester survey course of the fundamentals of biochemistry. Structures, properties, and reactions of major classes of biomolecules. Basics of enzyme catalysis. Overview of metabolism. Credit for both CHEM 3813 and CHEM 4813H may not be counted toward a chemistry degree. Lecture 3 hours per week. Prerequisite: (CHEM 3613 and CHEM 3611L) or (CHEM 3613H and CHEM 3612M) or (CHEM 3713 and CHEM 3712L) or (CHEM 2613 and CHEM 2611L). (Typically offered: Fall, Spring and Summer)
CHEM 3923H. Honors Colloquium. 3 Hours.
Covers a special topic or issue. Offered as a part of the honors program. Prerequisite: Honors candidacy. (Typically offered: Fall, Spring and Summer)

\section*{CHEM 400V. Chemistry Research. 1-4 Hour.}

Research problems. Students need to enroll in their supervising faculty mentor's section. CHBC students conducting research under a faculty mentor outside of CHBC must enroll in the CHBC chair's section. Additionally, honors students need the approval of the CHBC department honors advisor. Honors students must complete thesis in senior year. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{CHEM 400VH. Honors Chemistry Research. 1-4 Hour.}

Research problems. Students need to enroll in their supervising faculty mentor's section. CHBC students conducting research under a faculty mentor outside of CHBC must enroll in the CHBC chair's section. Additionally, honors students need the approval of the CHBC department honors advisor. Honors students must complete thesis in senior year. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to CHEM 400 V .
CHEM 4011H. Honors Seminar. 1 Hour.
Research seminar for chemistry majors enrolled in the honors program. Enrollment is required the spring semester of the junior and senior years for honors students. Senior honors students must make one research presentation to graduate with honors. Prerequisite: Honors candidacy, chemistry major and junior or senior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{CHEM 405V. Special Topics in Chemistry. 1-4 Hour.}

Potential topics include: advanced spectroscopic methods, bioanalytical chemistry, bioinorganic chemistry, bioorganic chemistry, biophysical chemistry, chemical sensors, drug discovery and design, nanomaterials, pharmaceutical chemistry, process analytical chemistry, and protein folding and design. (Typically offered: Irregular)
CHEM 4123. Advanced Inorganic Chemistry I. 3 Hours.
Reactions and properties of inorganic compounds from the standpoint of electronic structure and the periodic table. Emphasis on recent developments. Prerequisite: CHEM 3453 or CHEM 3514. (Typically offered: Fall)

CHEM 4211L. Instrumental Analysis Laboratory. 1 Hour.
Provides laboratory experience in parallel with the lecture material in CHEM 4213. Laboratory 3 hours per week. Corequisite: CHEM 4213. (Typically offered: Fall and Spring)

\section*{CHEM 4213. Instrumental Analysis. 3 Hours.}

Provides students, especially those in the agricultural, biological, and physical sciences, with an understanding of modern instrumental techniques of analysis. Lecture 3 hours per week. Corequisite: CHEM 4211L. Prerequisite: (CHEM 2263 and CHEM 2261L) and ((CHEM 3613 and CHEM 3611L) or (CHEM 3613H and CHEM 3612M) or (CHEM 3713 and CHEM 3712L)). (Typically offered: Fall and Spring)

CHEM 4283. Energy Conversion and Storage. 3 Hours.
Fundamental and applied concepts of energy storage and conversion, with sustainability implications. Chemical reactions (kinetics, thermodynamics, mass transfer), emphasizing oxidation-reduction, electrochemical, and interfacial processes, and impact on performance of fuel and biofuel cells, batteries, supercapacitors, and photochemical conversion. Prerequisite: CHEM 1123 and PHYS 2074. (Typically offered: Fall Even Years)

CHEM 4723. Experimental Methods in Organic Chemistry. 3 Hours.
Introduction to the application of synthetic and spectroscopic methods in organic chemistry, including mass spectrometry, infrared spectroscopy, and nuclear magnetic resonance spectrometry. Other laboratory techniques applicable to chemical research will be included. Lecture 3 hours and laboratory 3 hours per week. Lecture only meets the first half of the term. Laboratory meets the entire term. Corequisite: Lab component. Prerequisite: CHEM 3613 and CHEM 3611L, (or CHEM 3613H or CHEM 3612M), (or CHEM 3713 and CHEM 3712L). (Typically offered: Fall)

\section*{CHEM 4813H. Honors Biochemistry I. 3 Hours.}

The first of a two-course series covering biochemistry for undergraduate students in biology, agriculture, and chemistry. Topics covered include protein structure and function, enzyme kinetics, enzyme mechanisms, and nucleic acid and carbohydrate structures. Credit cannot be earned in both CHEM 3813 and CHEM 4813H.
Additional honors-level work required in this section. Prerequisite: Honors candidacy and (CHEM 3613 and CHEM 3611L) or (CHEM 3613H and CHEM 3612M) or (CHEM 3713 and CHEM 3712L). (Typically offered: Fall)

\section*{CHEM 4843H. Honors Biochemistry II. 3 Hours.}

A continuation of CHEM 4813H covering topics including biological membranes and bioenergetics, photosynthesis, lipids and lipid metabolism, nucleic acid structure, structure and synthesis, and molecular biology. Credit cannot be earned in both CHEM 3813 and CHEM 4843H. Additional honors-level work required in this section. Prerequisite: Honors candidacy and CHEM 4813H. (Typically offered: Spring)

CHEM 4853. Biochemical Techniques. 3 Hours.
Techniques for handling, purifying and analyzing enzymes, structural proteins, and nucleic acids. Lecture 1 hour, laboratory 6 hours per week. Corequisite: Lab component. Pre or Corequisite: CHEM 3813 or CHEM 4843H. (Typically offered: Spring)

\section*{CHEM 505V. Special Topics in Chemistry. 1-4 Hour.}

Potential topics include: advanced spectroscopic methods, bioanalytical chemistry, bioinorganic chemistry, bioorganic chemistry, biophysical chemistry, chemical sensors, drug discovery and design, nanomaterials, pharmaceutical chemistry, process analytical chemistry, and protein folding and design. Graduate degree credit will not be given for both CHEM 405V and CHEM 505V. Prerequisite: Instructor consent. (Typically offered: Irregular)
CHEM 5101. Introduction to Research. 1 Hour.
This eight week course introduces new graduate students to research opportunities and skills in chemistry and biochemistry. Meets 2 hours per week in the first half of the semester. Safety and ethics in research and scholarship are discussed. Students learn about research programs in the department to aid in choosing an advisor. (Typically offered: Fall)

\section*{CHEM 5123. Advanced Inorganic Chemistry. 3 Hours.}

Reactions and properties of inorganic compounds from the standpoint of electronic structure and the periodic table. Emphasis on recent developments. Knowledge comparable to material in CHEM 3453 is recommended. (Typically offered: Fall)
CHEM 5143. Advanced Inorganic Chemistry II. 3 Hours.
Chemistry of metallic and non-metallic elements emphasizing molecular structure, bonding and the classification of reactions. Knowledge of inorganic chemistry comparable to material in CHEM 4123 and CHEM 5123 is recommended. (Typically offered: Irregular)

\section*{CHEM 5153. Structural Chemistry. 3 Hours.}

Determination of molecular structure by diffraction, spectroscopic, and other techniques. Illustrative examples will be chosen from inorganic chemistry and biochemistry. (Typically offered: Irregular)

\section*{CHEM 5213. Instrumental Analysis. 3 Hours.}

Provides students, especially those in the physical, agricultural, and biological sciences, with an understanding of the theory and practice of modern instrumental techniques of analysis. Lecture 3 hours per week. Knowledge comparable to material in CHEM 2263 and CHEM 3603 is recommended. (Typically offered: Fall and Spring)

\section*{CHEM 5233. Chemical Separations. 3 Hours.}

Modern separation methods including liquid chromatography (adsorption, liquidliquid partition, ion exchange, exclusion) and gas chromatography. Theory and instrumentation is discussed with emphasis on practical aspects of separation science. (Typically offered: Fall Even Years)

CHEM 5243. Electrochemical Methods of Analysis. 3 Hours.
Topics will include diffusion, electron transfer kinetics, and reversible and irreversible electrode processes followed by a discussion of chronoamperometry, chronocoulometry, polarography, voltammetry, and chronopotentiometry. Knowledge of analytical chemistry comparable to material in CHEM 4213 is recommended. (Typically offered: Spring Even Years)

\section*{CHEM 5253. Spectrochemical Methods of Analysis. 3 Hours.}

Principles and methods of modern spectroscopic analysis. Optics and instrumentation necessary for spectroscopy is also discussed. Topics include atomic and molecular absorption and emission techniques in the ultraviolet, visible, and infrared spectral regions. Knowledge of analytical chemistry comparable to material in CHEM 4213 is recommended. (Typically offered: Fall Odd Years)

CHEM 5283. Energy Conversion and Storage. 3 Hours.
Fundamental and applied concepts of energy storage and conversion with sustainability implications. Chemical reactions (kinetics, thermodynamics, mass transfer), emphasizing oxidation-reduction, electrochemical, and interfacial processes, and impact on performance of fuel and biofuel cells, batteries, supercapacitors, and photochemical conversion. (Typically offered: Fall Even Years)

\section*{CHEM 5443. Physical Chemistry of Materials. 3 Hours.}

Physical and chemical characteristics of materials and discussion of the science behind materials engineering and performance. Topics include theory, principles of characterization methods, modeling, and applications in the context of materials. Knowledge comparable to material in CHEM 3514 and CHEM 3504 or CHEM 3453 or CHEG 3713 or MEEG 2403 is recommended. (Typically offered: Irregular)

\section*{CHEM 5453. Quantum Chemistry I. 3 Hours.}

Fundamental quantum theory: Hamiltonian formalism in classical mechanics, Schrodinger equation, operators, angular momentum, harmonic oscillator, barrier problems, rigid rotator, hydrogen atom, and interaction of matter with radiation. Knowledge of physical chemistry comparable to material in CHEM 3504 is recommended. (Typically offered: Spring Odd Years)

CHEM 5473. Chemical Kinetics. 3 Hours.
Theory and applications of the principles of kinetics to reactions between substances, both in the gaseous state and in solution. Knowledge of physical chemistry comparable to material in CHEM 3514 is recommended. (Typically offered: Spring)

CHEM 5573. Statistical Thermodynamics. 3 Hours.
Covers fundamentals in thermodynamics, molecular dynamics, Monte Carlo, phase transitions, behavior of gases and liquids and basic concepts in chemical kinetics and physical kinetics. Knowledge comparable to physical chemistry materials in CHEM 3514 is recommended. (Typically offered: Irregular)

CHEM 5603. Physical Organic Chemistry. 3 Hours.
Introduction to the theoretical interpretation of reactivity, reaction mechanisms, and molecular structure of organic compounds. Application of theories of electronic structure; emphasis on recent developments. Knowledge of material comparable to CHEM 3613, CHEM 3613H, CHEM 3713 and CHEM 3514 is recommended. (Typically offered: Fall)

\section*{CHEM 5633. Organic Reactions. 3 Hours.}

The more important types of organic reactions and their applications to various classes of compounds. Knowledge of organic chemistry comparable to material in CHEM 3603 is recommended. (Typically offered: Irregular)

CHEM 5643. Chemistry of Carbohydrates. 3 Hours.
Introduction to carbohydrate chemistry including structures of mono-, di- and oligosaccharides; properties including stereochemistry; characterization including spectroscopy, and molecular recognition; and real life examples including blood groups; current strategies, research groups and topics at the forefront in the field. (Typically offered: Spring Even Years)

\section*{CHEM 5723. Experimental Methods in Organic Chemistry. 3 Hours.}

Introduction to the application of synthetic and spectroscopic methods in organic chemistry, including mass spectrometry, infrared spectroscopy, and nuclear magnetic resonance spectrometry. Lecture 3 hours per week. Knowledge comparable to material in CHEM 3613 is recommended. (Typically offered: Fall)

\section*{CHEM 5753. Methods of Organic Analysis. 3 Hours.}

Interpretation of physical measurements of organic compounds in terms of molecular structure. Emphasis on spectroscopic methods (infrared, ultraviolet, magnet resonance, and mass spectra). Knowledge of organic chemistry comparable to material in CHEM 3603 is recommended. (Typically offered: Fall)

CHEM 5813. Biochemistry I. 3 Hours.
The first of a two-course series covering biochemistry for graduate students in biology, agriculture, and chemistry. Topics covered include protein structure and function, enzyme kinetics, enzyme mechanisms, and nucleic acid and carbohydrate structures. Knowledge of organic chemistry comparable to material in CHEM 3613 is recommended. (Typically offered: Fall)

CHEM 5843. Biochemistry II. 3 Hours.
A continuation of CHEM 5813 covering topics including biological membranes and bioenergetics, photosynthesis, lipids and lipid metabolism, nucleic acid and amino acid metabolism, and molecular biology. Knowledge of organic chemistry comparable to material in CHEM 3613 is recommended. Prerequisite: CHEM 5813. (Typically offered: Spring)

CHEM 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Chemistry graduate students enroll in this course as needed until all CUMES are passed and the student is officially a doctoral candidate. Prerequisite: Chemistry graduate student. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{CHEM 6011. Chemistry Seminar. 1 Hour.}

Weekly discussion of current chemical research. Departmental and divisional seminars in analytical chemistry, biochemistry, inorganic, organic, and physical chemistry are held weekly. Seminar credit does not count toward the minimum hourly requirements for any chemistry graduate degree. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{CHEM 619V. Special Topics in Inorganic Chemistry. 1-3 Hour.}

Topics which have been covered in the past include: technique and theory of \(x\) ray diffraction, electronic structure of transition metal complexes, inorganic reaction mechanisms, and physical methods in inorganic chemistry. (Typically offered: Irregular) May be repeated for degree credit.

CHEM 6283. Mass Spectrometry. 3 Hours.
This course is devoted to the fundamental principles and applications of analytical mass spectrometry. Interactions of ions with magnetic and electric fields and the implications with respect to mass spectrometer design are considered, as are the various types of mass spectrometer sources. Representative applications of mass spectrometry in chemical analysis are also discussed. Prerequisite: Graduate standing. (Typically offered: Spring Odd Years)

\section*{CHEM 629V. Special Topics in Analytical Chemistry. 1-3 Hour.}

Topics that have been presented in the past include: electroanalytical techniques, kinetics of crystal growth, studies of electrode processes, lasers in chemical analysis, nucleosynthesis and isotopic properties of meteorites, thermoluminescence of geological materials, early solar system chemistry and analytical cosmochemistry. (Typically offered: Irregular) May be repeated for degree credit.

CHEM 649V. Special Topics in Physical Chemistry. 1-3 Hour.
Topics which have been covered in the past include advanced kinetics, solution chemistry, molecular spectra, nuclear magnetic resonance spectroscopy, and methods of theoretical chemistry. (Typically offered: Irregular) May be repeated for degree credit.

\section*{CHEM 6633. Chemistry of Organic Natural Products. 3 Hours.}

Selected topics concerned with structure elucidation and synthesis of such compounds as alkaloids, antibiotics, bacterial metabolites, plant pigments, steroids, terpenoids, etc. Prerequisite: CHEM 5603 and CHEM 5633. (Typically offered: Irregular)

CHEM 6643. Organometallic Chemistry. 3 Hours.
Theories and principles of organometallic chemistry. Concepts include bonding, stereochemistry, structure and reactivity, stereochemical principles, conformational, steric and stereoelectronic effects. Transition metal catalysis of organic reactions will also be described. Knowledge of material comparable to CHEM 3713 and CHEM 3514 is recommended. (Typically offered: Irregular)

CHEM 669V. Special Topics in Organic Chemistry. 1-3 Hour.
Topics which have been presented in the past include heterogeneous catalysis, isotope effect studies of organic reaction mechanisms, organometallic chemistry, stereochemistry, photochemistry, and carbanion chemistry. (Typically offered: Irregular) May be repeated for degree credit.

CHEM 6823. Physical Biochemistry. 3 Hours.
Physical chemistry of proteins, nucleic acids, and biological membranes.
Ultracentrifugation, absorption and fluorescent spectrophotometry, nuclear magnetic resonance spectroscopy, x-ray diffraction, and other techniques. Prerequisite: CHEM 5813. (Typically offered: Fall Even Years)

CHEM 6863. Enzymes. 3 Hours.
Isolation, characterization, and general chemical and biochemical properties of enzymes. Kinetics, mechanisms, and control of enzyme reactions. Prerequisite: CHEM 5813 and CHEM 5843. (Typically offered: Fall Odd Years)
CHEM 6873. Molecular Biochemistry. 3 Hours.
Nucleic acid chemistry in vitro and in vivo, synthesis of DNA and RNA, genetic diseases, cancer biochemistry and genetic engineering. Prerequisite: CHEM 5813 and CHEM 5843. (Typically offered: Spring Odd Years)

CHEM 6883. Bioenergetics and Biomembranes. 3 Hours.
Cellular energy metabolism, photosynthesis, membrane transport, properties of membrane proteins, and the application of thermodynamics to biological systems. Prerequisite: CHEM 5813 and CHEM 5843. (Typically offered: Spring Even Years)

CHEM 700V. Doctoral Dissertation. 1-12 Hour.
Doctoral Dissertation. For chemistry graduate students who have passed all CUMES and have officially been admitted to doctoral candidacy. Prerequisite: Chemistry graduate student. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Cherokee (CHRK)}

\section*{Courses}

CHRK 1003. Elementary Cherokee I. 3 Hours.
Introduction to the Cherokee language. Focuses on the sound and syllabary system of Cherokee, including grammar, vocabulary, culture, and heritage. (Typically
offered: Fall)

\section*{CHRK 1013. Elementary Cherokee II. 3 Hours.}

Focuses on the sound and syllabary system of Cherokee, including grammar, vocabulary, culture, and heritage. Includes in-depth activities and experiences with the Cherokee language. Prerequisite: CHRK 1003 or instructor's consent. (Typically offered: Spring)

\section*{Chinese (CHIN) Courses}

CHIN 1003. Elementary Chinese I. 3 Hours.
Elementary Chinese. (Typically offered: Fall)
CHIN 1013. Elementary Chinese II. 3 Hours.
Elementary courses stress correct pronunciation, Aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Spring)

CHIN 2003. Intermediate Chinese I. 3 Hours.
Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall)

CHIN 2013. Intermediate Chinese II. 3 Hours.
Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Spring)

CHIN 3003. Advanced Chinese. 3 Hours.
Continues to develop speaking, listening, reading and writing skills and presents more complex forms and structures of the language as well as additional characters. Prerequisite: CHIN 2013 (Typically offered: Fall)

CHIN 3033. Conversation. 3 Hours.
Guided conversation practice for the post-intermediate student. Prerequisite: CHIN 2013 or equivalent. (Typically offered: Spring)

CHIN 3103. Chinese Culture through Film. 3 Hours.
This course explores Chinese culture through the lens of Chinese films. The course is designed to give students insights into Chinese culture by experiencing it through carefully selected Chinese films and thoughtful discussions. Through the film screenings, lectures, readings, discussions, and cultural reflections, students will learn about important dimensions of Chinese culture, especially regarding Chinese history, contemporary society, communication, education, romance, family, spiritual concepts, aesthetics, lifestyle, customs, and values. The course is taught in English; no knowledge of the Chinese language is required. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with AIST 3103.
CHIN 3983. Special Studies. 3 Hours.
May be offered in subject not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
CHIN 4313. Culture and Society in China. 3 Hours.
Social, communicative, technological, and business contexts of contemporary Chinese culture and society, as well as implications for global citizens. Taught in English. No knowledge of the Chinese language required. (Typically offered: Spring) This course is cross-listed with AIST 4323.

CHIN 4333. Business Chinese Language in Speaking and Writing. 3 Hours. Introduction of Chinese vocabulary, formats, and expressions in business environments, such as company structures, management, banking and accounting, as well as how to read and write contracts, letters, and other business documents. Prerequisite: CHIN 3003 or equivalent Chinese proficiency. (Typically offered: Fall)

\section*{Civil Engineering (CVEG)}

\section*{Courses}

CVEG 2002. Introduction to Civil Engineering Plans and CADD. 2 Hours.
Development and preparation of design and construction plans; plan terminology and features; introduction to computer-aided drafting and design (CADD) software. Corequisite: Drill component. Prerequisite: Civil Engineering major or departmental consent. (Typically offered: Fall, Spring and Summer)

CVEG 2013. Civil Engineering Mechanics I. 3 Hours.
CVEG 2013 provides the student with a foundation in the theory and principles of statics for use in subsequent civil engineering courses. The course applies mathematics and physics to solve practical problems of structural systems.
Corequisite: MATH 2574. Prerequisite: MATH 2564 and PHYS 2054. (Typically offered: Fall and Spring)

CVEG 2023. Civil Engineering Mechanics II. 3 Hours.
CVEG 2023 provides the student with a foundation in the theory and principles of mechanics of materials for use in subsequent civil engineering courses. This course applies mathematics and physics to solve problems in mechanics. Prerequisite: CVEG 2013 or MEEG 2003. (Typically offered: Fall and Spring)
CVEG 2051L. Surveying Systems Laboratory. 1 Hour.
Laboratory exercises demonstrating the principles and practices of surveying systems. Corequisite: CVEG 2053. (Typically offered: Fall)

\section*{CVEG 2053. Surveying Systems. 3 Hours.}

Coordinate geometry, measurements, and total integrated surveying systems; total stations, electronic data collection, and reduction; error analysis; applications to civil engineering and surveying practice. Corequisite: CVEG 2051L. Prerequisite: MATH 2554 or MATH 2445. (Typically offered: Fall)

CVEG 2113. Structural Materials. 3 Hours.
Production, properties, behavior, and structural applications of concrete, steel, timber, masonry, and plastic. Statistical analysis methods for quality control are also covered. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MEEG 2003 or CVEG 2013. Pre- or Corequisite: MEEG 3013 or CVEG 2023. (Typically offered: Fall and Spring)

\section*{CVEG 2851. Engineering Professional Practice Issues. 1 Hour.}

Study of various issues related to the professional practice of engineering including ethics, professionalism, professional licensure, project procurement, social and political issues, globalism, and other legal issues. (Typically offered: Fall and Spring)
CVEG 3131L. Soil Mechanics Laboratory. 1 Hour.
Index, strength, and consolidation properties of soils; test methods and specifications for soil sampling and testing. Corequisite: CVEG 3132. (Typically offered: Fall and Spring)

\section*{CVEG 3132. Soil Mechanics. 2 Hours.}

Introduction to geotechnical engineering. Properties of soils related to foundations, retaining walls, earth structures, and highways. Lecture 2 hours, laboratory 3 hours per week. Corequisite: CVEG 3131L. Pre- or Corequisite: CVEG 3213 and MATH 2584. Prerequisite: (MEEG 3013 or CVEG 2023) and GEOS 1113 and CVEG 2002. (Typically offered: Fall and Spring)
CVEG 3213. Hydraulics. 3 Hours.
Study of incompressible fluids. Topics include fluid properties, fluid statics, continuity, energy and hydraulic gradients, fundamentals of flow in pipes and open channels, flow measurement devices, pump selection and analysis. Corequisite: Lab component. Prerequisite: CVEG 2013 or MEEG 2003. (Typically offered: Fall and Spring)

CVEG 3223. Hydrology. 3 Hours.
Flood routing procedures in storage reservoirs and channels. Hydrologic planning including storage reservoir design, frequency duration analysis, and related techniques. Prerequisite: (CVEG 2053 or BENG 2643), (CVEG 3213 or MEEG 3503 or CHEG 2133). (Typically offered: Fall and Spring)

CVEG 3243. Environmental Engineering. 3 Hours.
Introduction to theories and fundamentals of physical, chemical, and biological processes with emphasis on water supply and wastewater collection, transportation, and treatment. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 2584 and CHEM 1103. (Typically offered: Fall and Spring)

\section*{CVEG 3303. Structural Analysis. 3 Hours.}

Truss analysis, influence lines for beams and frames, and effects of moving loads. Deformation of beams, frames, and trusses. Analysis of indeterminate structures by moment area, slope deflection, and moment distribution methods; approximate methods of analysis. Lecture 3 hours, drill 3 hours per week. Corequisite: Drill component. Prerequisite: MEEG 3013 or CVEG 2023. (Typically offered: Fall and Spring)

\section*{CVEG 3413. Transportation Systems Engineering. 3 Hours.}

Transportation Systems Engineering: Introduction to transportation systems engineering and planning. Includes the following topics: transportation governance, financing, and the effect on the environment; traffic flow theory; safety; traffic operations and control; capacity; and travel demand modeling. Prerequisite: CVEG 2053 and (INEG 2314 or INEG 3313). (Typically offered: Fall)

\section*{CVEG 4143. Foundation Engineering. 3 Hours.}

Analysis and design of retaining walls, footings, sheet piles, and piles. Determination of foundation settlements in sand and clay. Prerequisite: CVEG 3132 and INEG 2413. (Typically offered: Fall and Spring)

\section*{CVEG 4203. Environmental Regulations and Permits. 3 Hours.}

Topics include federal and state environmental regulations, the permitting process, permit requirements and related issues. Prerequisite: CVEG 3243 and senior standing. (Typically offered: Fall)

\section*{CVEG 4243. Environmental Engineering Design. 3 Hours.}

Application of physical, biological, and chemical operations and processes to the design of water supply and wastewater treatment systems. Prerequisite: CVEG 3243 and INEG 2413. (Typically offered: Spring)

\section*{CVEG 4263. Air Pollution Control. 3 Hours.}

Fundamentals of air pollution causes, effects, and measurements; as well as, control methods with application to current industrial problems. Prerequisite: CVEG 3213 or MEEG 3503. (Typically offered: Spring)

\section*{CVEG 4273. Open Channel Flow. 3 Hours.}

Open Channel Flow includes advanced open channel hydraulics, flow measurement techniques, a hydrology review, culvert and storm drainage design, natural channel classification (fluvial geomorphology) and rehabilitation, computer methods and environmental issues. Prerequisite: CVEG 3213 and CVEG 3223. (Typically offered: Spring)

\section*{CVEG 4303. Reinforced Concrete Design I. 3 Hours.}

Design of reinforced concrete elements with emphasis on ultimate strength design supplemented by working stress design for deflection and crack analysis. Prerequisite: CVEG 2113 and CVEG 3303. (Typically offered: Fall and Spring)

\section*{CVEG 4313. Structural Steel Design I. 3 Hours.}

Design of structural steel elements by elastic design the Load and Resistance Factor Design method. Intensive treatment of tension members, beams, columns, and connections. Pre- or Corequisite: CVEG 2113. Prerequisite: CVEG 3303. (Typically offered: Fall and Spring)

\section*{CVEG 4323. Structural Loadings. 3 Hours.}

Theoretical background to and practical code requirements for various structural loadings. These include dead loads, occupancy loads, roof loads and ponding, snow loads, granular loads, vehicular loads, wind loading, and seismic loads. Prerequisite: CVEG 3303, INEG 2413 and (CVEG 4303 or CVEG 4313). (Typically offered: Spring)

CVEG 4343. Reinforced Masonry Design. 3 Hours.
Properties of masonry materials and assemblages. Masonry workmanship and quality control. Design of reinforced masonry elements against gravity and lateral loads. Design of masonry connections and joints. Application to 1-and 2-story buildings. Prerequisite: CVEG 4303. (Typically offered: Irregular)

\section*{CVEG 4353. Timber Design. 3 Hours.}

Selection of timber beams, columns, and beam-columns. Physical properties of wood, analysis and design of timber connections. Truss design, glulam members, timber bridge design, treatment for decay, and fire protection. Pre- or Corequisite: CVEG 2113. Prerequisite: CVEG 3303. (Typically offered: Irregular)

CVEG 4413. Pavement Evaluation and Rehabilitation. 3 Hours.
Introduction of concepts and procedures for pavement condition surveys; evaluation by nondestructive and destructive testing; maintenance strategies; rehabilitation of pavement systems for highway and airfields; pavement management systems. Prerequisite: CVEG 4433. (Typically offered: Irregular)

\section*{CVEG 4423. Transportation Infrastructure. 3 Hours.}

Transportation infrastructure includes discussion on the geometric design of roadways, roadway drainage, roadway materials, roadway structural design, and an economic analysis of roadways. This includes the design of horizontal and vertical alignment, cross section, intersections, pavement materials, and structural capacity. Prerequisite: CVEG 3413 and INEG 2413. (Typically offered: Fall and Spring)

CVEG 4433. Transportation Pavements and Materials. 3 Hours.
Study of the engineering properties and behavior of materials commonly used in transportation facilities as they relate to the design and performance of flexible and rigid pavement systems. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CVEG 3132, CVEG 3413, and (INEG 2314 or INEG 3313). (Typically offered: Irregular)
CVEG 4513. Construction Management. 3 Hours.
Introduction to methods and procedures for management of civil engineering construction projects including organization, plans and specs, cost estimating and bidding, project planning and finance, quality control/ assurance, construction safety, cost management, labor issues, change orders, and subcontractor issues. Prerequisite: Senior standing and Civil Engineering majors only. (Typically offered: Fall and Spring)
CVEG 4812. Environmental Design Project. 2 Hours.
Comprehensive engineering design project primarily related to environmental issues. Corequisite: CVEG 4243. (Typically offered: Spring)
CVEG 4822. Geotechnical Design Project. 2 Hours.
Comprehensive engineering design project primarily related to geotechnical issues. Corequisite: CVEG 4143. Prerequisite: CVEG 4303. (Typically offered: Fall)
CVEG 4832. Structural Design Project. 2 Hours.
Comprehensive engineering design project primarily related to structural issues. Corequisite: CVEG 4323. Prerequisite: CVEG 4303 and CVEG 4313. (Typically offered: Spring)

CVEG 4842. Transportation Design Project. 2 Hours.
Comprehensive engineering design project primarily related to transportation issues. Corequisite: CVEG 4423. Prerequisite: CVEG 2002. (Typically offered: Fall)

CVEG 4863. Sustainability in Civil Engineering. 3 Hours.
Qualify and quantify the economic, environmental, societal, and engineering drivers behind sustainability in Civil Engineering. Justification of the feasibility and benefits of sustainability in environmental, geotechnical, structural, and transportation engineering through verbal and written communications. Prerequisite: Senior standing. (Typically offered: Irregular)

\section*{CVEG 488V. Special Problems. 1-6 Hour.}

Special problems. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{CVEG 4890. Fundamentals of Engineering Seminar. 0 Hours.}

Preparation for students taking the Fundamentals of Engineering (FE) examination, administered by the National Council of Examiners for Engineering and Surveying (NCEES). Concept review and problem-solving drills for topics covered on the FE-Civil examination. Prerequisite: Civil Engineering major and senior standing. (Typically offered: Fall and Spring)

CVEG 491VH. Honors Studies in Geotechnical Engineering. 1-6 Hour.
The study of advanced topics in the geotechnical engineering field. May include participation in geotechnical engineering courses normally available only to graduate students. Prerequisite: CVEG 3132 with a grade of C or better. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
CVEG 493VH. Honors Studies in Structural Engineering. 1-6 Hour.
The study of advanced topics in the structural engineering field. May include participation in structural engineering courses normally available only to graduate students. Prerequisite: CVEG 3303 with a grade of C or better. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

CVEG 494VH. Honors Studies in Transportation Engineering. 1-6 Hour. The study of advanced topics in the transportation engineering field. May include participation in transportation engineering courses normally available only to graduate students. Prerequisite: CVEG 3413 with a grade of \(C\) or better. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{CVEG 4983H. Honors Undergraduate Thesis. 3 Hours.}

Thesis research for civil engineering students enrolled in the honors college. Prerequisite: Honors College. (Typically offered: Irregular)

\section*{CVEG 5000. Graduate Seminar in Civil Engineering. 0 Hours.}

A weekly seminar devoted to civil engineering research topics. Appropriate grade to be "S". (Typically offered: Fall and Spring)

\section*{CVEG 5103. Geosynthetic Applications in Civil Engineering. 3 Hours.}

Geosynthetic Applications in Civil Engineering: The functional properties of various geosynthetic materials are defined as they relate to; reinforcement, separation, filtration, and drainage applications. Design procedures are developed for the use of geosynthetics in transportation, environmental and geotechnical applications. Prerequisite: CVEG 3132 and CVEG 3131L or equivalent. (Typically offered: Irregular)

\section*{CVEG 5113. Soil Dynamics. 3 Hours.}

This course covers propagation of stress waves in elastic and inelastic materials, dynamic loading of soils, and stiffness and damping properties of soils. Use of field and laboratory techniques to determine shear wave velocity of soils. Also includes applications of dynamic soil properties in site stiffness characterization, geotechnical earthquake engineering, evaluation of ground improvement, and design of machine foundations. Prerequisite: CVEG 4143 or graduate standing. (Typically offered: Irregular)

\section*{CVEG 5123. Measurement of Soil Properties. 3 Hours.}

Consideration of basic principles involved in measuring properties of soils. Detailed analysis of standard and specialized soil testing procedures and equipment. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CVEG 4143 or graduate standing. (Typically offered: Irregular)

\section*{CVEG 5133. Geotechnical Site Characterization. 3 Hours.}

One of primary tasks of geotechnical engineers is to perform in-situ site characterization for engineering design of foundations, retaining structures, roads, bridges and other infrastructure. This course will focus on in-situ investigations performed for the purpose of collecting detailed site characterization data for direct and/or indirect use in geotechnical design. Specifically, we will study various static (e.g., SPT, CPT, VST, DMT, PMT) and dynamic (e.g., CHT, DHT, SW, GPR) insitu tests used to obtain estimates of stratigraphy, density, strength, stress history, modulus, and permeability of geotechnical materials. We will predominantly focus on site characterization of soil sites, but will mention rock testing and design methods when appropriate. Prerequisite: CVEG 4143 or the equivalent. (Typically offered: Irregular)
CVEG 5143. Transportation Soils Engineering. 3 Hours.
Advanced study of the properties of surficial soils; soil classification systems; pedology; soil occurrence and variability; subgrade evaluation procedures; repeated load behavior of soils; soil compaction and field control; soil stabilization; soil trafficability and subgrade stability for transportation facilities. Prerequisite: CVEG 3132. (Typically offered: Irregular)
CVEG 5153. Earth Retaining Structures. 3 Hours.
This course will focus on the analysis and design of earth retaining structures. Specifically, we will discuss soil and rock property design parameter selection, lateral earth pressures for wall system design, and load and resistance factor design (LRFD) for retaining walls. Wall types discussed include gravity and semigravity walls, modular gravity walls, MSE walls, nongravity cantilever walls and anchored walls, and in-situ reinforced walls. Information on wall system feasibility and selection, construction materials and methods, cost information, and design and performance information will be discussed. Prerequisite: CVEG 4143 or equivalent. (Typically offered: Irregular)

\section*{CVEG 5163. Seepage and Consolidation. 3 Hours.}

Investigation of the flow of water through soils and the time rate of compression of soils. Characterization of the hydraulic conductivity of soils in the field, seepage through earth dams, excavation cut-off walls, and other seepage control systems. Analytical and experimental investigations of soil volume change under hydraulic and mechanical loading. Design of earth and rock dams, well pumping, and vertical and radial consolidation in embankments. Prerequisite: CVEG 4143 or graduate standing. (Typically offered: Irregular)

\section*{CVEG 5173. Advanced Foundations. 3 Hours.}

Study of soil-supported structures. Topics include drilled piers, slope stability, pile groups, negative skin friction, foundation design from the standard penetration test and Dutch cone, and other specialized foundation design topics. Prerequisite: CVEG 4143 or graduate standing. (Typically offered: Irregular)
CVEG 5183. Geo-Environmental Engineering. 3 Hours.
Study of the geotechnical aspects of waste containment systems and contaminant remediation applications. Analysis and measurement of flow of water and contaminants through saturated and unsaturated soils, clay mineralogy and soilchemical compatibility, and mechanical and hydraulic behavior of geomembranes, geotextiles, and geosynthetic clay liners. Design and construction aspects of compacted clay and composite landfill liners, drainage systems, and landfill covers. Prerequisite: CVEG 3132 or graduate standing. (Typically offered: Irregular)

CVEG 5193. Geotechnical Earthquake Engineering. 3 Hours.
This course covers stress wave propagation in soil and rock; influence of soil conditions on seismic ground motion characteristics; evaluation of site response using wave propagation techniques; liquefaction of soils; seismic response of earth structures and slopes. Prerequisite: CVEG 4143 or graduate standing. (Typically offered: Irregular)

\section*{CVEG 5203. Water Chemistry. 3 Hours.}

This course provides a basis for applying principles of physical chemistry to understanding the composition of natural waters and to the engineering of water and wastewater treatment processes. Topics covered include chemical equilibrium (algebraic, graphical, and computer-aided solution techniques); acid-base equilibria and buffering; oxidation and reduction reactions; and solid precipitation and dissolution. Prerequisite: Graduate standing or CVEG 3243 and instructor approval. (Typically offered: Spring)

\section*{CVEG 5213. Advanced Water Treatment Design. 3 Hours.}

Design of industrial and municipal water treatment plants. Discussion of raw and treated water requirements for several uses. Prerequisite: CVEG 3243. (Typically offered: Spring)

CVEG 5233. Microbiology for Environmental Engineers. 3 Hours.
Fundamental and applied aspects of microbiology and biochemistry relating to water quality control, wastewater treatment, and stream pollution. Prerequisite: CVEG 3243. (Typically offered: Irregular)

\section*{CVEG 5243. Groundwater Hydrology. 3 Hours.}

Detailed analysis of groundwater movement, well hydraulics, groundwater pollution and artificial recharge. Surface and subsurface investigations of groundwater and groundwater management, saline intrusion and groundwater modeling will be addressed. Prerequisite: CVEG 3223. (Typically offered: Irregular)

\section*{CVEG 5253. Physical-Chemical Processes for Water and Wastewater} Treatment. 3 Hours.
This course provides a fundamental understanding of physical and chemical processes used in the treatment of drinking water and wastewater. Principals of mass balance are applied to understand the impact of reactor hydraulics (ideal and non-ideal flow) and reaction kinetics on process performance and identify important process variables. Chemical processes covered include disinfection, gas transfer, adsorption, and ion exchange; physical processes covered include coagulation, flocculation, sedimentation, filtration, and membranes. Prerequisite: Graduate standing and instructor consent. (Typically offered: Fall Odd Years)

\section*{CVEG 5273. Open Channel Flow. 3 Hours.}

Open Channel Flow includes advanced open channel hydraulics, flow measurement techniques, a hydrology review, culvert and storm drainage facility design, natural channel classification (fluvial geomorphology) and rehabilitation, computer methods and environmental issues. Prerequisite: CVEG 3213 and CVEG 3223. (Typically offered: Irregular)
CVEG 5293. Water Reuse. 3 Hours.
CVEG 5293 is a graduate-level course that discusses topics related to water reclamation and reuse. Topics include past and current practices of water reuse, health and environmental issues related to water reuse, water technologies and systems for water reuse, and water reuse applications. Prerequisite: CVEG 3243 or equivalent course. (Typically offered: Spring Even Years)

\section*{CVEG 5303. Theory of Stability. 3 Hours.}

Study of structural members subjected to compression. Analysis of compression members considering support conditions and within frame configurations. Analysis of beams considering lateral torsional bucking. AISC Steel Manual strength equations related to columns and beams are derived and discussed. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{CVEG 5313. Matrix Analysis of Structures. 3 Hours.}

Energy and digital computer techniques of structural analysis as applied to conventional forms, space trusses, and frames. Prerequisite: CVEG 3303 or graduate standing. (Typically offered: Irregular)
CVEG 5323. Structural Dynamics. 3 Hours.
Dynamics response of single and multidegree of freedom systems. Modal analysis. Response spectra. Computer programs for dynamic analysis. Design considerations for structures subjected to time-varying forces including earthquake, wind, and blast loads. Prerequisite: CVEG 3303. (Typically offered: Irregular)

\section*{CVEG 5333. Concrete Materials. 3 Hours.}

Topics include portland cement production, supplementary cementing materials, fresh and hardened concrete properties, mixture proportioning, chemical admixtures, curing, and specialty concretes. Corequisite: Lab component. Prerequisite:
CVEG 4303. (Typically offered: Irregular)

\section*{CVEG 5343. Highway Bridges. 3 Hours.}

Economics of spans, current design and construction specifications, comparative designs. Possible refinements in design techniques and improved utilization of materials. Prerequisite: CVEG 4313 and CVEG 4303. (Typically offered: Irregular)

CVEG 5353. Prestressed Concrete Design. 3 Hours.
Analysis and design of prestressed concrete beams. Topics include flexural analysis, prestress bond, draping and debonding, allowable stresses, shear analysis and design, camber prediction, and prestress losses. Prerequisite: CVEG 4303. (Typically offered: Irregular)

\section*{CVEG 5363. Advanced Topics in Reinforced Concrete. 3 Hours.}

Analysis and design of reinforced concrete members. Topics include slender columns, one-way and two-way slab design, strut and tie design, and torsion. Prerequisite: CVEG 4303 or graduate standing. (Typically offered: Irregular)

CVEG 5373. Advanced Structural Steel Design. 3 Hours.
Design of structural steel components using the Load and Resistance Factor Design method. Intensive treatment of simple and eccentric connections, composite construction, plate girders, and plastic analysis and design. Prerequisite: CVEG 4313 or graduate standing. (Typically offered: Irregular)
CVEG 5383. Finite Element Methods in Civil Engineering. 3 Hours.
An understanding of the fundamentals of the finite element method and its application to structural configurations too complicated to be analyzed without computer applications. Application to other areas of civil engineering analysis and design such as soil mechanics, foundations, fluid flow, and flow through porous media. Prerequisite: Graduate standing. (Typically offered: Irregular)

CVEG 5393. Advanced Strength of Materials. 3 Hours.
The course will continue from the basic material addressed in the undergraduate course and investigate in more detail stress analysis as it pertains to civil engineering type problems. Topics addressed in the course will include stress analysis (two-dimensional), constitutive relationships, solutions for two-dimensional problems, flexure, torsion, beams on elastic foundations, and energy methods. Prerequisite: CVEG 2023 or MEEG 3013. (Typically offered: Irregular)

CVEG 5413. Transportation and Land Development. 3 Hours.
Study of interaction between land development and the transportation network. Application of planning, design, and operational techniques to manage land development impacts upon the transportation system, and to integrate land layout with transportation network layout. Prerequisite: Graduate standing. (Typically offered: Irregular)

CVEG 5423. Structural Design of Pavement Systems. 3 Hours.
An introduction to the structural design of pavement systems including: survey of current design procedures; study of rigid pavement jointing and reinforcement practices; examination of the behavioral characteristics of pavement materials and of rigid and flexible pavement systems; introduction to structural analysis theories and to pavement management concepts. Prerequisite: CVEG 4433. (Typically offered: Irregular)

CVEG 5433. Traffic Engineering. 3 Hours.
A study of both the underlying theory and the use of traffic control devices (signs, traffic signals, pavement markings), and relationships to improved traffic flow and safety, driver and vehicle characteristics, geometric design, and societal concerns. Also includes methods to collect, analyze, and use traffic data. Prerequisite:
CVEG 3413 or graduate standing. (Typically offered: Irregular)

CVEG 5443. Data Analysis and Machine Learning. 3 Hours.
The purpose of this course is to provide students with a solid background in the application of common statistical/econometric analysis techniques and related statistical modeling. This course emphasizes the empirical application of statistical techniques, but underlying theories and their limitations will also be discussed and simple derivations will be performed in class. The class will focus on applications of modeling techniques through the use of technical computing software including Matlab and KNIME. Students from all areas of engineering and other broad disciplines are welcome. Prerequisite: Graduate Standing. (Typically offered: Spring)

\section*{CVEG 5453. Production and Construction of Pavement. 3 Hours.}

The life cycle of a pavement can be seen in five stages: 1) material selection, 2) structural design, 3) production and construction, 4) the life of the pavement, and 5) the end of the pavement's life. This course will focus on the production and construction of pavement, but will provide a brief overview of the first, second, fourth, and fifth stages as well. Three different types of pavements will be explored: 1) unbound granular material, 2) flexible pavement (asphalt concrete), and 3) rigid pavement (Portland cement concrete). Prerequisite: Graduate Standing. (Typically offered: Irregular)

\section*{CVEG 5463. Transportation Modeling. 3 Hours.}

The use of mathematical techniques and/or computer software to model significant transportation system attributes. May compare model results with actual measured traffic attributes, using existing data sources and/or collecting and analyzing field data. Pre- or Corequisite: Lab component. Prerequisite: Graduate standing. (Typically offered: Irregular)

CVEG 5473. Transportation System Characteristics. 3 Hours.
Introduction to the fundamentals of traffic engineering and transportation networks. In the first part, students will become familiar with traffic engineering studies, traffic flow theory, traffic control devices, traffic signals, capacity, and level of service analysis of freeways and urban streets. The second part of this course will introduce the basic concepts of transportation network analysis and explore some applications. Prerequisite: CVEG 3413 or graduate standing. (Typically offered: Irregular)

CVEG 5493. Pavement Maintenance and Rehabilitation. 3 Hours.
The life cycle of a pavement can be seen in five stages: 1) material selection, 2) structural design, 3) production and construction, 4) the life of the pavement, and 5) the end of the pavement's life. This course will focus on the life of roadway pavements and the end of the pavement's life, but will provide a brief overview of the first, second, and third stages as well. Three different types of pavements will be explored:1) unbound granular material, 2) flexible pavement (asphalt concrete), and 3 ) rigid pavement (Portland cement concrete). Prerequisite: Graduate Standing. (Typically offered: Irregular)

\section*{CVEG 5503. Construction Safety. 3 Hours.}

Construction industry safety management systems, practices, and research to prevent injuries on work sites. Roles, responsibilities, and interaction of construction industry participants in safety management. OSHA organization, regulation framework, and resources. Safety program procedures and practices associated with positive safety performance outcomes. Total cost of injuries to include personal, direct/indirect costs, and workers compensation insurance. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer)

CVEG 5513. Construction Scheduling. 3 Hours.
Develop an understanding of modern scheduling techniques used for the management of construction projects. Learn the underlying logical principles calculation methods, and presentation formats for PDM, the most prevalent technique. Load schedules with resources and costs to enable leveling, smoothing, and earned value analysis. Learn to update schedules for actual progress, identify problems, and compress or crash activities. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer)

\section*{CVEG 5523. Construction Productivity. 3 Hours.}

This course introduces the student to construction industry productivity measurement, management practices, planning processes, and work methods to improve labor productivity on project sites. Factors that influence labor productivity such as resource supply chain, rework, changes, craft labor motivation, and the workface environment are included. Roles, responsibilities, and interaction of construction industry participants in productivity management will be examined. Participants will learn construction productivity improvement program tools associated with improved productivity performance including work sampling and activity analysis. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer)

CVEG 5533. Legal Aspects of Construction. 3 Hours.
Students will identify legal issues in the course of a construction project and learn to determine when and where they or their employers or clients need legal advice. The course covers the most common legal considerations and disputes that arise in the construction and design industries from the perspectives of different industry participants, and it explores the most important contractual terms commonly used in construction industry agreements. The individual lessons address basic aspects of the legal system, liability for negligence and professional malpractice, and a full range of legal risk allocation and risk management strategies, relating to: bidding and proposal practices; project delivery systems; contracting practices; insurance; surety bonds; pricing, scheduling, and payment disputes; contract administration; legal remedies; and alternative dispute resolution methods. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer)

\section*{CVEG 5543. Sustainability in Construction Management. 3 Hours.}

Sustainability in Construction Management will explore traditional concepts of construction management through the lens of sustainability. Topics covered will include elements of sustainable design and construction, sustainable project requirements and management, choosing materials and production, sustainability design and construction economics, understanding specifications, community participation, waste management, regulatory agencies, and worker safety and roles. These topics will be viewed through the lens of the three pillars of sustainability: economics, environmental, and social. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer)

CVEG 5553. Risk and Financial Management in Construction. 3 Hours.
This course prepares students to understand the differences between financial management in a construction company versus financial management in other industries. The course will also teach students how to account for a construction company's financial resources. The students will then learn how to quantitatively analyze financial decisions. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

\section*{CVEG 5563. Building Information Modeling (BIM) for Design and Construction.} 3 Hours.
This course provides students with a comprehensive overview of building information modeling (BIM) within the context of multiple project delivery methods and from the different perspectives of owners, architects/engineers and contractors/ subcontractors. The course includes "hands-on" experiences using BIM software (Autodesk Revit) and will provide students with a basic working knowledge of the software. The curriculum also covers a systems perspective of how BIM works in different contractual relationships and workflows. Finally, the course will provide students with an understanding of how to implement BIM for companies that have not already done so. The course culminates with a student-modeled project in BIM, in conjunction with a real-world example in how your company can implement BIM. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

\section*{CVEG 5573. Construction Project Management. 3 Hours.}

Construction project management introduces students to the full life cycle of construction projects from feasibility through completion and commissioning. Students are given an overview of the diverse construction industry, general project management concepts, and the specific application of those principles to complete construction projects. Standard construction industry processes and procedures such as cash flow and payment scheduling, change orders, project acceleration, coordination and communication, record keeping are depicted. Prerequisite: Graduate Standing. (Typically offered: Spring)

CVEG 5583. Heavy Construction Equipment Management. 3 Hours.
The course covers estimating equipment ownership, operating cost, and how to determine economic life and replacement policy as well as how to schedule a production-driven, equipment-intensive project that achieves target production rates and meets target equipment-related unit costs and profits. The course will cover material selection based on productivity and OSHA safety regulations. While this class is in the heavy civil track within the department, both horizontal and vertical construction equipment will be discussed. Prerequisite: Graduate Standing. (Typically offered: Summer)

\section*{CVEG 5593. Cost Management: Ownership. 3 Hours.}

Study of cost management procedures applicable to the building process from the conceptual phase through owner operations, including conceptual estimating, converting estimates to budgets, progress measurement, project cost analysis and control, value engineering, and life-cycle costing. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

CVEG 5603. Advanced Building Information Modeling (BIM) for Design and Construction. 3 Hours.
This course will cover the fundamental principles and practices of using building information models for model management, including quantification, scheduling, and coordination. The course will also present the use of advanced information systems in the construction context, such as parametric modeling, creating infrastructure models, and reality capture. The goal of this course is to develop the students' understanding of how cloud-connected tools, collaboration tools, and advanced construction technologies can transform and improve the construction management process to aid in project success. Prerequisite: Must be a student in the CSMG masters degree program. (Typically offered: Fall and Summer)

CVEG 562V. Independent Study. 1-6 Hour.
Fundamental and applied research. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

CVEG 563V. Special Problems. 1-6 Hour.
Special problems in CVEG. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

CVEG 5703. Environmental Regulations and Permits. 3 Hours.
The purpose of this course is to introduce students to selected environmental regulations, Federal and State Agencies and to present an overview of the Permitting Process. The course primarily addresses NPDES wastewater and storm water rules and requirements but will also touch on Air Quality, Environmental Impact and impact statements as well as OSHA regulations. This course covers compliance and how you attain compliance. Prerequisite: Graduate standing and Department consent. (Typically offered: Fall and Spring)

CVEG 5713. Low Impact Development. 3 Hours.
To understand the purposes and aspects of low impact design and to apply LID principles to storm water management and site development. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer)

CVEG 5863. Fundamentals of Sustainability in Civil Engineering. 3 Hours.
Qualify and quantify the economic, environmental, societal and engineering drivers behind sustainability in Civil Engineering. Justification of the feasibility and benefits of sustainability in environmental, geotechnical, structural and transportation through verbal and written communications. Students cannot receive credit for both CVEG 4863 and CVEG 5863. Prerequisite: Graduate standing or instructor consent. (Typically offered: Irregular)
CVEG 5903. Seismic Steel Building Design. 3 Hours.
The aim of this course is to give students the ability to analyze and design steel systems and components for extreme lateral loads induced by earthquakes. Focus will be placed on: basic theory of dynamic response and application of seismic design provisions; understanding of lateral load paths in structural steel systems; and the analysis and design of common steel seismic systems and components. Prerequisite: Graduate standing and Department consent. (Typically offered: Irregular)

\section*{CVEG 5913. CFD for Wind Engineering. 3 Hours.}

The goal of this course is to apply the Computational Fluid Dynamics (CFD) method to wind engineering problems. This is a unique class which needs an understanding of basic fluid mechanics, numerical techniques, wind engineering, turbulence, structural dynamics, fluid structure interaction (FSI) effect etc. Only an introduction to CFD is made using 1D, 2D and 3D problems. The course concludes with a brief discussion on advanced topics. Prerequisite: Graduate Standing. (Typically offered: Irregular)

CVEG 5953. Fundamentals of Fracture and Fatigue in Structures. 3 Hours.
The course will cover the concepts of linear-elastic, elastic-plastic and timedependent Fracture Mechanics as applied to fracture in a variety of materials, structures, and operating conditions. The examples will include fracture in large components such as aircraft, bridges and pressure vessels and also in bones and in soft materials and human tissue. Prerequisite: Graduate standing in Civil, Mechanical or Biomedical Engineering or consent of the instructor. (Typically offered: Fall)
This course is cross-listed with BMEG 5953, MEEG 5953.
CVEG 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

CVEG 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Classical Studies (CLST)}

\section*{Courses}

CLST 1003. Introduction to Classical Studies: Greece. 3 Hours.
An introduction to the world of Ancient Greece, from the Trojan War to Alexander the Great. Progresses chronologically, focusing on the literary, artistic, political, and philosophical ideas of the Greeks. Who were they and how are we like them? (Typically offered: Fall Odd Years)

CLST 1003H. Honors Introduction to Classical Studies: Greece. 3 Hours. Honors. Prerequisite: Honors candidacy. (Typically offered: Fall Odd Years) This course is equivalent to CLST 1003.

CLST 1013. Introduction to Classical Studies: Rome. 3 Hours.
A multi-faceted introduction to Roman culture, focusing on the literature, philosophy, architecture, history, art and archeology. Source material to be read in English. Lectures liberally illustrated with slides. (Typically offered: Spring Even Years)

\section*{CLST 2013. Sport in Ancient Greece and Rome. 3 Hours.}

Explores the meaning of ancient sport in its Greek and Roman contexts as well as the reception and transformation of these cultural meanings in sports today. Includes a look at sports outside Western traditions, focusing especially on indigenous forms of sport in the Americas. Prerequisite: ENGL 1023 or equivalent. (Typically offered: Fall)

\section*{CLST 2323. Greek and Roman Mythology. 3 Hours.}

A study of the stories, figures, and motifs in the mythology of Greece and Rome. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Irregular)

\section*{CLST 3003. Special Topics in Classical Studies. 3 Hours.}

Close examination of subject matter not presented in regularly offered CLST courses. May be repeated for different topics. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
CLST 3003H. Honors Special Topics in Classical Studies. 3 Hours.
Close examination of subject matter not presented in regularly offered CLST courses. May be repeated for different topics. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is equivalent to CLST 3003.

CLST 3013. Sex(uality) \& Gender in Ancient Greece and Rome. 3 Hours. Introduces the constructions and representations of love, sex, gender, and sexuality in ancient Greece and Rome by looking at their poetry, prose, and material culture. Explores the diversity of ancient thought on these issues and compares ideas of love and desire to contemporary cultural views. (Typically offered: Irregular)

\section*{CLST 3013H. Honors Sex(uality) \& Gender in Ancient Greece and Rome. 3} Hours.
Introduces the constructions and representations of love, sex, gender, and sexuality in ancient Greece and Rome by looking at their poetry, prose, and material culture. Explores the diversity of ancient thought on these issues and compares ideas of love and desire to contemporary cultural views. Prerequisite: Honors standing. (Typically offered: Irregular)
This course is equivalent to CLST 3013.
CLST 3023. Ancient Greek and Roman Theatre. 3 Hours.
Explains what went on in performance spaces, how such performances reflected the ideas and social constructs of the times, and what such observations can teach us about human interactions, history, and attitudes. (Typically offered: Irregular)

\section*{CLST 3033. Non-Binary Rome. 3 Hours.}

Suspends the assumption of a binary Rome and explores the consequences for how we interpret Roman lives, using a wide range of evidence and theory to pursue the possibility of a non-binary Rome. Prerequisite: ENGL 1013 and ENGL 1023, or equivalent. (Typically offered: Irregular)

\section*{CLST 399VH. Honors Course Classical Studies. 1-6 Hour.}

CLST honors thesis projects or CLST honors study abroad programs. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{CLST 4003H. Honors Classical Studies Colloquium. 3 Hours.}

Covers a special topic or issue in classical studies. Appropriate for honors program students and students pursuing classical studies. May be repeated when the content is changed. Prerequisite: Junior standing. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

\section*{CLST 4413. Greek Art and Archaeology. 3 Hours.}

Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.) from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. (Typically offered: Spring; Summer Odd Years)
This course is cross-listed with ARHS 4413.

\section*{CLST 4413H. Honors Greek Art and Archaeology. 3 Hours.}

Greek Art and Archaeology focuses on how visual and material culture shaped and were shaped by Greek society (religion, politics, military, economy, gender, etc.) from the Bronze Age through the Hellenistic period. Masterpieces of Greek art are analyzed alongside the material remains of everyday Greeks in civic and domestic spaces. (Typically offered: Spring; Summer Odd Years)
This course is cross-listed with CLST 4413, ARHS 4413.
CLST 4423. Roman Art and Archaeology. 3 Hours.
Roman Art and Archaeology focuses on how visual and material culture shaped and were shaped by Roman society (religion, politics, economy, gender, ethnicity, etc.) from the Iron Age through the Late Antique period. We encounter famous masterpieces, but also the material remains of everyday Romans in civic and domestic spaces. (Typically offered: Spring and Summer Even Years) This course is cross-listed with ARHS 4423.

\section*{Clinton School of Public Service (CSPS)}

\section*{Communication (COMM)}

\section*{Courses}

COMM 1003. Basic Course in the Arts: Film Lecture. 3 Hours.
Introduction to film as entertainment and art. How to look at film through a study of composition, lighting, editing, sound and acting. Lectures and viewing time. (Typically offered: Fall, Spring and Summer)

COMM 1003H. Honors Basic Course in the Arts: Film Lecture. 3 Hours. Introduction of film as entertainment and art. How to look at a film through a study of composition, lighting, editing, sound and acting. Lectures and viewing time. Corequisite: Drill component. (Typically offered: Fall) This course is equivalent to COMM 1003.

\section*{COMM 1023. Communication in a Diverse World. 3 Hours.}

Introductory course that focuses on the skills and understandings associated with competent communication in a diverse society within interpersonal, group, organizational and intercultural communication contexts. (Typically offered: Fall and Spring)

COMM 1023H. Honors Communication in a Diverse World. 3 Hours. Introductory course that focuses on the skills and understandings associated with competent communication in a diverse society within interpersonal, group, organizational and intercultural communication contexts. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to COMM 1023.

\section*{COMM 1233. Media, Community and Citizenship. 3 Hours.}

Examines theory and research on how messages are processed, meanings constructed, communities formed and maintained through interaction with the media. Focus is on critical citizenship and media literacy in the context of the cognitive, social, cultural, political, and economic consequences of increasingly networked media systems. (Typically offered: Fall and Spring)

COMM 1233H. Honors Media, Community and Citizenship. 3 Hours.
Examines theory and research on how messages are processed, meanings constructed, communities formed and maintained through interaction with the media. Focus is on critical citizenship and media literacy in the context of the cognitive, social, cultural, political, and economic consequences of increasingly networked media systems. Prerequisite: Honors standing. (Typically offered: Spring) This course is equivalent to COMM 1233.

COMM 1313. Public Speaking (ACTS Equivalency \(=\) SPCH 1003). 3 Hours. Application of the communication techniques needed to organize and deliver oral messages in a public setting. Emphasis given to theory and practice of message strategies and preparation, audience analysis, presentational skills including multimedia support, speech criticism, and the listening process. (Typically offered: Fall, Spring and Summer)

COMM 1313H. Honors Public Speaking. 3 Hours.
Application of the communication techniques needed to organize and deliver oral messages in a public setting. Emphasis given to theory and practice of message strategies and preparation, audience analysis, presentational skills including multimedia support, speech criticism, and the listening process. (Typically offered: Fall, Spring and Summer)
This course is equivalent to COMM 1313.
COMM 2103. Interviewing. 3 Hours.
A study in the theory and practice of methods in selected interview settings, with an emphasis on interviewing through research, journalism, employment, and historical perspectives. (Typically offered: Fall)

\section*{COMM 2303. Advanced Public Speaking. 3 Hours.}

Continuing study of the invention and adaptation or oral discourse to the needs of listeners. Consideration of the problems of communication in platform presentation. Prerequisite: COMM 1313. (Typically offered: Fall, Spring and Summer)

\section*{COMM 2323. Interpersonal Communication. 3 Hours.}

Personal and interpersonal factors affecting communication in everyday life. Emphasis upon ways in which interpersonal perception, physical environment, semantic choices, and nonverbal cues affect communication primarily in the context of work, family, and other personal experiences. (Typically offered: Fall, Spring and Summer)

COMM 2333. Introduction to Communication Research. 3 Hours.
Introduction to the basic assumptions underlying communication inquiry; resources for and methods of data collection in communication research; and techniques for organization, interpretation, reporting, and evaluation of communication research. (Typically offered: Fall and Spring)

COMM 2343. Introduction to Small-Group Communication. 3 Hours.
An introduction to procedures used in exchanging information, solving problems, determining policies, and resolving differences in committees and other small groups. Prerequisite: COMM 1313. (Typically offered: Fall, Spring and Summer)

COMM 2353. Argumentation and Advocacy. 3 Hours.
An introduction to argumentation theory and practice, with concern for analyzing and producing logical, effective, and ethical public discourse. Examines contemporary models for analyzing argument, covers the common types of arguments and ways to evaluate their strengths and weaknesses, and introduces ways to test arguments for validity and fallacies. (Typically offered: Fall and Spring)

COMM 2613. Nonverbal Communication. 3 Hours.
Creates an understanding of the functions of nonverbal cues operating in human communication processes and develops familiarity with recent research in the field of nonverbal communication. (Typically offered: Irregular)

COMM 2813. Introduction to Mediated Communication. 3 Hours.
Introduction to media and media industries, particularly the social and cultural impact of their economic and regulatory structures. Emphasis on the historical development of media, business practices of media organizations, critical analysis of media messages, and cultural functions of the media. (Typically offered: Fall and Spring)

COMM 298V. Topics in Communication. 1-3 Hour.
Topics in communication not represented in other lower division courses. Prerequisite: Completion of at least 3 hours of COMM coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{COMM 3153. Visual Communication. 3 Hours.}

An examination of visual communication with emphasis on the understanding, manipulation, and effects of these messages on individuals and society. Explores visual messages in contexts such as film, television, advertising, social media, and the Internet by incorporating humanistic and social science theory and research. Prerequisite: COMM 2813. (Typically offered: Spring)

COMM 3173. Introduction to Linguistics. 3 Hours.
Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, and the history of linguistic scholarship. Prerequisite: Junior standing, COMM 1313 and COMM 2333. (Typically offered: Irregular)
This course is cross-listed with ENGL 3173, WLLC 3173.

\section*{COMM 3253. The Latinx Image in Media. 3 Hours.}

Exploration of the image and experience(s) of Latinx populations in the United States as represented in visual and print media, including film, television, news journalism, and art. Topics related to US Latinx history, culture, politics, and socioeconomics will be examined in the analyses of these mediated depictions. Prerequisite: COMM 1003. (Typically offered: Irregular)
This course is equivalent to ENGL 3253.
COMM 3263. African Americans in Film. 3 Hours.
A survey of the history of images of African Americans in film, especially as these images are examined in the context of stereotypical renditions and/or realistic representations of African American experiences. Issues of African American history, culture, and socio-political context will be addressed in the analyses of these films. Prerequisite: COMM 1003. (Typically offered: Irregular)
This course is cross-listed with AAST 3263, ENGL 3263, JOUR 3263.
COMM 3273. African Americans in Documentary Film. 3 Hours.
Exploration of the African-American image and experience in the context of time, historical record and varying production viewpoints from diverse documentarians. African-American history, culture and socio-political context are addressed in the analyses of these documentary films from the perspectives of mainstream media, independent filmmakers and minority documentarians Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is cross-listed with JOUR 3273, AAST 3273.

\section*{COMM 3283. U.S. Latinos and Latinas through Film. 3 Hours.}

This course will examine the portrayal of U.S. Latinos and Latinas in Hollywood films and how those images have changed over time. While coverage will extend to the early years of the twentieth century, the chosen films will place particular emphasis on the century's second half, from the Cold War to the modern day. (Typically offered: Spring)
This course is cross-listed with HIST 3283, LALS 3283.
COMM 3343. Contemporary Communication Theory. 3 Hours.
Study of the nature of the communication process as it is reflected in the individual, in interpersonal settings, in one-to-many situations, and in the mass media. Prerequisite: COMM 2323. (Typically offered: Spring)

\section*{COMM 3373. Leadership Communication. 3 Hours.}

An analysis of leadership as a discursive process, focusing on how leadership emerges and is enacted on a daily basis through communication-related behaviors. Prerequisite: COMM 2343 or permission of instructor. (Typically offered: Irregular)

\section*{COMM 3383. Persuasion. 3 Hours.}

Introduction to theories of persuasion with emphasis on application and effect. Prerequisite: COMM 1313 and COMM 2333, or instructor permission. (Typically offered: Fall, Spring and Summer)

\section*{COMM 3423. Science Fiction Film. 3 Hours.}

This class concentrates on how science fiction in various communication media influences and is, in turn, influenced by broad features of cultural life. The class considers the impact of science fiction on science fact, the military, space travel, religion, race, gender, social class, education, politics, technology, and fashion styles. Prerequisite: COMM 1003. (Typically offered: Fall)

\section*{COMM 3433. Family Communication. 3 Hours.}

Study of the nature, functions, and management of communication patterns in the family. Focus is on understanding routine interpersonal interactions, conflict patterns, authority structures, and decision-making processes within the context of the contemporary family. Prerequisite: COMM 2323. (Typically offered: Fall)
COMM 3443. Introduction to Rhetorical Theory. 3 Hours.
Interpretive-critical study of rhetoric in public contexts. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Fall)

\section*{COMM 3503. Popular Communication and Culture. 3 Hours.}

This course is an introduction to basic theories and topics of Popular Communication and Culture studies. The course will emphasize understanding popular media communication forms. Prerequisite: COMM 2813. (Typically offered: Summer)

COMM 3673. Mediated Communication. 3 Hours.
Focuses on media messages and their social/cultural effects. Includes a critical examination of media institutions and the ways they vie for audiences. Other topics include the ways people construct meaning from messages, media's influence on attitudes, media's role in cultural life, and audiences as critical consumers of media. Prerequisite: COMM 2813. (Typically offered: Fall)

COMM 3703. Organizational Communication. 3 Hours.
An introduction to the theory, processes, and management of communication in organizations, with opportunities for simulated application. Prerequisite: COMM 2343. (Typically offered: Fall)

\section*{COMM 3763. Health Communication. 3 Hours.}

Examines communication within health care organizations and teams. Issues may include patient-provider communication, communication among health care professionals, negative consequences of poor communication in health care delivery, and the use of technology in health-related information dissemination and campaigns. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Fall)

\section*{COMM 3803. Survey of Social Media. 3 Hours.}

Surveys research on social media, focusing on the potential cognitive, social, cultural, political, and/or economic consequences of social media and on strategies for engaging with and through social media to promote personal, social and civic goals. Pre- or Corequisite: COMM 2813. (Typically offered: Spring)

\section*{COMM 3883. Rhetoric of Social Movements. 3 Hours.}

Study of the functions of rhetoric as it appears in the context of social movements such as American independence, women's equality, civil rights, populism, and new conservatism. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Irregular)

\section*{COMM 3923H. Honors Colloquium. 3 Hours.}

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in communication). (Typically offered: Irregular) May be repeated for degree credit.
COMM 3933. Special Topics in Film Studies. 3 Hours.
Topics in film studies which are not usually presented in depth in regular courses. Prerequisite: COMM 1003. (Typically offered: Irregular) May be repeated for degree credit.

COMM 3943. Special Topics in Interpersonal Communication. 3 Hours.
Topics in interpersonal communication which are not usually presented in depth in regular courses. Prerequisite: COMM 2323. (Typically offered: Irregular) May be repeated for degree credit.

\section*{COMM 3953. Special Topics in Mediated Communication. 3 Hours.}

Topics in mediated communication which are not usually presented in depth in regular courses. Prerequisite: COMM 2813. (Typically offered: Irregular) May be repeated for degree credit.
COMM 3963. Special Topics in Organizational Communication. 3 Hours.
Topics in organizational communication which are not usually presented in depth in regular courses. Prerequisite: COMM 2343. (Typically offered: Irregular) May be repeated for degree credit.

COMM 3973. Special Topics in Rhetoric and Public Communication. 3 Hours. Topics in rhetoric and public communication which are not usually presented in depth in regular courses. Prerequisite: COMM 2353. (Typically offered: Irregular) May be repeated for degree credit.
COMM 3983. Special Topics. 3 Hours.
Communication topics which are not usually presented in depth in regular courses. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
COMM 3983H. Honors Special Topics. 3 Hours.
Communication topics which are not usually presented in depth in regular courses. Prerequisite: COMM 1313, COMM 2333 and honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to COMM 3983.
COMM 3991H. Honors Course in Communication Research. 1 Hour.
The Honors Course in Communication is the student's first step toward developing an honors thesis project. The course is designed to facilitate the exploration of potential thesis topics, selection of a viable study for the thesis, and the conceptualization of that study. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)

\section*{COMM 4103. Communicating Body Image. 3 Hours.}

This course examines the hidden assumptions about body image as it relates to the intersections of race, class, gender, and other major identity markers. This course is designed a) to facilitate the acquisition of systematic knowledge by applying theories to critically analyze media images and messages, b) to stimulate student interest in feminist media studies as an academic discipline, and c) to promote body neutrality of self and diverse others in a media-saturated society. Prerequisite: COMM 2813. (Typically offered: Fall)
This course is cross-listed with AAST 4103.

\section*{COMM 4113. Legal Communication. 3 Hours.}

Examines communication processes in the legal environment and focuses on communication skills and behaviors among judges, attorneys, litigants, and jurors. Particular attention will be given to verbal strategies and nonverbal messages related to interviews, negotiation, mediation, and litigation and to the rhetorical functions of legal pleadings and judicial opinions. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Irregular)

\section*{COMM 4143. American Film Survey. 3 Hours.}

A survey of major American film genres, major directors and films that have influenced the development of motion pictures. Prerequisite: COMM 1003 or permission of instructor. (Typically offered: Fall)
This course is cross-listed with ENGL 4143.

\section*{COMM 4283. Communication in Contemporary Society. 3 Hours.}

An examination of research and theory on the process and effects of communication in modern society. Prerequisite: COMM 1313 and COMM 2333 or permission of instructor. (Typically offered: Irregular)
COMM 4323. Communication and Conflict. 3 Hours.
Study of the processes, effects, and managements of communicative conflict, including a consideration of conflict styles, power, goals, tactics, assessment, selfintervention and third-party intervention. Prerequisite: COMM 2323 or permission of instructor. (Typically offered: Fall)

COMM 4333. Communication and Gender. 3 Hours.
Study of the nature, construction, functions, and effects of gender and genderrole stereotypes related to verbal and nonverbal communication, small-group and organizational interaction, and mass mediated images in contemporary culture. Prerequisite: COMM 2323 or permission of instructor. (Typically offered: Fall)

COMM 4343. Intercultural Communication. 3 Hours.
Study of intercultural communication skills, intercultural issues and their impact at home and abroad, and cross-cultural comparisons of communication phenomena from a variety of theoretical perspectives. Prerequisite: COMM 2323. (Typically offered: Spring)

\section*{COMM 4353. American Public Address. 3 Hours.}

Historical and critical study of the leading American speakers, their speeches, the issues with which they were identified. Lectures, discussion, reports, and critical papers. Prerequisite: COMM 1313 or COMM 2353 or instructor permission. (Typically offered: Irregular)

\section*{COMM 4363. Gender, Race and Power. 3 Hours.}

Examines how communication shapes gender, race, sexuality, and power. Rather than focusing exclusively on interpersonal communication, this course looks at theories of power that shape institutional macro communication. Prerequisite: COMM 2353. (Typically offered: Irregular)
This course is cross-listed with AAST 4863.
COMM 4373. Political Communication. 3 Hours.
Study of the nature and function of the communication process as it operates in the political environment. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Spring Even Years)
This course is cross-listed with PLSC 4373.
COMM 4383. Rhetoric of the Modern American Presidency. 3 Hours.
A study of the increasing reliance of contemporary presidents on public persuasion through rhetorical discourse. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Irregular)
COMM 4393. Freedom of Speech: Cases \& Issues. 3 Hours.
Study of philosophy, cases, and issues relevant to the first amendment right to the free expression, with focus on issues relevant to internal security, obscenity, pornography, slander, and the regulation of communication. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Irregular)
COMM 4423. Disaster and Risk Communication. 3 Hours.
Examines the role of public communication efforts across all phases of a disaster with an emphasis on the use of risk communication theory to inform disaster preparedness campaign message design and response to media inquiries immediately following disasters. Prerequisite: COMM 2343 or instructor consent. (Typically offered: Fall and Spring)

\section*{COMM 4433. Community Resilience. 3 Hours.}

Explores communication systems, community relationships, and strategic communication processes that constitute community resilience. Introduces various methodological approaches to assessing community resilience in order to develop communication-based interventions that promote belonging, transformative potential, and social capital. Prerequisite: COMM 2343 or instructor permission. (Typically offered: Fall)

\section*{COMM 4613. Rhetoric of American Women. 3 Hours.}

Examines the social and cultural assumptions that have limited the role of women in public communication. Focus is on the rhetorical biographies of selected women and their arguments on important social and political issues. Prerequisite: COMM 1313 or COMM 2353. (Typically offered: Irregular)

\section*{COMM 4633. History and Development of International Film I. 3 Hours.}

A critical survey of international film as a distinctive art form and as a medium of expression and communication with attention given to films and cinema from its origins to 1975. Prerequisite: COMM 1003. (Typically offered: Irregular)

\section*{COMM 4643. Environmental Communication. 3 Hours.}

Explores how communication is used by individuals, corporations, and governments to shape public debates about environmental issues. Topics include rhetorical strategies, the publics' right to information and input, dispute resolution techniques, advocacy campaigns, and green marketing. Prerequisite: COMM 1313 and COMM 2333 or permission of instructor. (Typically offered: Spring)

COMM 4653. International Film II. 3 Hours.
A critical survey of international film as a distinctive art form as a medium of expression and communication with attention given to films and cinema from 1976 to the present. Prerequisite: COMM 1003. (Typically offered: Irregular)

\section*{COMM 4683. Documentary Film. 3 Hours.}

A study and analysis of the documentary film as a discrete film form and as an important contribution to the international cinematic scene. Prerequisite: Advanced standing. Prerequisite: COMM 1003. (Typically offered: Fall)

\section*{COMM 4733. Reel Women. 3 Hours.}

An examination of films made for, about, and/or by women with the aim of better understanding and centralizing issues pertinent to women's daily lives. Prerequisite: COMM 1003. (Typically offered: Fall)

\section*{COMM 4743. Representational Issues in Film. 3 Hours.}

An examination of the varying ways that race and ethnicity, gender, sexual orientation, gender identity, class, (dis)ability, and age are represented in and by film - both historically and culturally. Prerequisite: COMM 1003. (Typically offered: Spring)

\section*{COMM 4763. Health Communication Campaigns. 3 Hours.}

Canvasses the theoretical frameworks used in the conceptualization of communication campaigns focused on health information dissemination and the purposes these campaigns serve. Students participate in a service learning project by defining campaign goals; identifying, segmenting, and assessing target audiences; and designing messages for multi-mediated health campaigns. (Typically offered: Spring Odd Years)

\section*{COMM 4773. Treatment of Native Americans in Film. 3 Hours.}

This course compares the treatment of Native Americans in film with how representatives of this group identify themselves. Particular attention is paid to how motion pictures focusing on Native Americans produced by indigenous filmmakers compare to treatments of this people produced by Hollywood and others. Prerequisite: COMM 1003 or instructor consent. (Typically offered: Irregular)

COMM 4803. Seminar in Social Media. 3 Hours.
This class encourages in depth examination of contemporary theory and research on the potential effects of social media on cognitive, social, cultural, political, affective, and economic structures. Focus is on critical thinking and contextualization of social media. Pre- or Corequisite: COMM 2813. (Typically offered: Spring Even Years)

COMM 4823. Children and Media. 3 Hours.
An in-depth examination of children's use of media and the effects of media content on child and adolescent development. Topics may include violence and sex in media, commercialism, and new media. Prerequisite: COMM 2813. (Typically offered: Spring Odd Years)

\section*{COMM 4843. Computer-Mediated Communication. 3 Hours.}

Provides an in depth consideration of the nature of computer-mediated communication by examining its use and effects in interpersonal, work, educational, and societal contexts. Prerequisite: COMM 2813 or instructor permission. (Typically offered: Spring)

COMM 4863. Seminar in Media. 3 Hours.
Research/discussion of contemporary issues in media. Emphasis on the economic and social impact of advertising, news, censorship, programs directed toward children, portrayals of women and minorities, future trends in media technologies, and analysis of the changing media landscape. Prerequisite: COMM 2813 or instructor permission. (Typically offered: Spring)

COMM 4873. International Communication and Globalization. 3 Hours.
Examines aspects of international communication and the impact of globalization on the production, dissemination, and consumption of media technology and messages. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Irregular) This course is cross-listed with INST 4873.

COMM 4883. Television and American Culture. 3 Hours.
Historical and critical study of how television shapes American culture and is shaped by it. Attention will be given to the study of television history, programs and audiences; particularly how race and gender shape content and reception of programming. Prerequisite: COMM 2813. (Typically offered: Fall)

COMM 490V. Special Problems. 1-6 Hour.
Credit arranged. Prerequisite: COMM 2333 and at least 9 hours of COMM coursework. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{COMM 4913. Internship in Communication. 3 Hours.}

Internship in applied communication within public and private organizations. Prerequisite: COMM 1313 and COMM 2333. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

COMM 499VH. Honors Thesis. 1-3 Hour.
Honors thesis under the direction of a faculty member in the Department of Communication. Pre- or Corequisite: COMM 3991H. Prerequisite: Honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{COMM 5111. Colloquium in Communication Research. 1 Hour}

Presentation, evaluation, and discussion of research proposals or on-going research projects. Graduate students are required to register for this course each semester of residence. (Typically offered: Fall and Spring) May be repeated for degree credit.

COMM 5123. Quantitative Research Methods in Communication. 3 Hours.
Emphasizes the assumptions and procedures of social scientific research methods in communication. (Typically offered: Fall)

COMM 5133. Media Processes \& Effects. 3 Hours.
Introduction to scholarly research and theory in media processes and effects. Particular attention will be devoted to the impact of media messages on individuals and societies. Emphasis will be placed on the construction and development of theory. (Typically offered: Fall)

COMM 5163. Introduction to Communication Paradigms. 3 Hours.
Introduces the variety of modes of inquiry used in communication. Reviews the field's history and boundaries. Explores contemporary communication research. (Typically offered: Fall)

\section*{COMM 5173. Qualitative Methods in Communication. 3 Hours.}

Emphasizes the assumptions and procedures of qualitative research methods in the examination of human communication behavior. (Typically offered: Spring)

COMM 5183. Interpretive Research Methods in Communication. 3 Hours.
Examines various perspectives used to analyze and critique various texts (e.g., media programming, speeches). (Typically offered: Spring)

COMM 5193. Seminar in Communication. 3 Hours.
Research, discussion, and papers focus on one of a variety of communication topics including symbolic processes in communication, philosophy of rhetoric, communication education, criticism of contemporary communication, interpersonal communication, organizational communication, and contemporary applications of rhetoric. Maximum credit is 9 semester hours. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

COMM 5323. Seminar in Persuasion. 3 Hours.
Focus is on comparing theoretical accounts of persuasion and research evidence concerning the effects of various factors on persuasion. (Typically offered: Fall)

\section*{COMM 5333. Interpersonal Communication Theory. 3 Hours.}

Survey of the theoretical orientations in interpersonal communication with primary focus on conceptual, philosophical and research issues. (Typically offered: Fall Even Years)

\section*{COMM 5343. Interpersonal Communication. 3 Hours.}

Theory and research concerning the exchange of information and the mutual influencing of behavior among people. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{COMM 5373. Content Analysis. 3 Hours}

Techniques for observing and analyzing the overt communication behavior of selected communicators. Prerequisite: Graduate standing. (Typically offered: Irregular)

COMM 5383. Seminar in Political Communication. 3 Hours.
Research seminar focusing on selected topics such as candidate imagery, diffusion of political information, or political symbolism. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{COMM 5403. Organizational Communication Theory. 3 Hours.}

A seminar on the historical development of theory and research into communication processes occurring within an organizational setting. Lecture, discussion, oral and written reports. Prerequisite: Graduate standing. (Typically offered: Irregular)

COMM 5473. Treatment of Native Americans in Film. 3 Hours.
Compares the treatment of Native Americans in film with how representatives of this group identify themselves. Will also focus on motion pictures relating to Native Americans produced by indigenous filmmakers. (Typically offered: Irregular)

COMM 5503. Communication and Cultural Studies. 3 Hours.
Examinations of the role of communication in modern culture. Emphasis is upon the production and circulation of meanings with society, and special attention is given to the role of popular and mass media in this process. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{COMM 5653. Feminist Texts and Theories. 3 Hours.}

Explores concepts and ideologies that articulate and define principles of feminism. Attention given to critical and creative works that challenge the centrality of gender in feminist analyses through intersections of race, class, nationality, and sexuality. (Typically offered: Fall Odd Years)
This course is cross-listed with GNST 5653.
COMM 5763. Health Communication. 3 Hours.
Examines the difficulties of effective communication between health care providers and recipients including the following: issues of social support, conveying bad news, cultural issues, and identifying relevant communication skills associated with effective health care provision. Explores medical education models for training in effective patient-provider communication. (Typically offered: Irregular)

COMM 5823. Political Communication. 3 Hours.
Covers contemporary political communication theory and applies them to understand modern political campaigns. Topics covered include the rhetoric of politics, political advertising, the role of the media and public opinion, the impact of new technology, campaign speech genres, political debates, and the role of social identity in presidential campaigns. (Typically offered: Irregular)

COMM 5833. The Rhetoric of the Modern American Presidency. 3 Hours
Study contemporary presidents' reliance on public persuasion, especially in efforts to bypass Congress and accomplish complicated political goals. Explore the origins of the concept of the "rhetorical presidency," specifically how it developed and changed the nature of the executive branch of government. Examine major genres of modern presidential rhetoric illustrating that trend. (Typically offered: Irregular)

\section*{COMM 5843. Legal Communication. 3 Hours.}

Examines communication processes in the legal environment and focuses on communication skills and behaviors among judges, attorneys, litigants, and jurors. Particular attention will be given to verbal strategies and nonverbal messages related to interviews, negotiation, mediation, and litigation and to the rhetorical functions of legal pleadings and judicial opinions. (Typically offered: Irregular)

COMM 5853. American Film Survey. 3 Hours.
A survey of major American film genres, major directors and films that have influenced the development of motion pictures. (Typically offered: Fall and Summer)

COMM 5863. History and Development of International Film I. 3 Hours. A critical survey of international film as a distinctive art form and as a medium of expression and communication with attention given to films and cinema from its origins to 1975. (Typically offered: Irregular)

COMM 5873. History and Development of International Film II. 3 Hours. A critical survey of international film as a distinctive art form and as a medium of expression and communication with attention given to films and cinema from 1975 to the present. (Typically offered: Irregular)

COMM 590V. Special Problems. 1-6 Hour.
Credit by arrangement. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

COMM 5913. Internship in Communication. 3 Hours.
Internship in applied communication within public and private organizations. Prerequisite: 15 hours graduate level communication in residence. (Typically offered: Fall, Spring and Summer)

COMM 5923. Capstone Course in Communication. 3 Hours.
Students organize and synthesize knowledge developed throughout their graduate coursework into a tangible capstone product which becomes part of their professional portfolio. (Typically offered: Fall, Spring and Summer)

COMM 5993. Readings In Cultural Studies. 3 Hours.
Classic and current theoretical approaches to cultural studies. Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular)

COMM 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{Communication Sciences and Disorders (CDIS)}

\section*{Courses}

CDIS 2253. Introduction to Communicative Disorders. 3 Hours.
An introductory course which surveys the professional interests of speech-language pathology and audiology with specific attention to the general recognition and classification of disorders of speech, language, and hearing, and general trends in rehabilitation. Consideration given to the classroom teacher's involvement in communication disorders. (Typically offered: Fall and Spring)

CDIS 2903H. Honors Introduction to Research in Communication Sciences and Disorders. 3 Hours.
This course introduces students to the research process in the field of communication sciences and disorders. Prerequisite: Acceptance into the COEHP Honors Program and instructor consent. (Typically offered: Spring)

\section*{CDIS 3103. Introduction to Audiology. 3 Hours.}

Introduction to the basic concepts for administering and interpreting hearing tests including the anatomy and physiology of the auditory system, disorders of the ear, and techniques for administering and interpreting basic pure tone threshold tests. Corequisite: PHYS 1023 and PHYS 1021L, PHYS 2013 and PHYS 2011L or CHEM 1073 and CHEM 1071L. Pre- or Corequisite: CDIS 3213. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall and Spring)

CDIS 3103H. Honors Introduction to Audiology. 3 Hours.
Introduction to the basic concepts for administering and interpreting hearing tests, including the anatomy and physiology of the auditory system, disorders of the ear, and techniques for administering and interpreting basic pure tone threshold tests. Corequisite: PHYS 1023 and PHYS 1021L, PHYS 2013 and PHYS 2011L or CHEM 1073 and CHEM 1071L. Pre- or Corequisite: CDIS 3213. Prerequisite: CDISBS major and honors standing, or departmental consent. (Typically offered: Fall and Spring)

This course is equivalent to CDIS 3103.
CDIS 3123. Normal Phonology and Articulatory Process. 3 Hours.
Analysis of the English speech sounds as a basis for speech improvement; physiological positions and movements; acoustic qualities and transcription in the international phonetic alphabet. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)

CDIS 3203. Articulation Disorders. 3 Hours.
A study of the definition, etiology, pathology, and treatment procedures of problems of articulation. Prerequisite: CDIS 3123, CDIS 3213 and CDISBS major or departmental consent. (Typically offered: Spring)

CDIS 3213. Anatomy and Physiology of the Speech Mechanism. 3 Hours. Structure and function of the organic mechanisms responsible for speech and language. Pre or Corequisite: BIOL 1543 and BIOL 1541L or higher. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall and Spring)

\section*{CDIS 3223. Language Development in Children. 3 Hours.}

Study of typical development of speech and language functions for communicative purposes in children from infancy to early school-age years, including the major components of language as well as the social, cognitive, biological and cultural factors related to language acquisition. Pre- or Corequisite: PSYC 2003.
Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)
CDIS 3223H. Honors Language Development in Children. 3 Hours.
Study of typical development of speech and language functions for communicative purposes in children from infancy to early school-age years, including the major components of language as well as the social, cognitive, biological, and cultural factors related to language acquisition. Pre- or Corequisite: PSYC 2003. Prerequisite: Honors candidacy and CDISBS major or departmental consent. (Typically offered: Fall)
This course is equivalent to CDIS 3223.
CDIS 3233. Introduction to Clinical Practice. 3 Hours.
An introduction to the various aspects of clinical operations including technical and interpersonal relationship skills necessary for case management and a survey of professional standards. Pre- or Corequisite: COMM 1313, CDIS 3223, and CDIS 3213. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall and Spring)

\section*{CDIS 3233H. Honors Introduction to Clinical Practice. 3 Hours.}

An introduction to the various aspects of clinical operations including technical and interpersonal relationship skills necessary for case management and a survey of professional standards. Pre- or Corequisite: COMM 1313, CDIS 3223, and CDIS 3213. Prerequisite: Honors standing and CDISBS major or departmental consent. (Typically offered: Fall and Spring)

This course is equivalent to CDIS 3233.

CDIS 3253. Cultural Diversity in Communication Disorders. 3 Hours.
An introduction to various cultures, customs, and professional standards in healthrelated fields that helps to develop intercultural communication skills necessary to manage the increasingly diverse caseloads of health-related professionals. Pre- or Corequisite: COMM 1313. Prerequisite: CDISBS major or departmental consent. (Typically offered: Spring)

CDIS 3901H. Honors Communication Disorders Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CDISBS major. (Typically offered: Fall, Spring and Summer)

\section*{CDIS 3923H. Honors Colloquium. 3 Hours.}

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in speech or dramatic art). (Typically offered: Irregular) May be repeated for degree credit.

\section*{CDIS 399VH. Honors Course. 1-6 Hour.}

Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

CDIS 4003. Clinical Practicum Undergrad. 3 Hours.
Entry-level training in speech-language clinical practicum activities. This course is taken for satisfactory or unsatisfactory credit. Students are paired with a patient(s) at the UA Speech and Hearing Clinic to provide speech-language therapy while being supervised by a licensed and certified speech-language pathologist. The schedule for this course varies based on patient availability. Students are required to be on campus to provide clinical services (including session preparation) and to complete follow-up meetings with the instructor to discuss clinical practice and paperwork. Prerequisite: Admitted to the Communication Sciences and Disorders (CDISBS) major, CDIS 3213, CDIS 3223 and CDIS 3233, plus satisfactory completion of specific program requirements for admission to clinical practice. (Typically offered: Fall, Spring and Summer)

CDIS 4003H. Honors Clinical Practicum Undergrad. 3 Hours.
Entry-level training in speech-language clinical practicum activities. This course is taken for satisfactory or unsatisfactory credit. Prerequisite: Honors standing, admitted to the Communication Sciences and Disorders (CDISBS) major, CDIS 3213, CDIS 3223 and CDIS 3233, plus satisfactory completion of specific program requirements for admission to clinical practice. (Typically offered: Fall and Spring)
This course is equivalent to CDIS 4003.

\section*{CDIS 4133. Introduction to Aural Rehabilitation. 3 Hours.}

Study of the technique used in the rehabilitation of speech and language problems of the hearing impaired including the role of amplification, auditory training, and speech reading in rehabilitation. Prerequisite: CDIS 3103. (Typically offered: Spring)

CDIS 4183. Clinical Assessment of Speech and Language Disorders. 3 Hours. Study of the basic diagnostic procedures used in speech-language pathology. Emphasis is placed on the clinical processes of assessment, including criteria for test selection, techniques in test administration, and interpretation of test. Pre- or Corequisite: Prior coursework in CDIS and ANTH 1023. Prerequisite: CDISBS major or departmental consent. (Typically offered: Spring)

\section*{CDIS 4213. Introduction to Speech and Hearing Science. 3 Hours.}

Study of the acoustic structure of oral speech and the auditory skills underlying speech perception. Prerequisite: CDIS 3203, CDIS 3213, CDIS 3123 and its lab component and CDISBS major or departmental consent. Pre- or Corequisite: MATH 1203 or higher. (Typically offered: Fall and Spring)

CDIS 4223. Language Disorders in Children. 3 Hours.
Study of disorders of language acquisition and usage in children and adolescents, with emphasis upon the nature, assessment, and treatment of such disorders. Prerequisite: CDIS 3223 and CDISBS major or departmental consent. (Typically offered: Spring)

CDIS 4223H. Honors Language Disorders in Children. 3 Hours.
Study of disorders of language acquisition and usage in children and adolescents, with emphasis upon the nature, assessment, and treatment of such disorders.
Prerequisite: CDIS 3223 and CDISBS major and honors standing or departmental consent. (Typically offered: Spring)
This course is equivalent to CDIS 4223.
CDIS 4253. Neurological Bases of Communication. 3 Hours.
A study of the structures and functions of the central and peripheral nervous systems as they relate to human speech, language, and cognition. Prerequisite: CDIS 3213 and CDISBS major or departmental consent. (Typically offered: Fall)
CDIS 4253H. Honors Neurological Bases of Communication. 3 Hours.
A study of the structures and functions of the central and peripheral nervous systems as they relate to human speech, language, and cognition. Prerequisite: CDIS 3213, honors standing, and CDISBS major or departmental consent. (Typically offered: Fall)
This course is equivalent to CDIS 4253.
CDIS 4273. Communication Behavior and Aging. 3 Hours.
Study of the effects upon communication of normal aspects of the aging process, from early adulthood throughout the lifespan. Changes in speech, language, and hearing functioning are identified; common alterations in communicative disorders commonly associated with advanced age are discussed. Prerequisite: CDISBS major or departmental consent. (Typically offered: Fall)

CDIS 4273H. Honors Communication Behavior and Aging. 3 Hours.
Study of the effects upon communication of normal aspects of the aging process, from early adulthood throughout the lifespan. Changes in speech, language, and hearing functioning are identified; common alterations in communicative disorders commonly associated with advanced age are discussed. Prerequisite: CDISBS major and honors standing, or departmental consent. (Typically offered: Fall) This course is equivalent to CDIS 4273.

CDIS 490V. Special Problems. 1-3 Hour.
Special problems. Prerequisite: Advanced standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CDIS 498VH. Honors Communication Disorders Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CDISBS major, and CDIS 3901H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.
CDIS 5103. Research Methodology in Communication Disorders. 3 Hours. An examination of methods of research in speech-language pathology and audiology and of the use of bibliographic tools. Focuses on purposes and problems of various forms of communication disorders research, procedures and instruments employed, and reporting of research. Prerequisite: Graduate standing. (Typically offered: Fall)

CDIS 5113. Seminar in Early Intervention. 3 Hours.
Study of a family-centered, transdisciplinary approach to early intervention with infants and toddlers at-risk for communication disorders. Topics include early communication development, service delivery in a family context, coordination with other disciplines, legislation mandating services, and providing services to children with multiple disabilities. Prerequisite: CDIS 3223 or equivalent, and graduate standing. (Typically offered: Irregular)

CDIS 5121L. Feeding and Swallowing Disorders Lab. 1 Hour.
Observation and interpretation of techniques used for assessment and remediation of feeding and swallowing disorders in children and adults. Prerequisite: Enrollment in CDISMS program or Instructor Consent. (Typically offered: Spring)
CDIS 5122. Feeding and Swallowing Disorders. 2 Hours.
Study of the etiology, assessment, and remediation of feeding and swallowing disorders in children and adults. Prerequisite: Enrollment in CDISMS program or Instructor Consent. (Typically offered: Spring)

CDIS 5143. Cognitive-Communication Development and Disorders. 3 Hours.
Study of normal cognitive development, the role of communication in this development, and shifts that may occur in conjunction with various speech, language and/or hearing disorders. Prerequisite: CDIS 3223. (Typically offered: Fall)

CDIS 5153. TBI and Right-Hemisphere Disorders. 3 Hours.
Study of the speech and language disorders commonly resulting from traumatic brain injury and right hemisphere disorders. Prerequisite: Enrollment in CDISMS program or instructor consent. (Typically offered: Spring)

CDIS 5163. Seminar in Language Topics. 3 Hours.
Study of selected topics in normal and disordered language acquisition and/ or language use. Implications of current research are reviewed and applied to evaluation and management of language impairment(s). Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{CDIS 5183. Advanced Clinical Practicum I. 3 Hours.}

Practicum activities in speech-language assessment and intervention. Prerequisite: Graduate standing. (Typically offered: Fall)

CDIS 5203. Introduction to Aural Rehabilitation. 3 Hours.
Study of the technique used in the rehabilitation of speech and language problems of the hearing impaired including the role of amplification, auditory training, and speech reading in rehabilitation. Graduate degree credit will not be given for both CDIS 4133 and CDIS 5203. Prerequisite: CDIS 3103. (Typically offered: Spring)

CDIS 5213. Voice and Resonance Disorders. 3 Hours.
Study of disorders of phonation and resonation, including etiologies, diagnosis, and intervention strategies. Prerequisite: Graduate standing. (Typically offered: Fall)

CDIS 5223. Fluency Disorders. 3 Hours.
An examination of fluency disorders including theory, etiological factors, and development. In addition, the course is designed to address assessment and management of fluency disorders consistent with evidence-based practice for prospective speech-language pathologists. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{CDIS 5233. Speech Sound Disorders. 3 Hours.}

Assessment and treatment of disorders in speech articulation. Prerequisite: Graduate standing. (Typically offered: Summer)

CDIS 5243. Language Disorders in Adults. 3 Hours.
This course will examine the diagnosis and treatment of language disorders in adults with focal and diffuse brain injuries. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{CDIS 5253. Motor Speech Disorders. 3 Hours.}

Study of motor speech production disorders related to damage to central or peripheral nervous system motor centers and pathways. Cerebral palsy, adult dysarthria, apraxia, and dysphagia are emphasized. Both theoretical and treatment considerations are addressed. Prerequisite: Enrollment in the Communication Sciences and Disorders Master of Science (CDISMS) program or instructor consent. (Typically offered: Spring)

\section*{CDIS 5273. Language, Learning and Literacy. 3 Hours.}

An examination of language-based literacy skills, including consideration of development, disorders, assessment and intervention. Prerequisite: Enrollment in CDISMS program or instructor consent. (Typically offered: Summer)

\section*{CDIS 5283. Advanced Clinical Practicum II. 3 Hours.}

Practicum activities in speech-language assessment and intervention. Prerequisite: Graduate standing and CDIS 5183. (Typically offered: Spring)

CDIS 5293. Augmentative and Alternative Communication. 3 Hours.
Approaches to communication management with the severely and profoundly handicapped child or adult, with primary emphasis on augmentative and alternative communication assessment and intervention. Prerequisite: Graduate standing. (Typically offered: Fall)

CDIS 5343. Cognitive Communication in Adults. 3 Hours.
Cognitive and communicative breakdown due to neurological trauma, including etiology, characteristics, assessment, and treatment for traumatic brain injury, right hemisphere injury, dementia, and other neurodegenerative communication disorders. Prerequisite: Graduate Standing. (Typically offered: Spring)

CDIS 5353. Neurological Bases of Communication. 3 Hours.
A study of the structures and functions of the central and peripheral nervous systems as they relate to human speech, language, and cognition. Graduate degree credit will not be given for both CDIS 4253 and CDIS 5353. Prerequisite: Enrollment in the Communication Sciences and Disorders Master of Science (CDISMS) program or Instructor Consent. (Typically offered: Fall)

CDIS 5383. Advanced Clinical Practicum III. 3 Hours.
Practicum activities in speech-language assessment and intervention. Prerequisite: Graduate standing and CDIS 5283. (Typically offered: Summer)

CDIS 5483. Advanced Clinical Practicum IV. 3 Hours.
Practicum activities in speech-language assessment and intervention. Prerequisite: Graduate standing and CDIS 5383. (Typically offered: Fall)

CDIS 5585. Advanced Clinical Practicum V. 5 Hours.
Practicum activities in speech-language assessment and intervention. Prerequisite: Graduate standing and CDIS 5483. (Typically offered: Spring)

CDIS 5813. Advanced Auditory (Re)Habilitation. 3 Hours.
This course provides students with an in-depth knowledge of hearing anatomy and physiology as well as current hearing and hearing assistive technologies. The development of auditory skills across the lifespan will be discussed as well as intervention techniques to facilitate auditory, speech, and spoken language skills across the lifespan. Prerequisite: Graduate standing. (Typically offered: Fall)

CDIS 5823. Language Learning with Multiple Disabilities. 3 Hours.
Approaches to services (assessment and intervention) for individuals who, as a result of multiple disabilities, are in the beginning stages of language development including the preintentional and presymbolic stages. Prerequisite: Graduate standing. (Typically offered: Irregular)

CDIS 5843. Communication and Swallowing in Dementia. 3 Hours.
This course provides an in-depth examination of the communication and feeding/ swallowing factors demonstrated by patients with dementia. Etiologies, symptoms, progression, evaluation, and appropriate interventions for of the most common forms of dementia are addressed. Prerequisite: Graduate standing. (Typically offered: Summer)

CDIS 5883. Policies \& Procedures in Educational Speech-Language Pathology. 3 Hours.
Educational Speech Pathology is designed to familiarize the student the factors related to functioning as an SLP in an educational setting, including state and federal regulations/standards, service delivery considerations, eligibility criteria, and documentation. Prerequisite: Graduate Standing. (Typically offered: Summer)

CDIS 590V. Special Problems. 1-6 Hour.
Special problems. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

CDIS 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{CDIS 6103. Literacy for Learning in Educational Settings. 3 Hours.}

An examination of language-based literacy skills, including consideration of development, disorders, assessment, and intervention. Prerequisite: Graduate standing and admission to the ASLPMC program or with departmental consent. (Typically offered: Fall)

CDIS 6203. Advanced Assessment and Intervention for Fluency Disorders. 3 Hours.
An examination of fluency disorders including theory, etiological factors, and development. In addition, the course is designed to address assessment and management of fluency disorders consistent with evidence-based practice for prospective speech-language pathologists. Prerequisite: Graduate standing and admission to the ASLPMC program or with departmental consent. (Typically offered: Fall)

CDIS 6303. Effective Augmentative and Alternative Communication Services in Schools. 3 Hours.
This course will support current speech-language pathologists in becoming more effective speech-language pathologists as it relates to the provision of augmentative and alternative services in schools. Throughout this course, students will (a) identify a barrier they wish to address relevant to their current service provision or their current caseload, (b) discover strategies for addressing that barrier, and (c) develop a plan for improving their augmentative and alternative service provision through the implementation of those strategies in their own professional work. Prerequisite: Graduate standing and admission to the ASLPMC program or with departmental consent. (Typically offered: Spring)

CDIS 6403. Advanced Pediatric Feeding and Swallowing Assessment \& Intervention. 3 Hours.
Study of the etiology, assessment, and remediation of feeding and swallowing disorders in children. Prerequisite: Graduate standing and admission to the ASLPMC program or with departmental consent. (Typically offered: Irregular)

CDIS 6503. Behavioral Management in Educational Settings. 3 Hours.
The course provides an introduction to behavioral management across a variety of settings highlighting best practices from organizing time, materials, and room space. Strategies for managing individual and large group student behaviors, transitions, and other arrangements will be presented in addition to basic federal and state laws as they pertain to the legal procedures for all professionals, including educators of students with disabilities and students who use English as a Second Language (ESL). Prerequisite: Graduate standing and admission to the ASLPMC program or with departmental consent. (Typically offered: Spring)

CDIS 699V. Seminar in Communication Sciences and Disorders. 1-6 Hour. Discussion of pertinent topics and issues in the discipline of communication sciences and disorders. Prerequisite: Advanced graduate standing. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

\section*{Community College Leadership (CCLE) \\ Courses}

CCLE 5003. History of the Community College. 3 Hours.
The course examines the history and development of community colleges in the United States. Prerequisite: Admission into M.Ed. in Community College Leadership program or instructor consent. (Typically offered: Irregular)

CCLE 5013. Legal Issues in Community Colleges. 3 Hours.
The course examines the legal issues facing community colleges in the United States, including: the rights and responsibilities of educators and students, fair employment; due process; torts liability and contracts; and federal and state legislation. Prerequisite: Admission into the M.Ed. program in community college leadership or instructor consent. (Typically offered: Irregular)

CCLE 5023. Organization and Leadership in Community Colleges. 3 Hours. The course applies the scholarship of organizations and leadership to community colleges in the United States, covering issues related to governance and policymaking, management, problem-solving, and personnel. Prerequisite: Admission into M.Ed. in Community College Leadership or instructor consent. (Typically offered: Irregular)

CCLE 5033. Diversity and Inclusion in Community Colleges. 3 Hours.
The course focuses on the responsibilities of community college leaders to be multiculturally competent professionals who foster inclusive practices for diverse student populations. Prerequisite: Admission into M.Ed. in Community College Leadership or instructor consent. (Typically offered: Irregular)

CCLE 5043. Finance and Fiscal Management in Community Colleges. 3 Hours. The course provides an understanding of community college finance and budgeting practices. Prerequisite: Admission into M.Ed. in Community College Leadership program or instructor consent. (Typically offered: Irregular)

CCLE 5053. Students in Community Colleges. 3 Hours.
The course provides an understanding of student populations in community colleges. Prerequisite: Admission into M.Ed. in Community College Leadership or instructor consent. (Typically offered: Irregular)

CCLE 5063. Teaching and Learning in Community Colleges. 3 Hours.
The course examines instructional strategies and considers the diverse types of learning environments at community colleges. Prerequisite: Admission into M.Ed. in Community College Leadership or instructor consent. (Typically offered: Irregular)

CCLE 5073. Workforce and Economic Development in Community Colleges. 3 Hours.

The course provides an overview of the role community colleges play in workforce, economic, and community development, including community-based partnerships, best practices in program development, and collaboration with both for-profit and nonprofit organizations. Prerequisite: Admission into M.Ed. in Community College Leadership or instructor consent. (Typically offered: Irregular)

CCLE 5083. Research and Assessment of Community Colleges. 3 Hours. The course provides an overview of research and assessment applicable to community colleges to inform strategic planning and data-driven decision-making. Prerequisite: Admission into M.Ed. in Community College Leadership or instructor consent. (Typically offered: Irregular)

CCLE 5093. Program Planning in Community Colleges. 3 Hours.
The course introduces the process of program planning in community colleges, including various planning models used in academic settings and fundamental steps in the planning process. Prerequisite: Admission into M.Ed. in Community College Leadership or instructor consent. (Typically offered: Irregular)

CCLE 5103. Critical Issues in Community Colleges. 3 Hours.
The course considers the pressing problems facing community colleges and strategies to maximize the potential of these institutions. Prerequisite: Admission into M.Ed. in Community College Leadership or instructor consent. (Typically offered: Irregular)

CCLE 511V. Independent Study. 1-3 Hour.
Provides students with an opportunity to pursue special study in community college leadership. Prerequisite: Instructor permission. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{Community Health Promotion (CHLP)}

\section*{Courses}

CHLP 310V. Health Coaches I. 1-3 Hour.
This course, designed for students whose career goals are focused on community/ healthcare service, is a study of key issues concerning community health care, aimed at developing practical approaches to supporting patients. Students study the medical, social, cultural, and economic challenges as well as opportunities that exist within evolving health care systems, and consider how these forces, in addition to behavioral and psychological factors, affect health outcomes of individual patients. Obstacles to effective health care as well as strategies for enabling at-risk patients to play more active roles in promoting their health and well-being are key issues. This course provides students with the academic foundation for the field-based Health Coaches II and III. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

CHLP 320V. Health Coaches II. 1-3 Hour.
Health Coaches II is the field-based second course in the three-course Health Coaches sequence. Health Coaches will become engaged in the processes of educating and motivating identified at risk patients to take an active and meaningful role in their health and well-being. Students are required to make scheduled visits to their assigned patients' homes, potentially attend doctor appointments with the patient, engage in phone interactions with patients and the healthcare team as needed, and meet face-to-face weekly with the care coordination healthcare team to discuss patient experiences and strategies for optimizing healthcare outcomes for individual patients. Prerequisite: CHLP 310V. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CHLP 330V. Health Coaches III. 1-3 Hour.
Health Coaches III is the field-based third course in the three-course Health Coaches sequence. Health Coaches will to continue to be engaged in the processes of educating and motivating identified at risk patients to take an active and meaningful role in their health and well-being through scheduled visits to their assigned patients' homes or by phone, potentially attending doctor appointments with the patient, and participating in face-to-face weekly with the care coordination healthcare team to discuss patient experiences and strategies for optimizing healthcare outcomes for individual patients. In addition, students at this level will provide leadership within student care teams and provide community outreach under the direction of the professional healthcare team. Prerequisite: CHLP 310V and CHLP 320V. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{Computer Science and Computer Engineering (CSCE)}

\section*{Courses}

CSCE 2004. Programming Foundations I. 4 Hours.
Introductory programming course for students majoring in computer science or computer engineering. Software development process: problem specification, program design, implementation, testing and documentation. Programming topics: data representation, conditional and iterative statements, functions, arrays, strings, file I/O and classes. Using C++ in a UNIX environment. Corequisite: Lab component. Prerequisite: MATH 2445 or MATH 2554 or MATH 2554 C with a grade of \(C\) or better, a College of Engineering (ENGR) student, a Computer Science Minor (CSCE-M), or a math major (MATHBS or MATHBA). (Typically offered: Fall and Spring)

\section*{CSCE 2014. Programming Foundations II. 4 Hours.}

This course continues developing problem solving techniques by focusing on fundamental data structures and associated algorithms. Topics include: abstract data types, introduction to object-oriented programming, linked lists, stacks, queues, hash tables, binary trees, graphs, recursion, and searching and sorting algorithms. Using C++ in a UNIX environment. Corequisite: Lab component. Prerequisite: CSCE 2004 with a grade of C or better. (Typically offered: Fall and Spring)

CSCE 2023. Introduction to Programming in Java. 3 Hours.
Introduction to programming in Java with emphasis on engineering applications. Programming techniques: data representation and expressions, conditional and iterative statements, arrays, lists, file I/O, methods. Object oriented programming: designing, implementing and using classes, collections and composite objects. Students will gain hands-on programming experience and exposure to classic engineering problem solving techniques. Prerequisite: MATH 2445 or MATH 2554 or MATH 2554C, each with a grade of C or higher. (Typically offered: Irregular)

\section*{CSCE 2114. Digital Design. 4 Hours.}

Introduction to the hardware aspects of digital computers, logic gates, flipflops, reduction, finite state machines, sequential logic design, digital systems, software design tools, hardware description language (VHDL), and implementation technologies. Corequisite: Lab component. Prerequisite: MATH 2554 or MATH 2554C with a grade of C or better. (Typically offered: Fall and Spring) This course is cross-listed with ELEG 2904.

\section*{CSCE 2214. Computer Organization. 4 Hours.}

Presents the relationship between computing hardware and software with a focus on the concepts for current computers. CPU design topics are covered including various techniques for microprocessor design and performance evaluation. Corequisite: Lab component. Prerequisite: CSCE 2114 with a grade of \(C\) or better. (Typically offered: Fall and Spring)

\section*{CSCE 3193. Programming Paradigms. 3 Hours.}

Programming in different paradigms with emphasis on object oriented programming and network programming. Survey of programming languages, event driven programming, and concurrency. Prerequisite: CSCE 2014 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{CSCE 3193H. Honors Programming Paradigms. 3 Hours.}

Programming in different paradigms with emphasis on object oriented programming and network programming. Survey of programming languages, event driven programming, and concurrency. Prerequisite: CSCE 2014 with a grade of C or better. (Typically offered: Fall)
This course is equivalent to CSCE 3193.

\section*{CSCE 3513. Software Engineering. 3 Hours.}

A modern approach to the current techniques used in software design and development. This course emphasizes the use of modern software development tools, multi-module programming, and team design and engineering. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Fall and Spring)

\section*{CSCE 3613. Operating Systems. 3 Hours.}

An introduction to operating systems including topics in system structures, process management, storage management, files, distributed systems, and case studies. Prerequisite: CSCE 2014 and CSCE 2214, each with a grade of C or better. (Typically offered: Fall and Spring)

CSCE 3613H. Honors Operating Systems. 3 Hours.
An introduction to operating systems including topics in system structures, process management, storage management, files, distributed systems, and case studies. Prerequisite: CSCE 2014 and CSCE 2214, each with a grade of \(C\) or better. (Typically offered: Spring)
This course is equivalent to CSCE 3613.

\section*{CSCE 3953. System Synthesis and Modeling. 3 Hours.}

This course instructs the students in the use of modern synthesis and modeling languages and approaches for design automation. This course will teach students the use of HDLs and modeling languages for representing and implementing digital computer systems. Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Fall)

CSCE 4013. Special Topics. 3 Hours.
Consideration of computer science topics not covered in other courses. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

CSCE 4043. RFID Information Systems Security. 3 Hours.
Radio frequency identification (RFID) information systems provide information to users about objects with RFID tags. They require the application of information systems security (INFOSEC) to protect the information from tampering, unauthorized information disclosure, and denial of service to authorized users. This course addresses security and privacy in an RFID system. Prerequisite: INEG 2314. (Typically offered: Irregular)

\section*{CSCE 4114. Embedded Systems. 4 Hours.}

The architecture, software, and hardware of embedded systems. Involves a mixture of hardware and software for the control of a system (including electrical, electro-mechanical, and electro-chemical systems). They are found in a variety of products including cars, VCRs, HDTVs, cell phones, pacemakers, spacecraft, missile systems, and robots for factory automation. Corequisite: Lab component. Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Fall)

CSCE 4123. Programming Challenges. 3 Hours.
This course studies the principle methods used in the solution of programming contest problems, e.g., data structures strings, sorting, machine arithmetic and algebra, combinatorics, number theory, backtracking, graph traversal, graph algorithms, dynamic programming, grids, and computational geometry. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4133. Algorithms. 3 Hours.}

Provides an introduction to formal techniques for analyzing the complexity of algorithms. The course surveys important classes of algorithms used in computer science and engineering. Prerequisite: (CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better) and (MATH 2603 or MATH 2803). (Typically offered: Fall)

\section*{CSCE 4143. Data Mining. 3 Hours.}

The course focuses on the principles, theory, design, and implementation of data mining algorithms for large-scale data. Topics include foundations of data mining; preprocessing; mining frequent patterns, associations and correlations; supervised learning including decision tree induction, naïve Bayesian classification, support vector machine, logistic regression, Bayesian network, and K-nearest neighbor learning; unsupervised learning including K-means clustering, hierarchical clustering, density-based clustering, and grid-based clustering; outlier analysis; graph mining; scalable and distributed data mining. Prerequisite: (CSCE 3193 or CSCE 3193H or DASC 2103) or (CSCE 2014 and INEG 2333 and INEG 2314) or (CSCE 2014 and STAT 3013 and STAT 3003)). (Typically offered: Fall)
This course is cross-listed with INEG 4143.
CSCE 4213. Computer Architecture. 3 Hours.
The architecture of modern scalar and parallel computing systems. Techniques for dynamic instruction scheduling, branch prediction, instruction level parallelism, shared and distributed memory multiprocessor systems, array processors, and memory hierarchies. Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Spring)
This course is cross-listed with ELEG 4983.

CSCE 4233. Low Power Digital Systems. 3 Hours.
The reduction of power consumption is rapidly becoming one of the key issues in digital system design. Traditionally, digital system design has mainly focused on performance and area trade-offs. This course will provide a thorough introduction to digital design for lower consumption at the circuit, logic, and architectural level. Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Irregular)

CSCE 4253. Concurrent Computing. 3 Hours.
Programming concurrent processes; computer interconnection network topologies; loosely coupled and tightly coupled paralleled computer architectures; designing algorithms for concurrency; distributed computer architectures. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4263. Advanced Data Structures. 3 Hours.}

This course continues the study of data structures, algorithmic analysis for these data structures, and their efficient implementation to support standard library in programming languages. Topics include: AVL trees, Red-Black trees, Splay trees, Optimal Binary Search trees, 2-3 tree, 2-3-4 tree, B-trees, Segment trees, Leftist Heaps, Binomial Heaps, Fibonacci Heap, Disjoint Set, Hashing, and big integer with hundreds to thousands of digits. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of \(C\) or better. (Typically offered: Irregular)

CSCE 4273. Big Data Analytics and Management. 3 Hours.
Introduction to tools and techniques for distributed data computing and management, big data analytics, scalable machine learning, and real-time streaming data analysis. Students cannot receive credit for both CSCE 4273 and CSCE 5273. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4323. Formal Languages and Computability. 3 Hours.}

Finite Automata and regular languages, regular expressions, context-free languages and pushdown automata, nondeterminism, grammars, and Turing machines. Church's thesis, halting problem, time complexity, space complexity and undecidability. Prerequisite: (CSCE 3193 or CSCE 3193H, each with a grade of C or better) and (MATH 2603 or MATH 2803). (Typically offered: Spring)
CSCE 4333. Introduction to Integrated Circuit Design. 3 Hours.
Design and layout of large scale digital integrated circuits using CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design and layout strategies for large scale CMOS circuits. Students may not receive credit for both CSCE 4333 and CSCE 5223. Prerequisite: ELEG 3213 or ELEG 3933 and MATH 2584 (Typically offered: Fall)

\section*{CSCE 4353. CPLD/FPGA-Based System Design. 3 Hours.}

Field Programmable Logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices. Prerequisite: CSCE 2214 with a grade of C or better. (Typically offered: Irregular) This course is cross-listed with ELEG 4963.

\section*{CSCE 4373. Electronic Design Automation. 3 Hours.}

This course studies physical design, analysis and optimization of VLSI circuits and systems with emphasis on computational realizations and optimization. We start with some related topics such as graph algorithms and discuss various well-known algorithms and methodologies in the design process of VLSI circuits, including design partitioning, logic synthesis, floorplanning, routing, static timing analysis and performance-driven layout. It requires a basic knowledge of digital circuit design, data structure, and object-oriented programming. Students cannot receive credit for both CSCE 4373 and CSCE 5373. Prerequisite: CSCE 3953 and CSCE 3193, each with a C or higher. (Typically offered: Irregular)

CSCE 4423. Computer Systems Modeling. 3 Hours.
Basic concepts of problem analysis, model design, and simulation experiments. A simulation will be introduced and used in this course. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4433. Cryptography. 3 Hours.}

This course provides a general introduction to modern cryptography. Topics include: stream ciphers, block ciphers, message authentication codes, public key encryption, key exchange, and signature schemes. Prerequisite: (CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better) and (MATH 2603 or MATH 2803). (Typically offered: Irregular)

\section*{CSCE 4523. Database Management Systems. 3 Hours.}

Introduction to database management systems, architecture, storage structures, indexing, relational data model, E-R diagrams, query languages, SQL, ODBC, transaction management, integrity, and security. Students may not receive credit for both CSCE 4523 and CSCE 5523. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Spring)

\section*{CSCE 4543. Software Architecture. 3 Hours.}

A study of software architecture through the use of case studies drawn from real systems designed to solve real problems from technical as well as managerial perspectives. Techniques for designing, building, and evaluating software architectures. Prerequisite: CSCE 4133 and CSCE 3513. (Typically offered: Irregular)

\section*{CSCE 4553. Information Retrieval. 3 Hours.}

The objective of this course is to give students a hands-on introduction to information retrieval systems. Classical textual information retrieval systems are studied, including text preprocessing, file structures, term-weighting schemes, and web search engines. Students may not receive credit for both CSCE 4553 and CSCE 5533. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

CSCE 4561. Capstone I. 1 Hour.
CSCE students complete a comprehensive software capstone project during their final year of undergraduate studies. The project is done over 2 semesters in phases: concept, formal proposal, implementation, and presentation. The projects include and may require the integration of software and human factors and hardware elements and are developed to software engineering methodologies. Prerequisite: CSCE 3513 and (CSCE 3613 or CSCE 3613H) and completion of 96 credit hours. (Typically offered: Fall)

\section*{CSCE 4613. Artificial Intelligence. 3 Hours.}

Introduction to intelligent agents, Al languages, search, first order logic, knowledge representation, ontologies, problem solving, natural language processing, machine vision, machine learning, and robotics. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4623. Mobile Programming. 3 Hours.}

An introduction to software development on mobile devices. The major topics covered in this course include underlying concepts and principles in mobile programming, as well as hands-on programming experience on mobile devices with an emphasis on smartphones. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4643. Graphics Processing Units Programming. 3 Hours.}

This course provides an introduction to massively parallel programming using Graphics Processing Units (GPUs). Topics include basic programming model, GPU thread hierarchy, GPU memory architecture, and performance optimization techniques and parallel patterns needed to develop real-life applications. Prerequisite: CSCE 2014 with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4753. Computer Networks. 3 Hours.}

This course is an introductory course on computer networks. Using the Internet as a vehicle, this course introduces underlying concepts and principles of modern computer networks, with emphasis on protocols, architectures, and implementation issues. Students cannot receive graduate credit for CSCE 4753. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of C or better. (Typically offered: Irregular)

CSCE 4783. Cloud Computing and Security. 3 Hours.
Cloud computing has entered the mainstream of information technology, providing highly elastic scalability in delivery of enterprise applications and services. In this course, we will focus on the architecture of today's cloud computing, the technologies used within them, application development using contemporary cloud computing tools, and the security risks and management in the cloud. Students cannot receive credit for both CSCE 4783 and CSCE 5783. Prerequisite: CSCE 3613 or CSCE 3613 H , each with a grade of C or better. (Typically offered: Irregular)

\section*{CSCE 4813. Computer Graphics. 3 Hours.}

Introduction to the theory and algorithms used in computer graphics systems and applications. Topics include: 2D and 3D geometric models (points, lines, polygons, surfaces), affine transformations (rotation, translation, scaling), viewpoint calculation (clipping, projection), lighting models (light-material interactions, illumination and shadow calculation). Students will implement their own graphics pipeline to demonstrate many of these techniques. Higher level computer graphics applications will be created using OpenGL. Prerequisite: CSCE 3193 or CSCE 3193H, each with a grade of \(C\) or better. (Typically offered: Irregular)

\section*{CSCE 4853. Information Security. 3 Hours.}

This course covers principles, mechanisms, and policies governing confidentiality, integrity, and availability of digital information. Topics to be covered include security concepts and mechanisms, security policies, multilevel security models, system vulnerability, threat and risk assessment, basic cryptography and its applications, intrusion detection systems. Prerequisite: CSCE 3193 or CSCE 3193H or DASC 2103, each with a grade of C or better. (Typically offered: Irregular)

CSCE 490V. Individual Study. 1-6 Hour.
Individual study directed by faculty in current research topics, state of the art, or advanced methodology in one of the major computer science or computer engineering areas. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{CSCE 4914. Advanced Digital Design. 4 Hours.}

To master advanced logic design concepts, including the design and testing of synchronous and asynchronous combinational and sequential circuits using state of the art CAD tools. Corequisite: Lab component. Prerequisite: CSCE 2114 or ELEG 2904. (Typically offered: Irregular)

CSCE 491VH. Honors Thesis. 1-3 Hour.
To provide honors students with experience in presenting their research accomplishments to their peers and faculty. Prerequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

\section*{CSCE 4963. Capstone II. 3 Hours.}

CSCE students complete a comprehensive capstone project during their final year of undergraduate studies. The project is done over two consecutive semesters in phases: concepts, formal proposal, implementation, and presentation. The projects include and may require the integration of software, human factors, and hardware elements and are developed using software engineering methodologies. Prerequisite: CSCE 4561. (Typically offered: Spring)

CSCE 5013. Advanced Special Topics in Computer Science or Computer Engineering. 3 Hours.
Consideration of current computer engineering or computer science topics not covered in other courses. Prerequisite: Graduate standing in Computer Science Computer Engineering. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

\section*{CSCE 5033. Advanced Algorithms. 3 Hours.}

Design of computer algorithms, with primary emphasis on the development of efficient implementation. Prerequisite: Graduate standing in Computer Science Computer Engineering. (Typically offered: Irregular)

\section*{CSCE 5063. Machine Learning. 3 Hours.}

An introduction to machine learning, with particular emphasis on neural network techniques. This course presents the basic principles underlying algorithms that improve with experience, and covers using them effectively for modeling data and making predictions. Prerequisite: Computer Science Computer Engineering(CSCE) graduate standing. (Typically offered: Irregular)

CSCE 5073. Data Mining. 3 Hours.
This course surveys the most common methods used in data mining and machine learning. It involves several projects in which students will implement tools that are useful for mining knowledge from data and making predictions. The course will study both heuristic algorithms and statistical techniques. Prerequisite: CSCE 3193 and (INEG 2314 or STAT 3013) or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

CSCE 5114. Embedded Systems. 4 Hours.
The architecture, software, and hardware of embedded systems. Involves a mixture of hardware and software for the control of a system (including electrical, electromechanical, and electro-chemical systems). They are found in a variety of products including cars, VCRs, HDTVs, cell phones, pacemakers, spacecraft, missile systems, and robots for factory automation. Graduate degree credit will not be given for both CSCE 4114 and CSCE 5114. Corequisite: Lab component. Prerequisite:
CSCE 2214 with a grade of C or better or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Fall)

\section*{CSCE 5133. Algorithms. 3 Hours.}

Provides an introduction to formal techniques for analyzing the complexity of algorithms. The course surveys important classes of algorithms used in computer science and engineering. Graduate degree credit will not be given for both CSCE 4133 and CSCE 5133. Prerequisite: ((CSCE 3193 and (MATH 2603 or MATH 2803)) or (MATH 4423) or (Computer Science/Computer Engineering(CS/CE) graduate standing). (Typically offered: Fall)

\section*{CSCE 5173. Formal Languages and Computability. 3 Hours.}

Finite Automata and regular languages, regular expressions, context-free languages and pushdown automata, nondeterminism, grammars, and Turing machines. Church's thesis, halting problem, and undecidability. Graduate degree credit will not be given for both CSCE 4323 and CSCE 5173. Prerequisite: CSCE 4133 or CSCE 5133 (formerly CSCE 4133). (Typically offered: Spring)

\section*{CSCE 5183. Advanced Data Structures. 3 Hours.}

This course continues the study of data structures, algorithmic analysis for these data structures, and their efficient implementation to support standard library in programming languages. Topics include: AVL trees, Red-Black trees, Splay trees, Optimal Binary Search trees, 2-3 tree, 2-3-4 tree, B-trees, Segment trees, Leftist Heaps, Binomial Heaps, Fibonacci Heap, Disjoint Set, Hashing, and big integer with hundreds to thousands of digits. Graduate degree credit will not be given for both CSCE 4263 and CSCE 5183. Prerequisite: CSCE 3193 or Computer Science Computer Engineering(CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5193. Concurrent Computing. 3 Hours.}

Programming concurrent processes; computer interconnection network topologies; loosely coupled and tightly coupled paralleled computer architectures; designing algorithms for concurrency; distributed computer architectures. Graduate degree credit will not be given for both CSCE 4253 and CSCE 5193. Prerequisite: CSCE 3193 or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

CSCE 5203. Advanced Database Systems. 3 Hours.
Topics include: object databases, distributed databases, XML query, data warehouses, network as database systems, peer-peer data sharing architectures, data grids, data mining, logic foundations, semantic databases, spatial and temporal databases, and knowledge bases. Prerequisite: CSCE 4523 or CSCE 5523. (Typically offered: Irregular)

CSCE 5223. Introduction to Integrated Circuit Design. 3 Hours.
Design and layout of large scale digital integrated circuits using CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design, and layout strategies for large scale CMOS circuits. Students may not receive credit for both CSCE 4333 and CSCE 5223.
Prerequisite: (ELEG 3213 or ELEG 3933) and MATH 2584 or Computer Science Computer Engineering(CSCE) graduate standing. (Typically offered: Fall)

CSCE 5233. Low Power Digital Systems. 3 Hours.
The reduction of power consumption is rapidly becoming one of the key issues in digital system design. Traditionally, digital system design has mainly focused on performance and area trade-offs. This course will provide a thorough introduction to digital design for lower consumption at the circuit, logic, and architectural level. Graduate degree credit will not be given for both CSCE 4233 and CSCE 5233. Prerequisite: CSCE 2214 with a grade of \(C\) or better or graduate standing in Computer Science Computer Engineering (CSCE) or graduate standing in Electrical Engineering (ELEG). (Typically offered: Irregular)

\section*{CSCE 5253L. Integrated Circuit Design Laboratory I. 3 Hours.}

Design and layout of large scale digital integrated circuits. Students design, check and simulate digital integrated circuits which will be fabricated, and tested in I.C. Design Laboratory II. Topics include computer aided design, circuit timing, and wire delay. Prerequisite: CSCE 4333 or CSCE 5223 or ELEG 4233 or ELEG 5923. (Typically offered: Irregular)
This course is cross-listed with ELEG 5253L.

\section*{CSCE 5263. Computational Complexity. 3 Hours.}

Turing machines, recursion theory and computability, complexity measures, NP-completeness, analysis on NP-complete problems, pseudo-polynomial and approximation. Prerequisite: Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

CSCE 5273. Big Data Analytics and Management. 3 Hours.
Topics include principles of distributed data computing and management, design and implementation of non-relational data systems, crowd sourcing and human computation, big data analytics and scalable machine learning, real-time streaming data analysis, and social aware computing. Prerequisite: CSCE 3193 and INEG 2314 or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)
CSCE 5283. Graph and Combinatorial Algorithms. 3 Hours.
Advanced topics in graph and combinatorial optimization problems. Traditional approach section: P and NP problems, proof of NP-completeness, approximation algorithms for solving NP hard problems. Machine learning-based approach section: graph neural networks, deep reinforcement learning, state-of-the-art machine learning approaches for solving graph and combinatorial optimization problems. Prerequisite: Graduate standing in CSCE Department. (Typically offered: Irregular)

CSCE 5293. Computer Architecture. 3 Hours.
The architecture of modern scalar and parallel computing systems. Techniques for dynamic instruction scheduling, branch prediction, instruction level parallelism, shared and distributed memory multiprocessor systems, array processors, and memory hierarchies. Graduate degree credit will not be given for both CSCE 4213 and CSCE 5293. Prerequisite: CSCE 2214 with a grade of \(C\) or better or Computer Science Computer Engineering(CSCE) graduate standing. (Typically offered: Spring)

\section*{CSCE 5323. Computer Security. 3 Hours.}

This course covers a broad selection of contemporary issues in computer security. Topics include security concepts and mechanisms, access control, security policies, authentication methods, basic cryptography, secure system design, and information assurance. Prerequisite: Graduate standing in CSCE department. (Typically offered: Irregular)

\section*{CSCE 5333. Computer Forensics. 3 Hours.}

Various methods for identification, preservation, and extraction of electronic evidence at a computer crime scene. Specific topics include auditing and investigation of network and host intrusions, computer forensics tools, resources for system administrators and information security officers, legal issues related to computer and network forensics. Prerequisite: CSCE 5323. (Typically offered: Irregular)

\section*{CSCE 5343. Advanced Software Engineering. 3 Hours.}

This course is about software metrics and models. It will focus on quantitative methods and techniques for management of software projects, design of software systems, and improvement of software quality. The material covered will be metrics and models used in the software lifecycle, such as software requirements metrics, design metrics, implementation metrics, testing metrics, effort estimation model. Prerequisite: CSCE 3513 or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)
CSCE 5353. CPLD/FPGA-Based System Design. 3 Hours.
Field Programmable Logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices. Graduate degree credit will not be given for both CSCE 4353 and CSCE 5353. Prerequisite: CSCE 2214 with a grade of C or better or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5373. Electronic Design Automation. 3 Hours.}

This course studies physical design, analysis and optimization of VLSI circuits and systems with emphasis on computational realizations and optimization. We start with some related topics such as graph algorithms and discuss various well-known algorithms and methodologies in the design process of VLSI circuits, including design partitioning, logic synthesis, floorplanning, routing, static timing analysis and performance-driven layout. It requires a basic knowledge of digital circuit design, data structure, and object-oriented programming. Students cannot receive credit for both CSCE 4373 and CSCE 5373. Prerequisite: Graduate standing in Computer Engineering, Computer Science, or Electrical Engineering. (Typically offered: Irregular)

\section*{CSCE 5383. Malware Analysis. 3 Hours.}

This course discusses fundamental concepts on malicious software, otherwise known as malware, which play a major role in intrusion into computer systems. Various malware analysis tools and techniques are explored. A major focus of this course is providing hands-on laboratory activities, which include dissecting software binary and understanding how to detect and eliminate malicious codes. Prerequisite: Graduate standing in CSCE Department. (Typically offered: Irregular)

\section*{CSCE 5423. Cryptography. 3 Hours.}

This course provides an introduction to cryptography and its applications and practices. Topics covered include cryptography basics, symmetric key cryptography, public-key cryptography, cryptographic hash function, digital signature, message authentication, key management, password security, SSL/TLS, IPsec, cryptographyassisted anonymous communications, cryptocurrency, and privacy-aware computing. Graduate degree credit will not be given for both CSCE 4433 and CSCE 5423. Prerequisite: Graduate standing in CSCE Department. (Typically offered: Irregular)

\section*{CSCE 5523. Database Management Systems. 3 Hours.}

Introduction to database management systems, architecture, storage structures, indexing, relational data model, E-R diagrams, query languages, SQL, ODBC, transaction management, integrity, and security. Graduate degree credit will not be given for both CSCE 4523 and CSCE 5523. Prerequisite: Graduate standing in CSCE Department. (Typically offered: Spring)

\section*{CSCE 5533. Advanced Information Retrieval. 3 Hours.}

Study of the architecture, implementation, and evaluation of current information retrieval systems. Students will apply their knowledge of programming and data structures to implement a large system with an emphasis on efficiency and scalability. They will study current research in the field and implement individual or group projects on advanced topics. Prerequisite: Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

CSCE 5543. Statistical Natural Language Processing. 3 Hours.
Introduction to statistical natural language processing (NLP). Covers the theory and algorithms needed for building NLP tools, provides broad coverage of mathematical and linguistic foundations, and detailed discussion of statistical methods for text mining and information extraction. Current research and applications of statistical NLP will be discussed. Prerequisite: CSCE 2014 and (STAT 3013 or INEG 2314) or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5553. Software Architecture. 3 Hours.}

A study of software architecture through the use of case studies drawn from real systems designed to solve real problems from technical as well as managerial perspectives. Techniques for designing, building, and evaluating software architectures. Graduate degree credit will not be given for both CSCE 4543 and CSCE 5553. Prerequisite: CSCE 4133 or CSCE 5133 and CSCE 3513. (Typically offered: Irregular)

\section*{CSCE 5563. Introduction to Deep Learning. 3 Hours.}

The course aims at understanding the fundamental of deep learning and its application in computer vision, natural language understanding and game theory. The course starts with basic multi layer perceptron and then moves towards other complicated models such as convolutional neural networks, recurrent neural networks, attention, and generative adversarial network models. The course will end with deep reinforcement learning. The course provides required steps for building deep learning models. Prerequisite: Computer Science Computer Engineering (CSCE) Graduate Standing. (Typically offered: Irregular)
CSCE 5613. Artificial Intelligence. 3 Hours.
Introduction to intelligent agents, Al languages, search, first order logic, knowledge representation, ontologies, problem solving, natural language processing, machine vision, machine learning, and robotics. Prerequisite: Graduate standing in CSCE Department. (Typically offered: Irregular)

\section*{CSCE 5623. Secure Digital System Design. 3 Hours.}

This course is to give graduate students an insight of contemporary security-related issues in modern digital systems. In addition to lectures, students will be practicing secure digital system design during a project. Prerequisite: Computer Science Computer Engineering (CSCE) graduate standing or Electrical Engineering (ELEG) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5653. Network Security. 3 Hours.}

This course focuses on understanding and applying foundational principles in security to real computer networks. Students will study and implement several real attacks and take advantage of several recreated vulnerable systems in order to understand the modern landscape of network security. Students will also be looking at various case studies of attacks and defense strategies, including known exploit proofs-of-concept, published papers, and documents from security agencies and cyber-security research firms. Prerequisite: Graduate standing in CSCE department. (Typically offered: Irregular)

\section*{CSCE 5673. Mobile Programming. 3 Hours.}

An introduction to software development on mobile devices. The major topics covered in this course include underlying concepts and principles in mobile programming, as well as hands-on programming experience on mobile devices with an emphasis on smartphones. Graduate degree credit will not be given for both CSCE 4623 and CSCE 5673. Prerequisite: CSCE 3193 or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5683. Image Processing. 3 Hours.}

The objective of this class is to give students a hands-on introduction to the fundamentals of image processing. A variety of image processing techniques and applications will be discussed including image enhancement, noise removal, spatial domain and frequency domain filtering, image restoration, color image processing, image compression, edge detection and image segmentation. Prerequisite: CSCE 3193 or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

CSCE 5693. Graphics Processing Units Programming. 3 Hours.
This course provides an introduction to massively parallel programming using Graphics Processing Units (GPUs). Topics include basic programming model, GPU thread hierarchy, GPU memory architecture, and performance optimization techniques and parallel patterns needed to develop real-life applications. Graduate degree credit will not be given for both CSCE 4643 and CSCE 5693. Prerequisite: CSCE 2014 with a grade of C or better or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5703. Computer Vision. 3 Hours.}

The objective of this course is to give students a hands-on introduction to the fundamentals of computer vision. Topics include image formation, object modeling, image processing, feature and edge detection, image segmentation, motion estimation, depth from stereo, shape description and object recognition. Prerequisite: CSCE 3193 and CSCE 4613 or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5753. Wireless Systems Security. 3 Hours.}

Wireless systems such as wireless local area networks, cellular and mobile networks, and sensor networks are vulnerable to attacks. The goal of the class is for students to understand how to design secure wireless systems. Security topics include confidentiality, integrity, availability, privacy, and control of fraudulent usage of networks. Issues addressed include basic wireless theory, cryptography, threat modeling, risks, and mitigation techniques. Prerequisite: Graduate standing in Computer Science Computer Engineering(CSCE). (Typically offered: Irregular)

\section*{CSCE 5763. Privacy Enhancing Technologies. 3 Hours.}

This course introduces privacy enhancing technologies and hot privacy topics in modern computing systems. Students will be exposed to many interesting privacy problems, study privacy enhancing technologies, and apply their knowledge to explore an open research problem in a research-oriented project. After completing this course, students will gain broad knowledge of the state-of-the-art privacy enhancing technologies and open research problems. They will also develop skills and enhance potentials to do research on privacy and security. Prerequisite: Must be a graduate student in Computer Science Computer Engineering (CSCE). (Typically offered: Irregular)

\section*{CSCE 5773. Computer Networks. 3 Hours}

This course is an introductory course on computer networks. Using the Internet as a vehicle, this course introduces underlying concepts and principles of modern computer networks, with emphasis on protocols, architectures, and implementation issues. Graduate degree credit will not be given for both CSCE 4753 and CSCE 5773. Prerequisite: Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5783. Cloud Computing and Security. 3 Hours.}

Cloud computing has entered the mainstream of information technology, providing highly elastic scalability in delivery of enterprise applications and services. In this course, we will focus on the architecture of today's cloud computing, the technologies used within them, application development using contemporary cloud computing tools, and the security risks and management in the cloud. Graduate degree credit will not be given for both CSCE 4783 and CSCE 5783. Prerequisite: CSCE 3613 or graduate standing in Computer Science Computer Engineering(CSCE). (Typically offered: Irregular)

\section*{CSCE 5813. Computer Graphics. 3 Hours.}

Introduction to the theory and algorithms used in computer graphics systems and applications. Topics include: 2D and 3D geometric models (points, lines, polygons, surfaces), affine transformations (rotation, translation, scaling), viewpoint calculation (clipping, projection), lighting models (light-material interactions, illumination and shadow calculation). Students will implement their own graphics pipeline to demonstrate many of these techniques. Higher level computer graphics applications will be created using OpenGL. Graduate degree credit will not be given for both CSCE 4813 and CSCE 5813. Prerequisite: CSCE 2014 with a grade of C or better or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 5823. Multiprocessor Systems on Chip. 3 Hours.}

This course covers the latest trends in advanced computer architecture for multiprocessor systems on chip for embedded and real time systems. Topics covered include multicore architectures, modeling abstractions, run time systems, and MIMD/SIMD heterogeneous architectures, \(\mathrm{Hw} / \mathrm{Sw}\) co-design techniques. Prerequisite: CSCE 3613 and CSCE 4213. (Typically offered: Irregular)

CSCE 5833. Computer Architecture Security. 3 Hours.
This course will cover fundamental principles and emerging implementation strategies to reason about, design and construct architecture level security capabilities in the manycore era. Coverage includes formal security models, new and emerging considerations for heterogeneous multiprocessor system on chip architectures, hardware and software implementation methods, operating systems for run time security enforcement. Prerequisite: CSCE 4213 or graduate standing in Computer Science Computer Engineering (CSCE). (Typically offered: Irregular)

\section*{CSCE 5843. Reconfigurable Computing. 3 Hours.}

This course will cover emerging and proposed techniques and issues in Reconfigurable Computing. Topics will include FPGA technologies, CAD/CAE tools, \(\mathrm{Hw} / \mathrm{Sw}\) co-design, system level synthesis, programming models and abstractions
Prerequisite: Graduate standing in CSCE Department. (Typically offered: Irregular)
CSCE 5853. Information Security. 3 Hours.
This course covers principles, mechanisms, and policies governing confidentiality, integrity, and availability of digital information. Topics to be covered include security concepts and mechanisms, security policies, multilevel security models, system vulnerability, threat and risk assessment, basic cryptography and its applications, intrusion detection systems. Graduate degree credit will not be given for both CSCE 4853 and CSCE 5853. Prerequisite: CSCE 3193 or Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

\section*{CSCE 590V. Advanced Individual Study. 1-3 Hour.}

Advanced graduate level individual study directed by faculty in current research topics, state of the art, or advanced methodology in one of the major computer science or computer engineering areas. (Typically offered: Irregular)

\section*{CSCE 5914. Advanced Digital Design. 4 Hours.}

To master advanced logic design concepts, including the design and testing of synchronous and asynchronous combinational and sequential circuits using state of the art CAD tools. Graduate degree credit will not be given for both CSCE 5914 and CSCE 4914 or ELEG 4914 and ELEG 5914. Corequisite: Lab component. Prerequisite: Graduate students majoring in Computer Engineering, Computer Science, or Electrical Engineering. (Typically offered: Irregular)

CSCE 5943. Computer Arithmetic Circuits. 3 Hours.
Examination of fundamental principles of algorithms for performing arithmetic operations in computers. This course provides sufficient theoretical and practical information to prepare the digital design engineer with an awareness of basic techniques for the realization of arithmetic circuits. Prerequisite: Computer Science Computer Engineering (CSCE) graduate standing. (Typically offered: Irregular)

CSCE 610V. Master's Thesis. 1-6 Hour.
Master's thesis. (Typically offered: Fall and Spring) May be repeated for degree credit

CSCE 620V. Post-Master's Research. 1-18 Hour.
Post-master's research. (Typically offered: Fall and Spring)
CSCE 690V. Doctoral Individual Study. 1-3 Hour.
Advanced doctoral level individual study directed by faculty in current research topics, state of the art, or advanced methodology in one of the major computer science or computer engineering areas. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

CSCE 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Counselor Education (CNED)}

\section*{Courses}

\section*{CNED 3053. The Helping Relationship. 3 Hours.}

Development of an understanding of the helping relationship. Topics include establishing a working alliance, problem recognition and referral to appropriate resources. Prerequisite: PSYC 2003. (Typically offered: Fall and Spring)

\section*{CNED 4003. Classroom Human Relations Skills. 3 Hours.}

A study of interpersonal skills important to improving teacher-student relationships and achievement in classrooms. Human communication systems related to motivation, achievement, and educator-student relationships are studied. The attainment of effective human relations skills is emphasized. Prerequisite: Junior or Senior standing required. (Typically offered: Fall and Spring)

CNED 5003. Counseling and Human Development. 3 Hours.
This course is intended to give students a broad overview of human nature/behavior through knowledge of lifespan developmental theory, personality development, modern \& post-modern approaches to the study of human nature/behavior, and learning theory. Throughout the course, close attention will be given to human ecology or those social/historical/cultural/environmental forces furthering or impeding development. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

\section*{CNED 5193. Clinical Mental Health Counseling. 3 Hours.}

An introductory study of community counseling. The course content includes information concerning the educational, historical, philosophical, and psychological foundations of community counseling as well as specific traits and skills of professional community counselors. In addition, the course is designed to provide introductory level concepts and skills required for future certification and licensure as counseling professionals. Prerequisite: Graduate student status. (Typically offered: Spring)

\section*{CNED 5203. Foundations of the Counseling Profession. 3 Hours.}

A study of the counseling profession applicable to school, college and community agency settings. Introduction to the basic educational, historical, philosophical foundations of counseling as well as specific traits and skills of counselors. The course is also designed to provide beginning level concepts and skills required for certification and licensure. Prerequisite: Must be taken first year in program. (Typically offered: Fall and Summer)

\section*{CNED 5213. Lifestyle \& Career Development. 3 Hours.}

Theories of career development and counseling, including the use of occupational information sources and career assessment tools and techniques. Prerequisite:
CNED 5333. (Typically offered: Summer)

\section*{CNED 5223. Introduction to School Counseling. 3 Hours.}

Philosophy, organization, and practices of a counseling program in the elementary and secondary school. The school counselor's role as counselor, consultant, and coordinator, professional identity, and legal issues are included. Includes a significant focus on ethical standards and issues. (Typically offered: Fall Even Years)

CNED 5303. Individual Appraisal. 3 Hours.
Analysis of concepts, methods, and procedures utilized in individual appraisal. (Typically offered: Fall)

CNED 5313. Program Organization and Information Management. 3 Hours.
This course addresses needs and strategies for effective development and management of school counseling programs and guidance curriculum. Prerequisite: CNED 5223. (Typically offered: Spring Odd Years)

CNED 5323. Counseling Theory. 3 Hours.
Introductory survey and critical analysis of major alternative theoretical perspectives in counseling. (Typically offered: Fall and Summer)

CNED 5333. Basic Counseling Techniques. 3 Hours.
Introduction to basic counseling techniques and skills common to multiple theoretical perspectives. Prerequisite: Master's students in Counseling. (Typically offered: Fall and Spring)

\section*{CNED 5343. Counseling Practicum. 3 Hours.}

Supervised counseling practice. CNED faculty consent required. Pre- or Corequisite: CNED 5303, CNED 5403, CNED 5363 and CNED 5373. Prerequisite: CNED 5203, CNED 5323, CNED 5333, CNED 6133, and faculty consent required. (Typically offered: Fall and Spring)

\section*{CNED 5352. Psychopharmacology. 2 Hours.}

Study of theory, research, \& practice issues pertaining to psychopharmacology for non-medical practitioners. Prerequisite: CNED 5203, CNED 5323, and CNED 5333. (Typically offered: Spring and Summer)

\section*{CNED 5363. Dynamics of Group Counseling. 3 Hours.}

Therapeutic and other theoretical information is presented regarding group process and the counselor's role in that process. An experiential group experience is required. Prerequisite: CNED 5333 and CNED 5323. (Typically offered: Fall and Spring)
CNED 5373. Ethical and Legal Issues in Counseling. 3 Hours.
Review of ethical and legal standards governing professional counselor training, research, and counseling practice; including client rights; confidentiality; the client-counselor relationship; and counseling research, training, and supervision. Prerequisite: CNED 5003 and CNED 5203. (Typically offered: Fall)

\section*{CNED 5383. Crisis Intervention Counseling. 3 Hours.}

Analysis and application of short-term counseling intervention strategies in crisis situations, with special attention to incidents involving rape, physical, or emotional abuse, divorce, suicidal depression, grief, martial or family instability, and violent conflict. Prerequisite: CNED 5333. (Typically offered: Summer)

CNED 5403. Diagnosis and Treatment in Counseling. 3 Hours.
Procedures in case management utilizing both clinical and interview data in assisting children, adolescents, and adults in educational, vocational, personal, and social planning. Prerequisite: CNED 5303, CNED 5323 and CNED 5333. (Typically offered: Fall and Spring)

\section*{CNED 5443. Vocational Rehabilitation Foundations. 3 Hours.}

Survey of the philosophy of vocational rehabilitation, including history and legislation. (Typically offered: Fall Even Years)

\section*{CNED 5453. Medical Aspects of Disability. 3 Hours.}

Orientation to medical and medically related aspects of various disabling conditions with emphasis on the severely disabled. (Typically offered: Spring Even Years)

\section*{CNED 5463. Rehabilitation Case Management. 3 Hours.}

Counseling process in the rehabilitation setting. Focusing upon effective counseling strategies, representative cases, and effective case management methods.
(Typically offered: Spring Odd Years)
CNED 5473. Psychological Aspects of Disability. 3 Hours.
Intensive study of the psychological aspects of adjustment to atypical physique and prolonged handicapping condition. (Typically offered: Fall Odd Years)

\section*{CNED 5483. Counseling Research. 3 Hours.}

An in-depth examination of counseling research methodology and issues to prepare students to critically evaluate and use counseling research in their professional practice. (Typically offered: Fall, Spring and Summer)

CNED 5493. Principles and Practices of Psychiatric Rehabilitation. 3 Hours.
The course introduces students to the principles and practices of recovery-oriented, evidence-based psychiatric rehabilitation. Through lectures, guest presentations, films, discussions, and readings, students (a) explore the clinical, psychosocial, and vocational aspects of psychiatric disabilities and (b) examine psychiatric rehabilitation principles and practices to facilitate community integration and successful employment outcomes for individuals with psychiatric disabilities. (Typically offered: Fall)

\section*{CNED 5513. Counseling and Human Diversity. 3 Hours.}

Examination of human and cultural diversity, emphasizing issues of race, class, and socioeconomic status, and how they impact our clients as individuals and as family and society members. (Typically offered: Summer)

\section*{CNED 5533. Introduction to Adventure Therapy. 3 Hours.}

This course builds on the foundational understanding of group counseling theory and skills by introducing students to Adventure Therapy (AT), an activity-oriented form of group counseling. Students will integrate previous knowledge pertaining to group counseling with new AT concepts as well as review issues related to current research, best practices, and working with diverse populations. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
CNED 5541. Telemental Health Counseling. 1 Hour.
A study of the process, application, and implementation of technology-assisted counseling/therapy that meets state academic requirements for the distance delivery of clinical services. Emphasis will include integration of ethical and social responsibility, current standards of practice for distance delivery, and appropriateness of services with diverse individuals, relationships, and families. Prerequisite: CNED 5203, CNED 5323, and CNED 5333. (Typically offered: Spring and Summer)
CNED 5583. Placement of Persons with Disabilities. 3 Hours.
Focuses on placement theory and practice as they apply to persons who experience disabilities. Special attention is given to RehabMark approach. (Typically offered: Summer)

\section*{CNED 574V. Counseling Internship. 1-9 Hour.}

A 600-clock-hour field placement in an approved setting over a minimum of two continuous semesters. For students completing a counseling internship in a school setting, successful completion of a criminal background check is required before beginning internship. Pre- or Corequisite: CNED 5213. Prerequisite: CNED 5203, CNED 5303, CNED 5323, CNED 5333, CNED 5343, CNED 5363, CNED 5373, CNED 5403, CNED 5513. CNED faculty consent required. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

\section*{CNED 6003. Theories and Foundations of Addictions. 3 Hours.}

A study of behavioral and substance addictions, including an overview of differential treatment. Prerequisite: CNED 5323 and CNED 5333, and admission to the CNED masters or doctoral program or departmental consent. (Typically offered: Spring and Summer)

CNED 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

CNED 6013. Advanced Counseling Theory and Methods. 3 Hours.
Critical analysis of major theoretical perspectives in counseling, including both group and individual counseling strategies for dealing with affective, cognitive, and behavioral dysfunction. Prerequisite: CNED doctoral standing or permission. (Typically offered: Spring Even Years)

CNED 6023. Foundations of Marriage and Family Counseling Therapy. 3 Hours. Comprehensive exploration of the current theories/techniques of marriage, family and couples counseling. Prerequisite: CNED 5323 and CNED 5333 and CNED doctoral or masters standing or permission. (Typically offered: Summer)

CNED 6033. Advanced Group Theory and Methods. 3 Hours.
Comparative study of theories and processes of group counseling. Includes supervised experience in group facilitation with video recording and playback. Prerequisite: CNED 5363 or equivalent and CNED doctoral or masters standing or permission. (Typically offered: Spring Odd Years)
CNED 6043. Supervision of Counselors. 3 Hours.
Analysis, assessment, and practical application of counselor supervision techniques in treatment and training programs. Prerequisite: CNED doctoral standing and CNED faculty consent (Typically offered: Fall Even Years)

CNED 605V. Independent Study. 1-18 Hour.
Independent study. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

\section*{CNED 6073. Advanced Research in Counseling. 3 Hours.}

This course involves acquiring a knowledge and understanding of the use of research in counseling and the development of new research in the counseling profession that has heuristic value. Prerequisite: Graduate standing. (Typically offered: Spring)
CNED 6093. Counseling Children and Adolescents Through Play. 3 Hours. Introduction to counseling children and adolescents through play; including the process, theories, techniques, and materials applicable to children and adolescents in a pluralistic society. Prerequisite: CNED 5323, CNED 5333, CNED 6133, and CNED doctoral or masters standing or permission. (Typically offered: Spring)

CNED 6133. Introduction to Play Therapy. 3 Hours.
This course is an introduction to the basic concepts of child-centered play therapy (CCPT). Students will learn the conceptual framework of child-centered play therapy, as well as the attitudes and skills necessary to establish and maintain facilitative relationships with children that encourage their self-expression and facilitate change. Prerequisite: CNED 5323 and CNED 5333 and CNED doctoral or masters standing or consent. (Typically offered: Irregular)

CNED 6143. Teaching Counselor Education and Supervision. 3 Hours.
This course is designed to enhance the professional development and acculturation of doctoral students in order to facilitate their success as instructors of counselor education and supervision. Prerequisite: CNED doctoral status or permission from faculty. (Typically offered: Fall Odd Years)

CNED 6223. Foundations of Counselor Education and Supervision. 3 Hours. This course is designed to enhance the professional development and acculturation of doctoral students in order to facilitate their success in professional leadership roles of counselor education, supervision, counseling practice, and research competencies. Prerequisite: CNED Doctoral status or permission. (Typically offered: Spring Odd Years)

\section*{CNED 6243. Disability Policy in the U.S.. 3 Hours.}

An analysis of public policy approaches to disability in the U.S. Examines the political and philosophical origins of disability policy; reviews major disability legislation and its effects on policy stakeholders; describes recent initiatives; and analyzes evolution of disability policy within context of changing societal, economic, and political conditions. (Typically offered: Fall)

\section*{CNED 6343. Cultural Foundations and Counseling. 3 Hours.}

To gain learning experiences in pedagogy relevant to multicultural issues and competencies, including social change theory and advocacy action planning. To identify current multicultural issues as they relate to social change theories, ethical and legal considerations, disability, gender, sexuality, social justice, and advocacy models. Prerequisite: CNED or RHAB Doctoral Standing or Permission. (Typically offered: Fall Even Years)

\section*{CNED 6713. Advanced Counseling Practicum. 3 Hours.}

Supervised counseling practice. A 100-clock hour approved practical counseling experience. Prerequisite: CNED doctoral standing and permission of CNED faculty and Clinical Coordinator. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{CNED 674V. Internship. 1-18 Hour.}

Supervised field placement (Clinical/Instructorship/Supervision/Research).
Prerequisite: CNED doctoral standing, CNED faculty consent and CNED Clinical Coordinator consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

CNED 699V. Seminar. 1-18 Hour.
Seminar. Prerequisite: CNED Doctoral standing or permission. (Typically offered: Summer) May be repeated for up to 18 hours of degree credit.

CNED 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy and consent. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Criminology (CRIM)}

\section*{Courses}

CRIM 2003. Introduction to Criminology and Criminal Justice (ACTS Equivalency = CRJU 1023). 3 Hours.
Introduction to the field of criminology and the criminal justice system, including theories and patterns of criminal behavior, how criminal justice data are collected, social research methods, historical foundations of the field, institutions, and types of crimes and offenders. Provides a foundation for further criminological and theoretical studies. (Typically offered: Fall, Spring and Summer)

\section*{CRIM 2003H. Honors Introduction to Criminology and Criminal Justice. 3}

\section*{Hours.}

An introduction to the field history, development, and theoretical underpinnings of criminology and the criminal justice system, including theories aspects such as law enforcement, the courts, and patterns of criminal behavior, how criminal justice data are collected, social research methods, historical foundations of the field, institutions, and types of crimes and offenders. Provides a foundation for further criminological and theoretical studies. Prerequisite: Honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CRIM 2003.

\section*{CRIM 2043. Sociology of Criminal Law. 3 Hours.}

Explores the history of criminal law in the United States, the construction of crime and punishment, and issues facing the contemporary legal system. (Typically offered: Fall and Spring)

\section*{CRIM 2513. Criminal Investigation. 3 Hours.}

Survey of the theories, concepts, and legal conditions concerning the techniques used in the location, preservation and presentation of evidence. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring)

\section*{CRIM 3011. Special Topics. 1 Hour.}

Designed to develop the tools to write effectively in the social sciences, including skills related to organizing manuscripts, writing problem statements, identifying and synthesizing research, and revising and editing. Prerequisite: SOCI 2013 or CRIM 2003. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.
This course is cross-listed with SOCI 3011.
CRIM 3023. Criminological Theory. 3 Hours.
Advanced survey of theories of crime causation. Examines broad sociological paradigms, as well as both individual and aggregate-level explanations of crime causation. Applies criminological theories to contemporary issues associated with crime and criminal justice. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

\section*{CRIM 3023H. Honors Criminological Theory. 3 Hours.}

Advanced survey of theories of crime causation. Examines broad sociological paradigms, as well as both individual and aggregate-level explanations of crime causation. Applies criminological theories to contemporary issues associated with crime and criminal justice. Prerequisite: SOCI 2013 and junior standing. (Typically offered: Fall and Spring)
This course is equivalent to CRIM 3023.

\section*{CRIM 3043. The Police and Society. 3 Hours.}

Overview of origins, theories, development, practice, and current issues in policing in contemporary society. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring)

\section*{CRIM 3053. Serial Crime. 3 Hours.}

Historical development of criminal profiling in serial homicide, including sex crimes, stalking, and arson. Focuses on behavioral and criminological theory and a critical examination of different profiling methodologies. Prerequisite: SOCI 2013. (Typically offered: Irregular)
This course is cross-listed with SOCI 3053.
CRIM 3063. Victimology. 3 Hours.
Introduction to the scientific study of victimization. Examines conceptual boundaries of victimology research, covers theories, statistics and trends relevant to victimology, reviews the victim blaming and defending perspectives, explores practical applications of victimology, and the social, legal, and evaluates criminological issues that stem from concern over victims. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is cross-listed with SOCI 3063.

\section*{CRIM 3203. Corrections and Social Control. 3 Hours.}

Overview of correctional systems and punishment. Focuses on theories of correctional philosophies, practices, and procedures, along with the historical development and modern practices of corrections, sentencing, facilities, and issues facing correctional populations. Examines principles and practices of treatment and rehabilitation. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring) This course is cross-listed with SOCI 3203.

CRIM 3413. Special Topics. 3 Hours.
Designed to cover specialized topics not usually presented in regular courses. Prerequisite: SOCI 2013. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{CRIM 3413H. Honors Special Topics. 3 Hours.}

Designed to cover specialized topics not usually presented in regular courses. Prerequisite: Honors standing and SOCI 2013. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to CRIM 3413.
CRIM 3443. Stratification and Crime. 3 Hours.
Examines how race, age, gender, social class, and geographic location impact criminal offending, victimization, and arrest. Subsequently, it explores how the criminal justice system stages of policing, sentencing, and incarceration further entrench or mitigate disparities across social strata group. Prerequisite: SOCI 2013. (Typically offered: Spring)

\section*{CRIM 3453. Immigration and Crime. 3 Hours.}

Provides a comprehensive foundation of the relationship between immigration, one of the most powerful forces that influences a nation's social fabric, and crime. Focuses not only on U.S. immigration but also crime in the global context. Prerequisite: SOCI 2013. (Typically offered: Fall)
This course is cross-listed with SOCI 3453.
CRIM 3503. Criminal Procedures. 3 Hours.
Critical examination of how individual rights and police procedures are balanced with focus on arrests, use of force, identification, and search and seizure. Prerequisite: CRIM 2003. (Typically offered: Irregular)

CRIM 3513. Criminal Evidence. 3 Hours.
Examination of how evidence is collected, processed, and presented in court, with an emphasis on the competing interests of crime control and individual liberties. Prerequisite: CRIM 2003. (Typically offered: Irregular)

\section*{CRIM 3723. Deviant Behavior. 3 Hours.}

Sociological overview of disconcerting conduct, its definition, theoretical understandings and research. Specific topics may include: interpersonal violence, self-destructive disorders, controversial lifestyles, substance abuse, as well as the relationship between inequality and disturbing acts. Prerequisite: SOCI 2013. (Typically offered: Irregular)
This course is cross-listed with SOCI 3723.

\section*{CRIM 399VH. Honors Course. 1-6 Hour.}

Undergraduate honors thesis hours designed to engage in advanced undergraduate research under the direction of a faculty advisor. Prerequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

\section*{CRIM 4003. Internship in Criminal Justice and Criminology. 3 Hours.}

Supervised experience in municipal, county or state criminal justice agency, or any other agency which is approved by instructor. Prerequisite: CRIM 2003. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{CRIM 4013. SPECIAL TOPICS. 3 Hours.}

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{CRIM 403V. Individual Study. 1-3 Hour.}

In-depth individual or group study with a faculty member on advanced sociological readings and/or to participate in supervised research as an experience-based course. Faculty permission required in advance of enrollment. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

CRIM 4063. Organizations in Society. 3 Hours.
Review of literature on work and organizations, with focus on race, class, gender inequalities, and interactions between society and organizations; discussion of topics related to white collar crime and deviant behavior inside modern corporations. Prerequisite: SOCI 2013. (Typically offered: Spring)
This course is cross-listed with SOCI 4063.
CRIM 4143. Juvenile Justice. 3 Hours.
Examination of juvenile justice system and juvenile crime, including historical development of the system and treatment of juvenile delinquents along with legal, correctional, and treatment processes and philosophies. Emphasis on current issues facing delinquents, the system, and delinquency prevention in addition to trends in juvenile crime. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring) This course is cross-listed with SOCI 4143.

\section*{CRIM 4223. Criminal Violence. 3 Hours.}

Explores definitions, patterns, explanations, and potential interventions of aggression and criminal violence. Discusses the temporal, spatial, and demographic patterns of violence in the United States. Assesses various explanations of violence and considers possible interventions. Examines the literature on the structural- and individual-level correlates of violent criminal offending. Prerequisite: CRIM 2003 and junior standing. (Typically offered: Spring)

\section*{CRIM 4233. Death Penalty. 3 Hours.}

Examines problems and social issues related to the death penalty in the U.S., including the history of capital punishment, Supreme Court decisions, how various jurisdictions seek the death penalty, the comparative costs of incarceration and execution, miscarriages of justice, and how the criminal justice system responds to these issues. Prerequisite: CRIM 2003 or SOCI 2013. (Typically offered: Irregular) This course is cross-listed with SOCI 4233.

\section*{CRIM 4303. Spatial Analyses for Social Data. 3 Hours.}

Focuses on learning about spatial data and how to use spatial analyses to detect patterns and answer research questions related to crime occurrence. Emphasizes how results translate to practitioner efforts and policy. (Typically offered: Spring)

\section*{CRIM 4443. Terrorism and Homeland Security. 3 Hours.}

Examines the evolution of modern terrorism and homeland security, focusing primarily on the dynamics of American terrorist movements (ideologies, motives, and tactics). Social, political, and criminal justice responses to terrorism are also considered. Prerequisite: Junior standing. (Typically offered: Spring)

\section*{Crop, Soil and Environmental Sciences (CSES)}

\section*{Courses}

CSES 1203. Introduction to Plant Sciences. 3 Hours.
An introduction to basics of agricultural crop plant structure, growth, and production. (Typically offered: Fall and Spring)

\section*{CSES 2013. Pest Management. 3 Hours.}

Introduction to basic principles of pest management as they relate to vertebrate animals, insects, plant disease and weeds. Selected pests are studied with emphasis on current management approaches and alternative pest control. (Typically offered: Spring)

\section*{CSES 2101L. Crop Science Laboratory. 1 Hour.}

A series of laboratory experiments designed to reinforce principles of plant growth and development, reproduction, classification, and the utilization of plant products. Emphasis is placed on major crop plant species. Experiments are conducted by individuals or by teams. Laboratory consists of a single, 2-hour period each week. Required for Crop Management majors. Corequisite: CSES 2103. (Typically offered: Spring)

\section*{CSES 2103. Crop Science. 3 Hours.}

Principles of crop growth, development, and utilization and how these principles relate to production. Emphasis on major agronomic crop species. Lecture 3 hours per week. (Typically offered: Spring)

\section*{CSES 2201L. Soil Science Laboratory. 1 Hour.}

Field and laboratory exercises related to the study of the physical, chemical, and biological properties of soils. Laboratory mandatory for all crop management and environmental, soil, and water science majors and optional for others. Laboratory 2 hours per week. Pre- or Corequisite: CSES 2203. (Typically offered: Fall and Spring)

CSES 2203. Soil Science. 3 Hours.
Origin, classification, and physical, chemical, and biological properties of soils. Lecture 3 hours, discussion 1 hour per week. Corequisite: Drill component. Prerequisite: MATH 1203 or higher (to include MATH 1213, MATH 1284C, MATH 1514, MATH 2213, MATH 2043, MATH 2053, MATH 2445, MATH 2514, MATH 2554, MATH 2564, or MATH 2574) and CHEM 1103 or CHEM 1073. (Typically offered: Fall and Spring)

\section*{CSES 3023. Crop, Soil, and Environmental Sciences Colloquium. 3 Hours.} A communication-intensive course covering topics in agronomy and environmental, soil, and water science with particular emphasis on spoken communication but also including written communication, group activities, professionalism, ethics, problem solving, and information retrieval. A student-oriented class with collaborative participation. Colloquium workshop: 3 hours per week. Prerequisite: COMM 1313 and Junior or Senior standing only. (Typically offered: Fall)

CSES 3214. Soil Resources and Nutrient Cycles. 4 Hours.
Integration of the fundamental concepts of the biological, chemical, and physical properties of soil systems and their roles in managing soil resources. Lecture 3 hours, laboratory 3 hours per week. Pre- or Corequisite: BIOL 2013 and BIOL 2011L. Corequisite: Lab component. Prerequisite: CSES 2203. (Typically offered: Spring Odd Years)

\section*{CSES 3312. Cotton Production. 2 Hours.}

Principles and techniques associated with production of cotton. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Fall Even Years)

\section*{CSES 3322. Soybean Production. 2 Hours.}

An overview of the history and utilization of soybean as well as the physiological and environmental basis for the development of economical soybean production practices. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Spring Odd Years)

\section*{CSES 3332. Rice Production. 2 Hours.}

A study of the principles and practices involved in rice culture worldwide with major emphasis on the United States. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Fall Odd Years)

\section*{CSES 3342. Cereal Grain Production. 2 Hours.}

An overview of the botany, production, cultural practices, soil \& climatic adaptation and utilization of the major cereal grain crops. Prerequisite: CSES 1203 or CSES 2103. (Typically offered: Spring Even Years)

CSES 355V. Soil Profile Description. 1-2 Hour.
Training for soil profile description writing and membership of judging teams. (Typically offered: Fall) May be repeated for up to 8 hours of degree credit.

\section*{CSES 3703. Precision Agriculture for Crops. 3 Hours.}

This course will provide students with a practical understanding of precision agriculture and crop/ecosystem monitoring with remote and proximal sensing technology. Prerequisite: MATH 1203 and CSES 1203. (Typically offered: Spring)

CSES 400V. Special Problems. 1-6 Hour
Work on special problems in crop, soil and environmental sciences or related field. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{CSES 4013. Advanced Crop Science. 3 Hours.}

Fundamental concepts of crop physiology, crop improvement, seed science, and crop production systems. Recitation 3 hours per week. Prerequisite: CSES 2103 and CSES 2203. (Typically offered: Spring)

CSES 402V. Special Topics. 1-3 Hour.
Studies of selected topics in crop, soil and environmental sciences not available in other courses. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{CSES 4103. Plant Breeding. 3 Hours.}

Basic principles involved in plant breeding programs to improve crop plants and seed programs. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: ANSC 3123 or BIOL 2323. (Typically offered: Fall Even Years)

CSES 4133. Ecology and Morphology of Weedy and Invasive Plants. 3 Hours.
Study of weeds as economic pests occurring in both agricultural and nonagricultural situations and including poisonous plants and other specific weed problems. Gross morphological plant family characteristics which aid identification, habitat of growth and distribution, ecology, competition, and allelopathy are discussed. Lecture 2 hours, laboratory 2 hours a week. Corequisite: Lab component. Prerequisite: CSES 2103 or HORT 2003. (Typically offered: Fall)

CSES 4143. Principles of Weed Control. 3 Hours.
Advanced concepts and technology used in modern weed control practices and study of the chemistry and specific activity of herbicides in current usage. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CHEM 1073 and CHEM 1071L. (Typically offered: Spring)

\section*{CSES 4224. Soil Fertility. 4 Hours.}

Study of the soil's chemical, biological and physical properties, and human modification of these properties, as they influence the uptake and utilization of the essential nutrients by plants. Lecture 3 hours, laboratory 2 hours per week. Preor Corequisite: CHEM 1123 and CHEM 1121L or (CHEM 1073 and CHEM 1071L and CHEM 2613 and CHEM 2611L). Corequisite: Lab component. Prerequisite: CSES 2201L and CSES 2203. (Typically offered: Fall)

\section*{CSES 4253. Soil Classification and Genesis. 3 Hours.}

Lecture and field evaluation of soil properties and their relation to soil genesis and soil classification with emphasis on soils of Arkansas. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L. (Typically offered: Fall Odd Years)

CSES 4553. Wetland Soils. 3 Hours.
This course explains the chemical, physical, and morphological characteristics of wetland soils and describes the techniques for identifying wetland soils using field indicatiors and monitoring equipment. This course also explains principles of wetland creation, restoration, and mitigation - all key components in assuring the sustainability of valuable wetland resources. Prerequisite: CSES 2203 and CSES 2201L or CSES 355V. (Typically offered: Spring Odd Years)

CSES 462V. Internship. 1-6 Hour.
Supervised practical work experience in agronomy and environmental science to develop and demonstrate professional competence. Faculty approval of project proposal prior to enrollment and written and oral reports after the project is complete are required. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

CSES 5001. Weed Science Practicum. 1 Hour.
Training for membership on weed team, through participation. Prerequisite: Graduate standing. (Typically offered: Summer)

\section*{CSES 5013. Crop Physiology. 3 Hours.}

Understanding and quantitative measurement of physiological processes, plant responses, and environmental parameters in relation to the production of crops. Prerequisite: BIOL 4303. (Typically offered: Spring Even Years)

\section*{CSES 5023. Physiology of Herbicide and Plant Interaction. 3 Hours.}

The reproduction, growth, and development of weeds and the ecological factors affecting these processes; development and mechanisms of herbicide resistance, flow of herbicide-resistance genes; and development of herbicide-resistant crops. Corequisite: Lab component. Prerequisite: CSES 4143 or CSES 5143 (formerly CSES 4143) and (BIOL 4303 or CHEM 5813). (Typically offered: Spring Odd Years)

CSES 502V. Special Problems Research. 1-6 Hour.
Original investigations on assigned problems in agronomy. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

\section*{CSES 5033. Advanced Soil Fertility and Plant Nutrition. 3 Hours}

Study of water uptake, ion absorption, translocation and metabolism in higher plants. Lecture 3 hours per week. Prerequisite: BIOL 4303 and CHEM 2613 and CHEM 2611L. (Typically offered: Spring Even Years)

CSES 504V. Special Topics. 1-4 Hour
Topics not covered in other courses or a more intensive study of specific topics in agronomy. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

CSES 5073. Advanced Crop Science. 3 Hours.
Fundamental concepts of crop physiology, crop improvement, seed science, and crop production systems. Recitation 3 hours per week. Graduate degree credit will not be given for both CSES 4013 and CSES 5073. (Typically offered: Fall)

\section*{CSES 5083. The Business of Plant Breeding. 3 Hours.}

Students will gain knowledge and develop skills in five areas central to successful execution of plant breeding in private and public environments: 1) breeding industry, 2) breeding goals, new product development and marketing, 3) breeding budgets and finance, 4) regulations of the breeding industry, and 5) leadership basics. (Typically offered: Fall Odd Years)

CSES 5093. Plant Breeding. 3 Hours.
Basic principles involved in plant breeding programs to improve crop plants and seed programs. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both CSES 4103 and CSES 5093. Corequisite: Lab component. Prerequisite: ANSC 3123 or BIOL 2323. (Typically offered: Fall Even Years)

CSES 5103. Scientific Presentations. 3 Hours.
Experience in procedures required for professional presentations of scientific papers, seminars, posters; and research findings at meetings in conferences, and with discussion groups. Instruction in organization of materials, visual aids, and good speaking habits. Lecture 3 hours per week. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{CSES 5114. Soil Fertility. 4 Hours}

Study of the soil's chemical, biological and physical properties, and human modification of these properties, as they influence the uptake and utilization of the essential nutrients by plants. Lecture 3 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both CSES 4224 and CSES 5114. Corequisite: Lab component. (Typically offered: Fall)

CSES 5133. Ecology and Morphology of Weedy and Invasive Plants. 3 Hours.
Study of weeds as economic pests occurring in both agricultural and nonagricultural situations and including poisonous plants and other specific weed problems. Gross morphological plant family characteristics which aid identification, habitat of growth and distribution, ecology, competition, and allelopathy are discussed. Lecture 2 hours, laboratory 2 hours a week. Graduate degree credit will not be given for both CSES 4133 and CSES 5133. Corequisite: Lab component. Prerequisite: CSES 2103 or HORT 2003. (Typically offered: Fall)
CSES 5143. Principles of Weed Control. 3 Hours.
Advanced concepts and technology used in modern weed control practices and study of the chemistry and specific activity of herbicides in current usage. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both CSES 4143 and CSES 5143. Corequisite: Lab component. Prerequisite: CHEM 1073 and CHEM 1071L. (Typically offered: Spring)
CSES 5214. Analytical Research Techniques in Agronomy. 4 Hours.
Preparation and analysis of plant and soil samples utilizing spectrophotometry, isotopes, and chromatographic separation methods. Additionally, measurements are made of photosyntheses, respiration, water relationships, light, and temperatures in whole plants. Lecture 2 hours, laboratory 4 hours per week. Corequisite: Lab component. Prerequisite: BIOL 4303 and CHEM 2613 and CHEM 2611L. (Typically offered: Fall Even Years)
CSES 5224. Soil Physics. 4 Hours.
Physical properties of soils and their relation to other soil properties, growth of plants and transport of water, oxygen, heat, and solutes such as pesticides and plant nutrients. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CSES 2203 and MATH 1203. (Typically offered: Spring)

\section*{CSES 5253. Soil Classification and Genesis. 3 Hours.}

Lecture and field evaluation of soil properties and their relation to soil genesis and soil classification with emphasis on soils of Arkansas. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both CSES 4253 and CSES 5253. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L. (Typically offered: Fall Odd Years)

\section*{CSES 5264. Microbial Ecology. 4 Hours.}

A study of the microorganisms in soil and the biochemical processes for which they are responsible. Lecture 3 hours, laboratory 3 hours per week. Additional suggested prerequisites are BIOL 2013, CSES 2203, and ENSC 3003. Corequisite: Lab component. Prerequisite: BIOL 1543 and BIOL 3863 or ENSC 3223. (Typically offered: Fall Odd Years)

\section*{CSES 5453. Soil Chemistry. 3 Hours.}

Application of the principles of chemistry to processes of agronomic and environmental importance in soils. Soil clay mineralogy, soil solution thermodynamics, structure and reactivity of humus, surface complexation and ion exchange, electro-chemical phenomena, and colloidal stability. Prerequisite: CSES 2203 and CHEM 1123 and CHEM 1121L. (Typically offered: Fall Even Years)

\section*{CSES 5533. Wetland Soils. 3 Hours.}

This course explains the chemical, physical, and morphological characteristics of wetland soils and describes the techniques for identifying wetland soils using field indicatiors and monitoring equipment. This course also explains principles of wetland creation, restoration, and mitigation - all key components in assuring the sustainability of valuable wetland resources. Graduate degree credit will not be given for both CSES 4553 and CSES 5533. Prerequisite: CSES 2203 and CSES 2201L or CSES 355V. (Typically offered: Spring Odd Years)

\section*{CSES 5543. Plant Genomics. 3 Hours.}

Plant genetics based on the study of whole genome sequence, transcriptome and proteome. Provides an overview of the principles and techniques of experimental and in silico genomics. Covers all areas of genome research including structural, comparative and functional genomics as well as proteomics. Prerequisite:
CHEM 5843 or any graduate level genetics course. (Typically offered: Spring Even Years)
CSES 5653. Fate and Transport of Organic Contaminants. 3 Hours.
Fate and Transport of Organic Contaminants will present an overview of the transformation and transport processes that influence the environmental fate of organic contaminants, with an emphasis on agricultural pesticides. Biotic and abiotic factors influencing the movement and behavior of organic contaminants in soil and water will be covered extensively, with an emphasis on chemical mechanisms. Prerequisite: CHEM 1123 and CHEM 1121L and CSES 2203, or instructor consent. (Typically offered: Spring Odd Years)

\section*{CSES 5703. Precision Agriculture Data. 3 Hours.}

This course will provide students with a holistic understanding of precision agriculture and crop/ecosystem monitoring with remote and proximal sensing technology. The course will also provide students with practical experience working with spatial data using GIS software in the context of precision agriculture. (Typically offered: Spring)

\section*{CSES 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
CSES 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Curriculum and Instruction (CIED) \\ \section*{Courses}}

CIED 1003. Introduction to Technology in Education. 3 Hours.
A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning. (Typically offered: Fall, Spring and Summer)
CIED 1013. Introduction to Education. 3 Hours.
Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. An 18-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings is incorporated in this introductory course to education. (Typically offered: Fall and Spring)
CIED 2083. Innovation and Creativity in Daily Practice. 3 Hours.
Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

CIED 2943. Foundations of Language and Literacy. 3 Hours.
A foundational study of language and literacy with an emphasis on content knowledge for teachers that is essential to the components and principles of science-based literacy. Corequisite: CIED 3113. (Typically offered: Fall and Spring)

\section*{CIED 3013. Development and Learning Theories in the K-6 Classroom. 3} Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: PELED or CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

\section*{CIED 3013H. Honors Development and Learning Theories in the K-6} Classroom. 3 Hours.
This course allows students to cultivate an understanding of how elementary students develop, process information, and learn; studies educational applications pertaining to theories of development, intelligence, and thinking dispositions. Students study various learning theories, their implications for instruction, and their role in the K-6 classroom. Field experience required. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3013.

\section*{CIED 3023. Survey of Exceptionalities. 3 Hours.}

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)

\section*{CIED 3023H. Honors Survey of Exceptionalities. 3 Hours.}

A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: Honors standing, CIED 1013, or MUED 2012, or AGED 1123, or PSYC 2003. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3023.
CIED 3033. Classroom Learning Theory. 3 Hours.
A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003. (Typically offered: Fall, Spring and Summer)

\section*{CIED 3033H. Honors Classroom Learning Theory. 3 Hours.}

A survey of the major theories of learning with special emphasis on human learning and implications for education. Field experience required. Prerequisite: Honors standing and (CIED 1013; or MUED 2012; or PHED 1003; or AGED 1123; or PSYC 2003). (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 3033.

\section*{CIED 3053. The Emerging Adolescent. 3 Hours.}

This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite: CIED 1013. (Typically offered: Fall and Spring)
CIED 3103. Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Prerequisite: CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or PSPED major. (Typically offered: Fall and Spring)

CIED 3103H. Honors Children and Adolescent Literature. 3 Hours.
A survey of children's literary works, authors, and illustrators with emphasis on elementary grade and adolescent literature. Corequisite: CIED 3113. Prerequisite: CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3103.

CIED 3113. Emergent Literacy. 3 Hours.
An understanding of emergent literacy development through a study of sciencebased literacy pedagogy and practical field experiences. Field experience required. Corequisite: CIED 2943. Prerequisite: ENGL 1013, ENGL 1023, and CHEDBS or ELELBS or HDFSBS BRKD or HDFSBS CDEV or SPEDBS major. (Typically offered: Fall and Spring)

\section*{CIED 3113H. Honors Emergent Literacy. 3 Hours.}

This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years. Field experience required. Prerequisite: ENGL 1013, ENGL 1023, and CIED 3262, CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring) This course is equivalent to CIED 3113.

\section*{CIED 3123. Mathematics Methods in the K-6 Classroom. 3 Hours.}

An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials. Field experience required. Prerequisite: MATH 1203, MATH 2213, MATH 2223, and (CHEDBS or ELELBS major). (Typically offered: Fall and Spring)

\section*{CIED 3133. Integrated Social Studies for the K-6 Classroom. 3 Hours.}

Focuses on the methodology of facilitating elementary students' development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies. Field experience required. Prerequisite: CHEDBS or ELELBS major, and PLSC 2003 and (HIST 2003 or HIST 2013), and (HIST 1113 or HIST 1123), and (GEOS 1123 or ANTH 1023), and (ECON 3053 or ECON 2143), and (ARHS 1003 or MLIT 1003). (Typically offered: Fall and Spring)

\section*{CIED 3453. Developmental Literacy. 3 Hours.}

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, and admission into ELELBS or CHEDBS programs. (Typically offered: Fall and Spring)

\section*{CIED 3453H. Honors Developmental Literacy. 3 Hours.}

A deep and comprehensive application of the development of literacy skills from decoding to fluent, comprehending readers. Field experience required. Prerequisite: CIED 2943, CIED 3113, admission into ELELBS or CHEDBS programs, and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to CIED 3453.
CIED 3901H. Honors Curriculum and Instruction Education Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA majors. (Typically offered: Fall, Spring and Summer)

\section*{CIED 4003. Elementary Seminar. 3 Hours.}

This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to elementary students. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)
CIED 4013. Capstone Course for Foreign Language Licensure. 3 Hours.
This course is designed to identify and provide evidence of content language specific proficiencies in the four skills of reading, writing, listening, and speaking a foreign language. (Typically offered: Spring)

CIED 4023. Teaching in Inclusive Secondary Settings. 3 Hours.
This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students. (Typically offered: Summer)

CIED 4113. Integrated Communication Skills for the K-6 Classroom. 3 Hours.
Focuses on the methodology of facilitating elementary students' literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4113H. Honors Integrated Communication Skills for the K-6 Classroom. 3 Hours.

Focuses on the methodology of facilitating elementary students? literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Prerequisite: COMM 1313 or COMM 2323 and CHEDBS or ELELBS major and honors. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4113.

\section*{CIED 4123. Literacy Assessment and Interventions in the Elementary} Classroom. 3 Hours.

An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4131. Practicum for Secondary and Multilevel Tracks in Education. 1 Hour.
This practicum is a requirement for entry into the EDUC MA, Master of Arts in Teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours in grades K-12. Students enrolled in the multilevel track will be placed in a combination of elementary, middle, and high school settings. Students enrolled in the secondary track will be placed in a combination of middle and high school settings. Prerequisite: Cleared background check. (Typically offered: Spring and Summer)

CIED 4133. Measurement and Research in the K-6 Classroom. 3 Hours. This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall)

CIED 4143. Curriculum Design and Applications of Instructional Practice. 3 Hours.
A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed. Corequisite: CIED 4173. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

CIED 4153. Classroom Management in the Elementary Grades. 3 Hours.
This course focuses on a number of different management techniques for elementary classrooms that can be used in general education settings. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4163. Senior Project. 3 Hours.
This course is designed to provide students with the research skills necessary to complete their senior project. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Summer)

CIED 4173. Student Teaching. 3 Hours.
Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members Prerequisite: CHEDBS or ELELBS major. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

CIED 4183. Instruction and Assessment of Writing. 3 Hours.
Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Corequisite: CIED 3453. Prerequisite: CIED 2943, CIED 3113, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

CIED 4183H. Honors Instruction and Assessment of Writing. 3 Hours. Develop knowledge, skills and dispositions about writing processes, genres, and pedagogy. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, honors standing and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)
This course is equivalent to CIED 4183.
CIED 4285. Teaching Experience. 5 Hours.
The teaching experience is an essential component of the Bachelor of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. Teacher candidates are placed in K-12 or 7-12 levels depending on their content area for licensure. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Spring)

CIED 4363. Disciplinary Literacy in the K-6 Classroom. 3 Hours.
Focuses on the methodology of extending K-6 learners' basic literacy development, as a foundation for intermediate and disciplinary literacy. Emphasis is on the engagement of students in the distinct reading, writing, speaking, and listening requirements of different disciplines. Prerequisite: CIED 3113 and CHEDBS or ELELBS major. (Typically offered: Fall and Spring)

CIED 4403. Understanding Cultures in the Classroom. 3 Hours.
This course provides pre-and in-service teachers knowledge and skills necessary for educating ethnically and linguistically diverse classrooms. Students have the opportunity to understand positive relationships while removing stereotypes and prejudices. It addresses issues for social justice education through understanding ways that children learn and communicate in their homes and communities. Students will examine how topics in multicultural education inform instructional goals, curriculum planning/implementation, and teaching practices across content areas in public K-12 classrooms. This course meets the AR teaching license ESL endorsement requirements for a culture course. Some sections of this course will contain a service learning component. (Typically offered: Fall)

CIED 4413. Acquiring a Second Language. 3 Hours.
The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English. (Typically offered: Spring)

CIED 4423. Teaching English as a Second Language. 3 Hours.
This course is designed to provide teacher candidates with the basic knowledge and teaching skills necessary to address the linguistic needs of English language learners (ELLs) in regular classrooms. The students in this class will learn about and use multiple strategies for promoting ELLs' reading, writing, listening, and speaking skills. Emphasis will be placed especially on differentiating early reading instruction for ELLs. Prerequisite: CHEDBS or ELELBS major. (Typically offered: Spring)

\section*{CIED 4433. The Moral Mind in Action. 3 Hours.}

The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Fall)

\section*{CIED 4443. Moral Courage. 3 Hours.}

Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K-16 character education programs are discussed. (Typically offered: Spring)

\section*{CIED 4463. Culture and Learning. 3 Hours.}

Culture, its meanings, dimensions, and manifestations are explored in this course. How these cultural elements impact perceptions of students, classroom practices, and educational processes are explored in this course. A strength-based approach is employed to explore the issues associated with including all students within classrooms. (Typically offered: Fall, Spring and Summer)

CIED 4483H. Honors Museum Matters: History, Practices, Culture and Controversy. 3 Hours.
Museums are respected institutions, but few visitors have likely thought about their history, purpose and role in society and culture. This class is an introduction to museology or the study of museums. Through field trips, guest lectures, discussions, and targeted readings we will explore issues such as collecting, exhibiting, controversies, architecture and the educational challenges found in the wide world of museums. Prerequisite: Honors standing. (Typically offered: Spring Odd Years)

CIED 4503H. Honors Charles Darwin and the Legacy of Evolution. 3 Hours.
This highly integrated honors class draws on various perspectives to examine the life of Charles Darwin and the legacy and impact of evolution. Topics and guest instructors change each semester, but the course will focus on evolution from the perspectives of biology, anthropology, the law, philosophy, history, culture and literature. Prerequisite: Honors standing. (Typically offered: Spring Even Years)

CIED 4533. Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.
An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, and admission into CHEDBS or ELELBS programs. (Typically offered: Fall and Spring)

\section*{CIED 4533H. Honors Reading Comprehension Through Children's and Adolescent Literature. 3 Hours.}

An examination of the major genres of children and adolescent literature to develop and extend K-6 students' skills in reading comprehension. Field experience required. Prerequisite: CIED 2943, CIED 3113, CIED 3453, admission into CHEDBS or ELELBS programs, and honors standing. (Typically offered: Fall and Spring) This course is equivalent to CIED 4533.

\section*{CIED 4953. Assessment for English Learners. 3 Hours.}

This course addresses how to design appropriate assessments for English Learners taking into account their English language proficiency level and how to utilize the results of these assessments appropriately. (Typically offered: Spring)

CIED 498VH. Curriculum and Instruction Honors Thesis/Project. 1-3 Hour. Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, CIED 3901 H , and CATEBS, CHEDBS, DREDBA, EDSTBS, EGEDBA, ELELBS, FREDBA, GREDBA, SNEDBA, SPEDBS, or SSEDBA major. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CIED 499V. Special Topics in Curriculum and Instruction Education. 1-6 Hour. Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

\section*{CIED 499VH. Honors Special Topics in Curriculum and Instruction Education.} 1-3 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Special focus on recent and emerging topics in education. (Typically offered: Fall, Spring and Summer)
This course is equivalent to CIED 499V.
CIED 5003. Elementary Education Seminar. 3 Hours.
This course is designed to synthesize the foundational content presented in the Master of Arts in Teaching core courses. It focuses on refinement of the generalized knowledge to accommodate specialized content children. Professional attitudes, knowledge and skills relevant to elementary students. Professional attitudes, knowledge and skills applicable to today's elementary educator are addressed. Prerequisite: Admission to Elementary Education (ELEDMA) M.A.T. program. (Typically offered: Spring)

CIED 5013. Measurement, Research and Statistical Concepts in the Schools. 3 Hours.
An introduction to constructing, analyzing, and interpreting tests; types of research and the research process; qualitative and quantitative techniques for assessment; and descriptive and inferential statistics. Prerequisite: Admission to graduate school. (Typically offered: Summer)

\section*{CIED 5022. Classroom Management Concepts. 2 Hours.}

A number of different classroom management techniques are studied. It is assumed that a teacher must possess a wide range of knowledge and skills to be an effective classroom manager. Prerequisite: Admission to either Elementary Education (ELEDMA) or Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Fall)

\section*{CIED 5032. Curriculum Design Concepts for Teachers. 2 Hours.}

The design and adaptation of curriculum for students in regular and special K-6 classrooms. Theoretical bases and curriculum models are reviewed. Concurrent clinical experiences in each area of emphasis are included. Prerequisite: Admission to Elementary Education (ELEDMA) M.A.T. program. (Typically offered: Spring)

CIED 5053. Multicultural Issues in Elementary Education. 3 Hours.
This course provides an introduction to the major concepts and issues related to multicultural education in elementary classrooms. The ways in which race, class, gender and exceptionality influence students' behavior are discussed. Prerequisite: Admission to graduate school. (Typically offered: Spring Odd Years; Summer)

\section*{CIED 5063. Disciplinary Literacies in Education. 3 Hours.}

This course teaches the integration of reading, writing, and new literacies within the discipline and across disciplines. Theory and strategy are presented as integrated strands of the language process as presented in the context of instructional principles and suggested teaching practices. A solid research base is emphasized while keeping the focus on practical application. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

\section*{CIED 5073. Action Research in Elementary Education. 3 Hours.}

Provides the students with experience in conducting case studies and action research related to childhood education. In addition, students gain knowledge regarding practices used in ethnographic research. Prerequisite: Admission to Elementary Education (ELEDMA) M.A.T. program. (Typically offered: Spring)

CIED 508V. Elementary Education Cohort Teaching Internship. 1-6 Hour. Full-time student teaching in grades K-6 to be repeated both fall and spring semesters. Students will practice and master instructional strategies under the supervision of qualified mentor teachers and university faculty members. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{CIED 5153. Arts Integration in Practice. 3 Hours.}

Arts integration course including the ideas, design, and implementation of practices in the classroom, board room, and professional field that enrich the experiences of all stakeholders while building right-brain thinking skills for the new millennium. (Typically offered: Spring Even Years) May be repeated for up to 6 hours of degree credit.

\section*{CIED 5162. Applied Practicum. 2 Hours.}

Provides laboratory experiences for CIED 5173 (Literacy Assessment and Intervention). Prerequisite: Admission to Elementary Education (ELEDMA) M.A.T. program. (Typically offered: Fall)
CIED 5173. Literacy Assessment and Intervention. 3 Hours.
Focuses on assessment of young children's literacy skills. Techniques discussed include informal observation, miscue analysis, and portfolio assessment.
Prerequisite: Admission to graduate school. (Typically offered: Fall and Summer)
CIED 5203. English Language Arts/Speech \& Drama Methods of Instruction. 3 Hours.
This course provides an introduction to teaching English language arts (ELA) and speech/drama in the context of elementary, middle and high school settings. The topics, issues, methods, and materials encompassing philosophical, cognitive, and psychological dimensions of teaching the content area provide the major tenets of instruction. (Typically offered: Summer)

\section*{CIED 5213. Issues and Trends in Literacy. 3 Hours.}

This course provides an examination of practices to teaching literacy, broadly defined. The topics, issues, methods, and materials encompassing philosophical, cognitive, and psychological dimensions of teaching provide the major tenets of instruction. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program or instructor consent. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{CIED 5223. Learning Theory. 3 Hours.}

This course provides the student with information about foundational issues in education, including history and philosophy of American Education, psychological and social theories of education, characteristics of learners, and learning processes. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Summer)
CIED 5243. The Moral Mind in Action. 3 Hours.
The Moral Mind in Action explores how people reason through moral dilemmas and prepares students to more effectively recognize and resolve moral problems. Best practices of teachers and administrators of K -16 character education programs are discussed. Graduate degree credit will not be given for both CIED 4433 and CIED 5243. (Typically offered: Fall)

CIED 5253. Moral Courage. 3 Hours.
Moral Courage explores the factors that support translating moral thinking into moral action. This course draws from the field of positive psychology to guide students as they leverage existing strengths and develop new strategies for acting with moral courage in their personal and professional lives. Best practices of teachers and administrators of K-16 character education programs are discussed. Graduate degree credit will not be given for both CIED 4443 and CIED 5253. (Typically offered: Spring)
CIED 5263. Assessment, Evaluation, and Practitioner Research. 3 Hours. A study of assessment, testing, and evaluative procedures in classrooms including types of tests, abuses of tests, test construction, scoring, analysis and interpretation, statistical methods, and alternative evaluation and assessment techniques. Classroom-based data collection and analysis. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Fall)

\section*{CIED 5273. Research in Curriculum and Instruction. 3 Hours.}

An introduction to inquiry and research in curriculum and instruction. It examines the principles, strategies, and techniques of research, especially qualitative inquiry. Qualitative method in assessment and evaluation are considered. Practicum in educational research and evaluation is done as part of the class. (Typically offered: Fall)

CIED 528V. Teaching Experience. 1-6 Hour.
The teaching experience is an essential component of the Masters of Arts in Teaching degree. The two semester experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in area schools for both fall and spring semesters. The fall semester consists of a field experience including observation, co-planning, and co-teaching. The spring semester consists of an immersion experience for teacher candidates to plan and teach independently. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{CIED 5313. Principles of Qualitative Research in Curriculum \& Instruction. 3} Hours.
Designed specifically for aspiring qualitative researchers who wish to conduct research in settings unique to curriculum and instruction. Methods of research design, data analysis, and writing for publication will be emphasized. Strongly recommended for graduate students who are considering a qualitative thesis or dissertation in curriculum and instruction. (Typically offered: Spring Odd Years)

CIED 5333. Curriculum Theory and Development for Educators. 3 Hours.
The design and adaptation of curriculum for students in regular and special K-12 classrooms. Theoretical bases and curriculum models are reviewed. Concurrent clinical experiences in each area of emphasis are included. Prerequisite: Admission to Teacher Education (SEEDMA or EDUCMA) M.A.T. program. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

\section*{CIED 5363. K12 Virtual Teaching Methods. 3 Hours.}

A study of curriculum, instructional methods, measurement, and assessment techniques to faciliate student learning in K12 virtual and blended teaching environments. Prerequisite: Graduate standing. (Typically offered: Fall)

CIED 5383. Positive Classroom Structure \& Social-Emotional Well Being. 3 Hours.
Development of classroom environments conducive to learning for and socialemotional well being for all students. Emphasis placed on creation of positive classroom management structures, disciplinary interventions, and communication of expectations with students, families and school leaders. (Typically offered: Spring)

\section*{CIED 5393. Introduction to Linguistics. 3 Hours.}

This course is an introduction to human language. The goal is to understand what it means to speak a language, including an introduction to phonetics and phonology (specifically the sound system of American English), morphology (the rules of English at the word level), syntax (rules that govern sentence level language), semantics (meanings of words) and sociolinguistics (or the study of language use in its social context). (Typically offered: Fall)

\section*{CIED 5423. Curriculum Design. 3 Hours.}

A study of models of curriculum design and instructional practice in a variety of educational settings. (Typically offered: Spring)

CIED 5443. Methods of Teaching Foreign Language K-12. 3 Hours.
Study of the methods and materials in the teaching of foreign language in K-12 settings as well as the theories of second language acquisition. Includes philosophical, cognitive, and psychological dimensions of teaching foreign languages. The planning of instruction, microteaching, and the development of instructional materials are included. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

CIED 5461. Capstone Research Seminar. 1 Hour.
This course provides students with basic knowledge and practical skills in understanding, utilizing and implementing a research design project with a focus in the discipline of curriculum and instruction with particular emphasis of some aspect of teaching and/or learning. As a part of this course students will design, conduct and report the results of an action research study undertaken in the teaching internship. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

CIED 5523. Instructional Practices in Teaching Foreign Language. 3 Hours.
A pedagogical studies course based on the theoretical and practical aspects of methods, techniques, and materials for effective teaching of foreign languages in K-12 schools. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{CIED 5533. Teaching Language Arts. 3 Hours.}

This course emphasizes the place of the language arts in the elementary curriculum. Exploration of materials, content, practices, and methods used in reading, speaking, listening, and writing experiences is the basis for instruction. (Typically offered: Spring)

CIED 5543. Structures of American English. 3 Hours.
This course provides an introduction to the grammars of English, including (but not restricted to traditional, structural, and transformational-generative (universal grammar). It includes approaches to the teaching of all types of grammars. (Typically offered: Spring and Summer)

CIED 5553. Social Justice and Multicultural Issues in Education. 3 Hours.
This seminar provides an introduction to the major concepts and issues related to multicultural education and social justice in education and the ways in which race, ethnicity, class, gender, and exceptionality influence students' behavior. The course also examines the intersection of teacher and student perceptions of identity, schooling, and learning and the effects on educational systems. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

\section*{CIED 5573. Foundations of Literacy. 3 Hours.}

A foundational graduate course in teaching literacy processes and strategies to children from the emergent to the developmental stages. Topics explored include major theoretical and conceptual, historical, and evidence-based components of reading, writing, and language techniques as well as the role of the reading/literacy specialist to enhance literacy learning. (Typically offered: Fall, Spring and Summer)

\section*{CIED 5683. Adolescent Literature. 3 Hours.}

Content course in adolescent literature including selection, reading, evaluation, and psychological basis of classic and contemporary works. (Typically offered: Fall, Spring and Summer)

\section*{CIED 5733. Educator as Researcher. 3 Hours.}

Survey of methods for practitioner research in education with emphasis on analyzing educational research, creating valid and reliable educational assessments, utilizing research strategies for classroom data collection, interpreting data to analyze the impact of educational interventions, and disseminating findings for collaboration with other educators. (Typically offered: Summer)

\section*{CIED 5753. Empirically Informed Instructional Development. 3 Hours.}

Integration and application of evidence from educational literature and data from appropriate educational assessments to the process of instructional design and development. Emphasis placed on the critical evaluation of instructional changes and their impact on student learning and development. (Typically offered: Spring)

\section*{CIED 5793. Practicum in Literacy. 3 Hours.}

Clinical experience in which candidates assess reading difficulties and practice remedial measures under the direct supervision of the instructor. Emphasis is given to continuous assessment and to the use of commercially produced materials and trade books for intervention. Prerequisite: CIED 5573. (Typically offered: Fall, Spring and Summer)

CIED 5803. Nature and Needs of the Gifted and Talented. 3 Hours.
Educational, psychological, and social characteristics of gifted and talented children. Prerequisite: Graduate standing. (Typically offered: Fall)

CIED 5813. Curriculum Development in Gifted and Talented. 3 Hours.
Examines the various models for developing curriculum and providing services for students identified for gifted programs. Prerequisite: CIED 5803. (Typically offered: Spring)

CIED 5823. Gifted and Talented (Structured) Practicum. 3 Hours.
Supervised field experience in gifted education programs, schools, institutions, and other facilities for gifted/talented children. Prerequisite: CIED 5813. (Typically offered: Summer)

\section*{CIED 5843. Representations of American Education in Film. 3 Hours.}

This course provides an examination of students, teachers, administrators, schools, and schooling as they exist on the silver screen. Of particular interest is how film representations and misrepresentations potentially affect public perceptions of education. This course draws on educational theory and the field of cultural studies. (Typically offered: Irregular)

\section*{CIED 5883. Survey Research Methodology in Education. 3 Hours.}

Students will learn the important characteristics of a well designed survey and then apply these characteristics by analyzing and evaluating surveys used by others and then by creating and administering a survey of their own. Students will also analyze the results of the survey to determine if the survey provided the data they intended to gather. (Typically offered: Fall)

CIED 5913. Parent/Family Engagement for Culturally \& Linguistically Diverse Students. 3 Hours.
Students will investigate characteristics of family-community engagement systems and models serving culturally and linguistically diverse (CLD) students and families. Identify qualities of a welcoming, accepting environment for CLD families and implement some of these characteristics in their classroom and schools. Support communication and facilitate contributions by CLD families to the school and community including leadership roles. Demonstrate knowledge, skills, best practices and resources to enhance CLD family-community engagement by developing and implementing a service-learning project in their school or community. Prerequisite: Graduate standing. (Typically offered: Summer)

CIED 5923. Second Language Acquisition. 3 Hours.
This is one of four courses leading to Arkansas approved endorsement for teaching English as a Second Language (ESL). The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly ESL. (Typically offered: Fall)

CIED 5933. Second Language Methodologies. 3 Hours.
This is one of a series of four courses leading to Arkansas approved endorsement for teaching English as a Second Language (ESL). The course introduces the basics in approaches, methodologies, techniques, and strategies for teaching second languages, especially ESL. (Typically offered: Fall)

\section*{CIED 5943. Teaching People of Other Cultures. 3 Hours.}

This is one in a series of four courses leading to Arkansas approved endorsement for teaching English as a Second Language (ESL). The course focuses on cultural awareness, understanding cultural differences, and instruction methods for integrating second cultures, especially the culture of the United States, into the curriculum. (Typically offered: Spring)

\section*{CIED 5953. Second Language Assessment. 3 Hours.}

This is one in a series of four courses leading to Arkansas approved endorsement for teaching English as a Second Language (ESL). The course introduces basic methods for testing, assessing and evaluating second language, especially ESL, learners for placement purposes and academic performance. (Typically offered: Spring)

CIED 5983. Practicum in Curriculum \& Instruction. 3 Hours.
This course will provide degree candidates with advance knowledge of teaching in the elementary or secondary schools. This will be accomplished through a semesterlong practicum during which an action research project will be designed, enacted, and reported. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{CIED 599V. Special Topics. 1-18 Hour}

Special topics. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

\section*{CIED 600V. Master's Thesis. 1-6 Hour.}

This course is designed for students completing a thesis at the master's level in curriculum and instruction and related programs. It may be taken multiple times for 1-6 credits but no more than 6 credits will be counted toward the degree. Prerequisite: Graduate Standing (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{CIED 6013. Curriculum Theory, Development, and Evaluation. 3 Hours.}

Principles and concepts of curriculum and development, with an analysis of the factors basic to planning, the aims of the educational program, the organization of the curriculum, curriculum models, and elements desirable in the curriculum of schools including evaluation. (Typically offered: Fall Odd Years)

CIED 6023. Instructional Theory. 3 Hours.
Study of psychological, anthropological, sociological, and educational theories of instruction and learning. Emphasis is placed on synthesizing a broad range of existing and emerging perspectives in understanding individual, interactional and contextual phenomena of instruction and learning. (Typically offered: Spring Even Years)

CIED 6043. Analysis of Teacher Education. 3 Hours.
This course examines issues, problems, trends, and research associated with teacher education programs in early childhood, elementary, special education, and secondary education. (Typically offered: Summer Even Years)

CIED 6053. Assessment and Evaluation. 3 Hours.
A study of models for assessing and evaluating student learning with a focus upon design and implementation. (Typically offered: Spring)

\section*{CIED 6073. Seminar in Developing Creativity. 3 Hours.}

A study of the facets of creativity, how they can be applied to be used in one's everyday life, how they can be applied in all classrooms, and how to encourage the development of these in students. (Typically offered: Irregular)

\section*{CIED 6093. Vygotsky in the Classroom. 3 Hours.}

This course introduces the cultural-historical theory of L. Vygotsky and considers its complexity. The comprehensive nature of Vygotsky's heritage and the importance of the sociocultural context for understanding his work is emphasized, as well as the implications of his theories for contemporary educational settings. (Typically offered: Spring Odd Years)

\section*{CIED 6123. New Literacy Studies. 3 Hours.}

In the past decade scholars have expressed an interest in the diverse literacy practices in which adolescents engage outside of school. In using new media, adolescents interweave multiple sign system, including word and image, to construct a narrative or communicate information. How do readers interpret these texts? What conventions do authors manipulate to influence the meanings they construct? This course aims to answer these and other questions. (Typically offered: Fall Odd Years) May be repeated for up to 12 hours of degree credit

CIED 6133. Trends and Issues in Curriculum and Instruction. 3 Hours
Analysis of trends and issues in curriculum and instruction with emphasis on political/social contexts and prevailing philosophies/theories/practices across disciplines. Prerequisite: Admittance in Ed.D, Ed.S. or Ph.D. program. (Typically offered: Fall Even Years)

CIED 6143. Differentiated Instruction for Academically Diverse Learners. 3 Hours.

Major focus of this course will be the examination of differentiated instruction, a teaching philosophy appropriate for a wide range of learners. (Typically offered: Summer)

CIED 6153. Theories of Literacy and Language Learning.. 3 Hours.
In this seminar, students consider theories of literacy and language learning and their implications for practice and research. Theories are viewed as historically and socially situated, and students reflect on how their own work might be situated within these theories. The ways in which theories support research methodology are also explored. (Typically offered: Fall Even Years)

CIED 6163. Social and Emotional Components of Gifted and Talented Students. 3 Hours.

Purpose of this course is to study the theoretical and practical aspects of those affective issues, behaviors, and experiences often associated with gifted and talented students. (Typically offered: Summer Even Years)

CIED 6173. Reviews of Research in Reading Comprehension. 3 Hours. In this online course, students will learn types of reviews of research, including qualitative systematic reviews and meta-analyses, and will conduct a review of research on a topic related to reading comprehension. Students will consider implicit and explicit definitions of comprehension and the influence various definitions have on assessment, instruction, policy and research and will examine comprehension in different contexts, disciplines, genres, and platforms. The course is a CIED Area of Study or Cognate Course (not part of the Inquiry Core). (Typically offered: Summer Even Years)

CIED 6183. Theory and Research in Arts Integration. 3 Hours.
Content course in arts integration including the pedagogy, design, and implementation of lesson plans which simultaneously address core curriculum learning targets and teach skills through the visual and performing arts in order to address the needs of the learners of the new millennium. Prerequisite: Instructor consent. (Typically offered: Spring and Summer)

CIED 6193. Teaching English Language Learners in the Content Areas. 3 Hours.

This course prepares teachers to teach English language learners in math, science, and social studies. These subject areas each have their own vocabulary that must be mastered by English language learners. The course focuses on teachers of both children and adults. (Typically offered: Spring)

CIED 6243. Bakhtin in Language, Literacy, and Research. 3 Hours.
This seminar course explores a growing body of theory, research, and applications inspired by the ideas of Russian scholar Mikhail M. Bakhtin, who provides a unique perspective on language, literacy, and culture. Bakhtin's focus on the process of meaning-making through dialogic interaction is relevant for educators in all academic areas. Bakhtin's ideas provide a powerful humanistic alternative to prevailing formalistic tendencies in studying language, culture, and education. Many modern orientations, such as discourse analysis and dialogic pedagogy, can be traced to Bakhtinian concepts. In addition to exploring Bakhtinian concepts in language and literacy, this course applies a Bakhtinian framework for research. (Typically offered: Fall Odd Years)

CIED 6313. Issues, History, and Rationale of Science Education. 3 Hours.
This course is the foundation experience for those interested in the discipline of science education. It provides an overview of the fundamental issues in and vocabulary of science education. The course includes the research basis for science teaching, the literature of science education, and the issues and controversies surrounding the teaching of science. (Typically offered: Irregular)

CIED 6343. Advanced Science Teaching Methods. 3 Hours.
This course is designed for those educators who have had some previous instruction in science teaching methods and/or had some prior science teaching experience. Students will gain new or renewed perspectives with respect to their personal teaching ability while engaging in discussions and activities designed to assist others in professional grow in science instruction. Prerequisite: Admission to graduate school. (Typically offered: Irregular)

CIED 6353. Foundations and Issues in Bilingual and ESL Education. 3 Hours. This course introduces the conceptual, linguistic, sociological, historical, and political foundations of bilingualism and bilingual education. Policy issues and the legislative foundations of bilingual education will also be addressed. This course will enhance students' understanding of different types of bilingual and ESL programs, their underlying principles, and issues related to program implementation. (Typically offered: Fall)

CIED 6443. Mixed Methods Research. 3 Hours.
This course will provide opportunities for students to acquire the skills, knowledge, and strategies necessary to design and implement a mixed methods research study. Emphasis is upon developing research questions, developing a research design, selecting a sample, and utilizing appropriate techniques for analyzing data. (Typically offered: Fall)

\section*{CIED 6533. Problem-Based Learning and Teaching. 3 Hours.}

A course in the design, development, and delivery of the problem-based learning (PBL) model. Theoretical cases and curriculum models will be centered on issues and models related to PBL. (Typically offered: Irregular)

CIED 6603. Research in Multicultural and Justice-Oriented Education. 3 Hours. This course examines issues related to the implementation of and research on multicultural and social justice education. The meanings, dimensions, influences, manifestations, and status of varied cultures within schools (kindergarten to twelfth grades) and society are emphasized. The implications of these varied dimensions of culture on educational processes, and research including design, implementation and interpretation, are studied. (Typically offered: Spring)

CIED 6623. Research Methods and Scholarship in Curriculum and Instruction. 3 Hours.
In this course students will look at methods and practices in writing a successful dissertation proposal. Emphasis will be placed on research studies, collection of reliable and valid data, and analysis of data. Throughout the course, topics will focus on what scholarship looks like in curriculum and instruction. Prerequisite: Advanced standing in the doctoral program. (Typically offered: Fall)

CIED 6653. Advanced Methods of Qualitative Research in Curriculum \& Instruction. 3 Hours.
Designed specifically emerging researchers who seek to advance their knowledge, skills, and aptitudes for engaging in qualitative research in curriculum and instruction. Advanced modes of data collection, analysis and organization of findings will be emphasized with specific attention given to alignment with theoretical frameworks. Strongly recommended for graduate students who are considering a qualitative thesis or dissertation in curriculum and instruction. (Typically offered: Summer)

\section*{CIED 674V. PhD Research Internship. 1-6 Hour.}

This research internship is for doctoral level students in curriculum and instruction.
The goal is provide research experience within the doctoral course of study. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

CIED 680V. Ed.S. Project. 1-6 Hour.
Instructor permission required to register. Prerequisite: Instructor permission. (Typically offered: Fall, Spring and Summer)

CIED 684V. PhD Teaching Internship. 1-6 Hour.
This teaching internship is for doctoral level students in curriculum and instruction.
The goal is to provide teaching experience within the doctoral course of study.
(Typically offered: Fall, Spring and Summer)
CIED 694V. Special Topics. 1-6 Hour.
Discussion and advanced studies on selected topics in curriculum and instruction. Specific focus on recent developments. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

CIED 695V. Independent Study. 1-6 Hour.
Independent study. (Typically offered: Fall, Spring and Summer)
CIED 699V. Doctoral Seminar. 1-3 Hour
Doctoral seminar. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

CIED 700V. Dissertation. 1-18 Hour.
Dissertation. Prerequisite: Candidacy (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Dance (DANC)}

\section*{Courses}

DANC 1003. Dance Appreciation. 3 Hours.
Introduction to the nature and scope of ballet, modern dance, and ethnic-ritual-world dance forms, their potential for contributing towards multicultural literacy, and to the shaping of an American audience. Comprised of lectures, videos, and movement experiences in the form of Studio Labs. (Typically offered: Fall, Spring and Summer)

DANC 1912. Beginning Modern Dance. 2 Hours.
Introduction to basic techniques with an emphasis on acquiring flexibility, strength, and coordination. (Typically offered: Fall and Spring)

DANC 1932. Beginning Ballet. 2 Hours.
Introduction to the basic techniques of ballet in the recognized classic form including barre exercises, port de bras, and center practice. (Typically offered: Fall and Spring)

\section*{DANC 1942. Beginning Ballet II. 2 Hours.}

A continuation of the basic techniques of classical ballet from DANC 1932. This course is not recommended for those students who have extensive training, but the student must be versed in the basic fundamentals of ballet. (Typically offered: Spring)

DANC 1952. Tap Dance. 2 Hours.
Basic technical training in the tap dance idiom through technique, improvisation, and composition. Overview of tap dance history and the cultural influences on the art form. First steps in developing skill, clarity and motivational intent as well as strength. No previous tap experience necessary. (Typically offered: Fall and Spring)

DANC 1962. Broadway Jazz Dance I. 2 Hours.
Basic technical and artistic training in the jazz dance idiom through technique, improvisation and composition. First steps in developing skill, clarity and motivational intent as well as strength and flexibility. (Typically offered: Irregular)

DANC 199V. Special Topics in Dance. 1-3 Hour.
Classes not listed in the regular curriculum, offered on demand on the basis of student needs and changes within the profession. (Typically offered: Irregular)

\section*{Data Science (DASC)}

\section*{Courses}

DASC 1003. Introduction to Data Science. 3 Hours.
Introduction to Data Science is a course providing an overview of Data Science and preparation of Data Science First Year students for the Data Science program and for choosing one of the Data Science program concentrations. Corequisite: MATH 2554 or MATH 2554C or MATH 2445. Prerequisite: Students must be a DTSCBS or DTSCFR major. (Typically offered: Fall)

\section*{DASC 1003H. Honors Introduction to Data Science. 3 Hours.}

Introduction to Data Science is a course providing an overview of Data Science and preparation of Data Science First Year students for the Data Science program and for choosing one of the Data Science program concentrations. Corequisite: MATH 2554 or MATH 2554C or MATH 2445. Prerequisite: Students must have honors standing and be a DTSCBS or DTSCFR major. (Typically offered: Fall) This course is equivalent to DASC 1003.

DASC 1011. Success in Data Science Studies. 1 Hour.
This course provides preparation for Data Science First Year students for the Data Science program and for learning about University campus resources for students. This course is focused on students who are not MATH 2554 Calculus I or MATH 2445 Calculus I with Review ready. Prerequisite: Students must be a Data Science Major. (Typically offered: Fall)

DASC 1104. Programming Languages for Data Science. 4 Hours.
Programming Languages for Data Science provides a semester-long introduction to basic concepts, tools, and languages for computer programming using Python and R , two powerful programming languages used by data scientists. This class will introduce students to computer programming and provide them with the basic skills and tools necessary to efficiently collect, process, analyze, and visualize datasets. Students will gain hands-on experience with de novo programming in R and Python, finding and utilizing packages, and working in both interactive (Jupyter and RStudio) and non-interactive (Unix) environments. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major. (Typically offered: Fall)

\section*{DASC 1204. Introduction to Object Oriented Programming for Data Science. 4} Hours.
Introduction to Object Oriented Programming for Data Science, introduces objectoriented programming in JAVA. It covers object-oriented programming elements and techniques in JAVA, such as primitive types and expressions, basic I/O, basic programming structures, abstract data type, object class and instance, Methods, Java File I/O, object inheritance, collections and composite objects, advanced input / output: streams and files, and exception handling. Students will gain hands-on programming experience using JAVA. Corequisite: Lab component. Prerequisite: DASC 1104 and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)

\section*{DASC 1223. Role of Data Science in Today's World. 3 Hours.}

Role of Data Science in Today's World is a survey course providing an overview of the Data Science Curriculum and an introduction to the essential elements of data science: data collection and management; summarizing and visualizing data; basic ideas of statistical inference; predictive analytics and machine learning. Students will continue their hands-on experience using the Python and R programming languages and Jupyter notebooks.Prerequisite: DASC 1003 and DASC 1104 and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)

\section*{DASC 1223H. Honors Role of Data Science in Today's World. 3 Hours.}

Role of Data Science in Today's World is a survey course providing an overview of the Data Science Curriculum and an introduction to the essential elements of data science: data collection and management; summarizing and visualizing data; basic ideas of statistical inference; predictive analytics and machine learning. Students will continue their hands-on experience using the Python and R programming languages and Jupyter notebooks. Prerequisite: DASC 1003, DASC 1104, honors standing and must be a DTSCBS or DTSCFR major. (Typically offered: Spring)
This course is equivalent to DASC 1223.

DASC 188V. Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

DASC 188VH. Honors Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Corequisite: Lab component. Prerequisite: Students must be a DTSCBS or DTSCFR major, have honors standing and by instructor permission only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 188 V .

\section*{DASC 2103. Data Structures \& Algorithms. 3 Hours.}

Data Structures \& Algorithms focuses on fundamental data structures and associated algorithms for computing and data analytics. Topics include the study of data structures such as linked lists, stacks, queues, hash tables, trees, and graphs, recursion, their applications to algorithms such as searching, sorting, tree and graph traversals, divide-and-conquer, greedy algorithms, and dynamic programming, and the theory of NP-completeness. Students will gain hands-on experience using Python or Java. Prerequisite: DASC 1204 and must be a DTSCBS major. (Typically offered: Spring)

\section*{DASC 2113. Principles and Techniques of Data Science. 3 Hours.}

Principles and Techniques in Data Science is an intermediate semester-long data science course that follows an overview of data science in today's world. This class bridges between introduction to data science and upper division data science courses as well as methods courses in other concentrations. This class equips students with essential basic elements of data science, ranging from database systems, data acquisition, storage and query, data cleansing, data wrangling, basic data summarization and visualization, and data estimation and modeling. Students will gain hands-on experience using Python and various packages in Python. Corequisite: Lab component. Prerequisite: MATH 2564 and student must be a DTSCBS major. (Typically offered: Fall)

\section*{DASC 2133. Data Privacy \& Ethics. 3 Hours.}

Data Privacy and Ethics (DASC 2133) explores the intersection of ethics and contemporary (big) data analytics. In particular, we will discuss how data analytics impacts ethical issues like privacy, autonomy, transparency, discrimination, data ownership, and justice, while also investigating its impact on the cohesiveness of society and democracy. Pre- or Corequisite: DASC 1001 and must be a DTSCBS or DTSCFR major. (Typically offered: Fall)
DASC 2203. Data Management and Data Base. 3 Hours.
Data Management and Data Base focuses on the investigation and application of data science database concepts including DBMS fundamentals, database technology and administration, data modeling, SQL, data warehousing, and current topics in modern database management. Prerequisite: MATH 2564, DASC 1204 and students must be a DTSCBS major. (Typically offered: Spring)

\section*{DASC 2213. Data Visualization and Communication. 3 Hours.}

Data Visualization and Communication is a seminar providing an essential element of data science: the ability to effectively communicate data analytics findings using visual, written, and oral forms. Students will gain hands-on experience using data visualization software and preparing multiple formats of written reports (technical, social media, policy) that build a data literacy and communication toolkit for interdisciplinary work. In essence, this is a course emphasizing finding and telling stories from data, including the fundamental principles of data analysis and visual presentation conjoined with traditional written formats. Prerequisite: DASC 1104 and DASC 1222 and students must be a DTSCBS major. (Typically offered: Fall)

DASC 2594. Multivariable Math for Data Scientists. 4 Hours.
Multivariable Mathematics for Data Scientists provides an in depth look at the multivariate calculus and linear algebra necessary for a successful understanding of modeling for data science. Students will gain an understanding of the mathematical and geometric concepts used in optimization and scientific computation using mathematical and computational techniques. At the end of the course, students will be equipped with the calculus and linear algebra skills and knowledge to be successful in courses in optimization and advanced data science methods. Corequisite: Lab component. Prerequisite: MATH 2564 and DASC 1104 and student must be a DTSCBS major. (Typically offered: Fall)

DASC 290V. Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

DASC 290VH. Honors Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Honors standing and students must be a DTSCBS or DTSCFR major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 290V.
DASC 3103. Cloud Computing and Big Data. 3 Hours.
Cloud Computing and Big Data covers: introduction to distributed data computing and management, MapReduce, Hadoop, cloud computing, NoSQL and NewSQL systems, Big data analytics and scalable machine learning, real-time streaming data analysis. Students will gain hands-on experience using Amazon AWS, MongoDB, Hive, and Spark. Prerequisite: DASC 2594 and DASC 2203 and student must be a DTSCBS major. (Typically offered: Fall)
DASC 3103H. Honors Cloud Computing and Big Data. 3 Hours.
Cloud Computing and Big Data covers: introduction to distributed data computing and management, MapReduce, Hadoop, cloud computing, NoSQL and NewSQL systems, Big data analytics and scalable machine learning, real-time streaming data analysis. Students will gain hands-on experience using Amazon AWS, MongoDB, Hive, and Spark. Prerequisite: DASC 2594, DASC 2203, honors standing and student must be a DTSCBS major. (Typically offered: Fall)
This course is equivalent to DASC 3103.

\section*{DASC 3203. Optimization Methods in Data Science. 3 Hours.}

Optimization Methods in Data Science is an advanced mathematical course providing the foundations and concepts of optimization that are essential elements of machine learning algorithms in data science, ranging from mathematical optimization to convex optimization to unconstrained and constrained optimization to nonlinear optimization to stochastic optimization. Students will gain hands-on experience using Python and various optimization packages in Python. Prerequisite: DASC 2113 and DASC 2594 and student must be a DTSCBS major. (Typically offered: Spring)

\section*{DASC 3213. Statistical Learning. 3 Hours.}

Statistical Learning is a course providing an in depth look at the theory and practice of applied linear modeling for data science: including model building, selection, regularization, classification and prediction. Students will gain hands-on experience using statistical software to learn from data using applied linear models. Prerequisite: DASC 1104 and ((MATH 3013 and STAT 3003) or (INEG 2314 and INEG 2323)) and student must be a DTSCBS major. (Typically offered: Spring)

DASC 3223. Cyber Crime and Cyber Terrorism. 3 Hours.
Cyber Crime and Cyber Terrorism (CCCT) is an overview of the study of cybercrime and cyber terrorism for students of data science, criminology, and law discussing crimes committed via Internet, ranging from various white-collar financial crimes to the spread of viruses, malicious code, stalking, bullying, and web-based exploitation. Criminological, social-psychological explanations will be examined and the investigative and legal strategies employed to combat cyber-crime and cyber terrorism will be discussed. Prerequisite: DASC 2113 and must be a DTSCBS major. (Typically offered: Fall)

\section*{DASC 390V. Special Topics in Data Science. 1-6 Hour.}

Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Student must be a DTSCBS or DTSCFR major and by Permission Only. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{DASC 390VH. Honors Special Topics in Data Science. 1-6 Hour.}

Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Student must have honors standing, be a DTSCBS or DTSCFR major and by permission only. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 390 V .
DASC 400VH. Honors Thesis in Data Science. 1-3 Hour.
Honors Thesis in Data Science (DASC 400VH) is a course to develop an Honors Thesis in Data Science. The Honors Thesis can be an independent thesis or can be related to the Data Science Practicum I and II Courses Project. Prerequisite: Student must be a DTSCBS major, have honors standing, and by Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{DASC 4113. Machine Learning. 3 Hours.}

Machine learning covers: logistic regression, ensemble methods, support vector machines, kernel methods, neural networks, Bayesian inference, reinforcement learning, learning theory, and their applications in text, image, and web data processing. Students will gain hands-on experience of developing machine learning algorithms using Python and scikit-learn. Prerequisite: DASC 2103 and DASC 3203 and student must be a DTSCBS major. (Typically offered: Fall)

\section*{DASC 4113H. Honors Machine Learning. 3 Hours.}

Machine learning covers: logistic regression, ensemble methods, support vector machines, kernel methods, neural networks, Bayesian inference, reinforcement learning, learning theory, and their applications in text, image, and web data processing. Students will gain hands-on experience of developing machine learning algorithms using Python and scikit-learn. Prerequisite: DASC 2103, DASC 3203, honors standing and student must be a DTSCBS major. (Typically offered: Fall) This course is equivalent to DASC 4113.

\section*{DASC 4123. Social Problems in Data Science and Analytics. 3 Hours.}

This course explores the ways data analytics and data science are impacted by or intersect with issues of social justice, poverty and economic inequality, racial and ethnic relations, gender, crime, education, health and healthcare, and other contemporary social problems. Prerequisite: DASC 1222 and student must be a DTSCBS major. (Typically offered: Fall)

DASC 4533. Information Retrieval. 3 Hours.
Information Retrieval is a course providing expertise in processing unstructured data as a key component of data science. It covers text processing, file structures, ranking algorithms, query processing, and web search. Students will gain handson experience developing their own search engine from scratch, using Python, C, C++, or Java on a Linux server and making their search engine web accessible. Note: Prior user-level knowledge of Linux for file and directory management and remote login is required for this course. Corequisite: Lab component. Prerequisite: DASC 2103 and student must be a DTSCBS major. (Typically offered: Irregular)

DASC 4892. Data Science Practicum I. 2 Hours.
Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the first semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve realworld problems. Prerequisite: DASC 2113, DASC 2213, DASC 3203, ((STAT 3013 and STAT 3003) or (INEG 2314 and INEG 2323)), and student must be a DTSCBS major. Pre- or Corequisite: DASC 3213, DASC 4113, and DASC 4123. (Typically offered: Fall)

\section*{DASC 4892H. Honors Data Science Practicum I. 2 Hours.}

Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the first semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve realworld problems. Prerequisite: DASC 2113, DASC 2213, DASC 3203, ((STAT 3013 and STAT 3003) or (INEG 2314 and INEG 2323)), honors standing and the student must be a DTSCBS major. Pre- or Corequisite: DASC 3213, DASC 4113, and DASC 4123. (Typically offered: Fall)
This course is equivalent to DASC 4892.
DASC 490V. Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Students must be a DTSCBS major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

DASC 490VH. Honors Special Topics in Data Science. 1-6 Hour.
Special Topics in Data Science is a course for data science topics not covered in other courses. Prerequisite: Honors standing and students must be a DTSCBS major and Instructor Permission Only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
This course is equivalent to DASC 490 V .
DASC 4993. Data Science Practicum II. 3 Hours
Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the second semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve real-world problems. Corequisite: Lab component. Prerequisite: DASC 4892 with a grade of C or better and student must be a DTSCBS major. (Typically offered: Spring)

\section*{DASC 4993H. Honors Data Science Practicum II. 3 Hours.}

Application of data science, analytics, business intelligence, data mining, machine learning, and data visualization to existing problems. Data Science techniques using current and relevant software and problem-solving methods are applied to current problems for presentation to management. This is the second semester of the required full-year multi-college interdisciplinary practicum using real-world data to solve real-world problems. Corequisite: Lab component. Prerequisite: DASC 4892 with a grade of \(C\) or better, and student must be a DTSCBS major, and have honors standing. (Typically offered: Spring)
This course is equivalent to DASC 4993.

\section*{Economics (ECON)}

\section*{Courses}

ECON 2013. Principles of Macroeconomics (ACTS Equivalency = ECON 2103). 3 Hours.

Macroeconomic analysis, including aggregate employment, income, fiscal and monetary policy, growth and business cycles. Credit will be allowed for only one of ECON 2013 and AGEC 2103. Prerequisite: MATH 1203 or higher, or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with AGEC 2103.
ECON 2013H. Honors Principles of Macroeconomics. 3 Hours.
Macroeconomic analysis, including aggregate employment, income, fiscal and monetary policy, growth and business cycles. Credit will be allowed for only one of ECON 2013H and AGEC 2103. Prerequisite: MATH 1203 or higher or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT, and honors standing. (Typically offered: Fall)
This course is cross-listed with ECON 2013, AGEC 2103.
ECON 2023. Principles of Microeconomics (ACTS Equivalency = ECON 2203).
3 Hours.
Microeconomic analysis, including market structures, supply and demand, production costs, price and output, and international economics. Credit will be allowed for only one of ECON 2023 and AGEC 1103. Prerequisite: MATH 1203 or higher, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer) This course is cross-listed with AGEC 1103.

\section*{ECON 2023H. Honors Principles of Microeconomics. 3 Hours.}

Microeconomic analysis, including market structures, supply and demand, production costs, price and output, and international economics. Credit will be allowed for only one of ECON 2023H and AGEC 1103. Prerequisite: MATH 1203 or higher, or a score of 26 on the math component of the ACT exam, or 600 on the math component of the old SAT or 620 on the math component of the new SAT, and honors standing. (Typically offered: Spring)
This course is cross-listed with ECON 2023, AGEC 1103.
ECON 2143. Basic Economics: Theory and Practice. 3 Hours.
Surveys basic micro, macro principles and analytical tools needed to study contemporary economic problems such as inflation, unemployment, poverty, and pollution. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Fall, Spring and Summer)

ECON 2143H. Honors Basic Economics: Theory and Practice. 3 Hours. Surveys basic micro, macro principles and analytical tools needed to study contemporary economic problems such as inflation, unemployment, poverty, and pollution. Not open to students majoring in Economics or Business Administration. (Typically offered: Fall, Spring and Summer) This course is equivalent to ECON 2143.

\section*{ECON 3033. Microeconomic Theory. 3 Hours.}

Nature, scope, and purpose of economic analysis; theories of demand, production, cost, firm behavior, allocation of resources, etc., in a market-oriented system. Prerequisite: (ECON 2013 and ECON 2023) or (ECON 2143) and (MATH 2043 or MATH 2554). (Typically offered: Fall, Spring and Summer)

ECON 3053. Economics for Elementary Teachers. 3 Hours.
For students who plan to become teachers in elementary schools. Acquaints students with basic concepts and functioning of the American economic system. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. Recommended to be completed in the fall semester of junior year. Prerequisite: 40 hours of completed course work. (Typically offered: Fall)

\section*{ECON 3063. Economics for Secondary Educators. 3 Hours.}

Economics for Secondary Educators teaches basic economics understandings equipping students to make sound economics decisions as consumers, investors, voters and savers. Lessons and activities appropriate for secondary classes will be demonstrated. The course will survey materials available for government, economics, world and U.S. history, environmental science, language arts, business education, personal finance and entrepreneurship classes. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. Recommended to be completed in the fall semester of junior year. Prerequisite: 40 hours of completed course work. (Typically offered: Irregular)

\section*{ECON 3133. Macroeconomic Theory. 3 Hours.}

Theoretical determinations of national aggregate employment, income, consumption, investment, price level, etc. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2043 or MATH 2554)). (Typically offered: Fall and Spring)

\section*{ECON 3143. Economics of Poverty and Inequality. 3 Hours}

This course provides the study of how labor markets work and how economic institutions and policy affect labor market outcomes. Topics include changes to the modern economy including forces like globalization and technical advances and how such forces have altered incomes, wealth and social mobility. The course will provide a clearer understanding of the trends, the reasoning behind the trends, and the impact of social policy on the welfare of the American worker. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall)

\section*{ECON 330V. Economics Study Abroad. 3-6 Hour.}

Open to undergraduate students studying abroad in officially sanctioned programs in Economics in the Walton College. Topics vary by location of study abroad opportunities. To be eligible for credit, students must have junior standing and Walton College majors must have completed all pre-business requirements prior to studying abroad. Prerequisite: Departmental consent, Junior standing and completion of pre-business course requirements, each with a grade of \(C\) or better, a pre-business cumulative GPA of 2.5 or better and an overall GPA of 2.5 or better. (Typically offered: Irregular)

\section*{ECON 3333. Public Economics. 3 Hours.}

Governmental functions, revenues; tax shifting, incidence; public expenditures, their effects; and fiscal policy. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

ECON 3433. Money and Banking. 3 Hours.
Financial history; theory and practice of financial institutions; monetary policy in theory and practice. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

\section*{ECON 3533. Labor Economics. 3 Hours.}

Economic analysis of labor markets. Topics include analysis of labor demand and supply; human capital investment; wage differentials; discrimination; economic effects of labor unions and collective bargaining; public sector labor markets; unemployment; and labor market effects on inflation. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular)

\section*{ECON 3633. Economics of Advertising. 3 Hours.}

An examination of how economists define and categorize types of products and advertising campaigns. Alternative views of advertising -- persuasive vs. informative -- are discussed. Models of the relationship between advertising and sales, profits, market structure, product quality, and price are examined. Prerequisite: ECON 2023 or ECON 2143. (Typically offered: Irregular)

ECON 3843. Economics of the Developing World. 3 Hours.
Examine theories and patterns of economic development in emerging economies. The role of the World Bank and IMF as multilateral lenders and examination of their success and failures in fostering development. Measures of poverty and inequality and their implications for economic development. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

ECON 3853. Emerging Markets. 3 Hours.
An analysis of the business and economic environment in emerging countries; focusing in Latin America, South East Asia and Transition Economies. The topics and issues covered include market structure and market failures, financial and legal background, current institutions and political economy issues, and current business opportunities. Prerequisite: ECON 2143; or ECON 2013 and ECON 2023. (Typically offered: Fall)

ECON 3933. The Japanese Economic System. 3 Hours.
This class presents essential facts about the Japanese economy and then subjects them to modern economic analyses. Japanese institutions and policies are contrasted with their American counterparts, and these economies are compared in terms of performance. Current issues including contemporary economic conditions and US - Japanese trade relations are also examined. Pre- or Corequisite:
ECON 2023. Prerequisite: ECON 2013 or ECON 2143. (Typically offered: Spring)
ECON 399VH. Honors Course. 1-3 Hour.
Honors thesis research and writing under the direction of a faculty member in the department. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ECON 4003H. Honors Economics Colloquium. 3 Hours.}

Explores events, concepts and/or new developments in the field of Economics. Prerequisite: Senior standing. (Typically offered: Fall)

ECON 410V. Special Topics in Economics. 1-6 Hour.
Covers special topics in economics not available in other courses. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ECON 410VH. Honors Special Topics in Economics. 1-6 Hour.
Covers special topics in economics not available in other courses. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to ECON 410V.

\section*{ECON 4173. Nation Model United Nations. 3 Hours}

This class is designed to prepare students for their participation in a Nation Model United Nations (NMUN) Conference. The NMUN Conference is sponsored by The National Collegiate Conference Association (NCCA), which is the largest collegelevel Model United Nations conference. This course is designed to advance the research skills of the students by requiring extensive background position papers covering various economic and social issues of their assigned committee and ultimately preparing resolution documents they develop during the conference. They will present their positions via speeches and in caucus settings. This course will broaden the students' international perspective while they gain a thorough understanding of the primary activities of the United Nations. Prerequisite: Junior standing and departmental consent. (Typically offered: Fall)

\section*{ECON 4333. Economics of Organizations. 3 Hours.}

An economic perspective on the design of organizations. Applies developments in game theory and contract theory to analyze the role of information and incentives within and between firms. Covers the boundaries of firms, integration and outsourcing, authority and incentives, and alternative organizational structures in an evolving business environment. Prerequisite: ECON 3033. (Typically offered: Fall)

\section*{ECON 4423. Behavioral Economics. 3 Hours.}

Both economics and psychology systematically study human judgment, behavior, and well-being. This course surveys attempts to incorporate psychology into economics to better understand how people make decisions in economic situations. The course will cover models of choice under uncertainty, choice over time, as well as procedural theories of decision making. Prerequisite: ECON 3033. (Typically offered: Fall)

\section*{ECON 4433. Experimental Economics. 3 Hours.}

The course offers an introduction to the field of experimental economics. Included are the methodological issues associated with developing, conducting, and analyzing controlled laboratory experiments. Standard behavioral results are examined and the implications of such behavior for business and economic theory are explored. Prerequisite: ECON 2023 or ECON 2143. (Typically offered: Spring)

ECON 450V. Independent Study. 1-6 Hour.
Permits students on individual basis to explore selected topics in economics. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ECON 4633. International Trade. 3 Hours.
Problems of the international economy from a microeconomic perspective. Topics include analysis of the pattern and content of trade; trade in factors of production; and the applications of trade theory to the study of trade barriers such as tariffs and quotas. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

\section*{ECON 4643. International Macroeconomics and Finance. 3 Hours.}

Problems of the international economy from a macroeconomic perspective. Topics include national income accounting and the balance of payments; exchange rates and the foreign exchange markets; exchange rate policy; macroeconomic policy coordination; developing countries and the problem of 3rd world debt; and the global capital market. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall and Spring)

\section*{ECON 4743. Introduction to Econometrics. 3 Hours.}

Introduction to the application of statistical methods to problems in economics. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2043 or MATH 2554 or higher)) and (BUSI 1033 or STAT 2303). (Typically offered: Spring)

\section*{ECON 4753. Forecasting. 3 Hours.}

The application of forecasting methods to economics, management, engineering, and other natural and social sciences. The student will learn how to recognize important features of time series and will be able to estimate and evaluate econometric models that fit the data reasonably well and allow the construction of forecasts. Prerequisite: (ECON 2013 and ECON 2023) or (ECON 2143) and (MATH 2043 or MATH 2554) and (BUSI 1033 or STAT 2303). (Typically offered: Fall)

\section*{ECON 4763. Economic Analytics. 3 Hours.}

This course provides an overview of modern statistical learning methods, including Machine Learning, for senior economics or business majors, along with handson experience of in-depth analytics projects using real data. Students will use the most advanced Machine Learning libraries available in Python, \(R\) and MATLAB to gather and organize data as well as to train, validate and test their empirical models. Knowledge of statistical software is recommended. Pre- or Corequisite: ECON 4743 or ISYS 4193. (Typically offered: Fall)

\section*{ECON 5243. Managerial Economics. 3 Hours.}

This course will provide students with a strong foundation in core economics principles, with emphasis on industrial organization issues and applications geared toward the supply-chain and retail focus of the redesigned MBA program. (Typically offered: Fall and Spring)

ECON 5253. Economics of Management and Strategy. 3 Hours.
Information economics and applied game theory. (Typically offered: Irregular)
ECON 5263. Applied Microeconomics. 3 Hours.
The framework for this course is the economic way of thinking. Both the theory and application of important economics questions are presented, showing students the applicability of various economic methodologies in a number of different contexts. To gain competence in the applied side of economic analysis, students will use MS Excel or other software to apply class concepts to solve concrete problems. Prerequisite: ECON 5243 and (ECON 5743 or AGEC 5613). (Typically offered: Spring)

\section*{ECON 5423. Behavioral Economics. 3 Hours.}

Both economics and psychology systematically study human judgment, behavior, and well-being. This course surveys attempts to incorporate psychology into economics to better understand how people make decisions in economic situations. The course will cover models of choice under uncertainty, choice over time, as well as procedural theories of decision making. Graduate degree credit will not be given for both ECON 4423 and ECON 5423. Prerequisite: ECON 2023 or ECON 2143. (Typically offered: Spring)

\section*{ECON 5433. Experimental Economics. 3 Hours.}

The course offers an introduction to the field of experimental economics. Included are the methodological issues associated with developing, conducting, and analyzing controlled laboratory experiments. Standard behavioral results are examined and the implications of such behavior for business and economic theory are explored. Graduate degree credit will not be given for both ECON 4433 and ECON 5433. Prerequisite: ECON 2023 or ECON 2143. (Typically offered: Fall)

\section*{ECON 5743. Introduction to Econometrics. 3 Hours.}

Introduction to the application of statistical methods to problems in economics. Graduate degree credit will not be given for both ECON 4743 and ECON 5743. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2043 or MATH 2554 or higher)) and (BUSI 1033 or STAT 2303). (Typically offered: Spring)

ECON 5753. Forecasting. 3 Hours.
The application of forecasting methods to economics, management, engineering, and other natural and social sciences. The student will learn how to recognize important features of time series and will be able to estimate and evaluate econometric models that fit the data reasonably well and allow the construction of forecasts. Graduate degree credit will not be given for both ECON 4753 and ECON 5753. Prerequisite: (ECON 2013 and ECON 2023) or (ECON 2143) and (MATH 2043 or MATH 2554) and (BUSI 1033 or STAT 2303). (Typically offered: Fall)

\section*{ECON 5763. Economic Analytics. 3 Hours.}

This course provides students with a good overview of modern big data methods, including Machine Learning, along with hands-on experience of in-depth analytics projects using real data. After 3 weeks of introductory lectures on the big data methods by the instructor, students will form groups and propose research projects they will develop over the semester. Knowledge of some statistical software is recommended, including Python, R and MATLAB. Prerequisite: (ECON 5743 or AGEC 5613) and ECON 5783. (Typically offered: Spring)

\section*{ECON 5783. Applied Microeconometrics. 3 Hours.}

This course covers the principles of causal inference. Methods include panel data models, instrumental variables, regression discontinuity designs, difference-indifferences, and matching. Emphasis on developing a solid understanding of the underlying econometric principles of the methods taught as well as on their empirical application. Prerequisite: ECON 5743 or AGEC 5613. (Typically offered: Fall)

\section*{ECON 5813. Economic Analytics I. 3 Hours.}

Part one of the capstone in the Masters in Economic Analytics. The course provides an overview of modern statistical learning methods, including Machine Learning, along with hands-on experience of in-depth analytics exercises using real data. Students will be given a set of datasets early in the semester and will use them for in-class exercises, assignments, and a class project. Students will make use of the most advanced learning libraries available in Python to gather and organize data as well as to train, validate, and test their empirical models. Prerequisite: ECON 4743 or ECON 5743 or ISYS 4193. (Typically offered: Fall)

\section*{ECON 5823. Economic Analytics II. 3 Hours.}

Part two of the capstone in the Masters in Economic Analytics. The MS in Economic Analytics is a professional degree primarily designed to lay a strong foundation for a career in economic analytics. The career preparation culminates with a capstone project. In this course, students work in small teams to (i) develop capstone topics, (ii) formulate hypotheses related to their projects, (iii) find appropriate datasets, and (iv) analyze their datasets to test hypotheses using the econometric models/ techniques that they have learned over the course of the program. Prerequisite: ECON 5813. (Typically offered: Spring)

ECON 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ECON 6133. Mathematics for Economic Analysis. 3 Hours.}

This course will develop mathematical and statistical skills for learning economics and related fields. Topics include calculus, static optimization, real analysis, linear algebra, convex analysis, and dynamic optimization. Prerequisite: Graduate standing and MATH 2554 or equivalent. (Typically offered: Summer)
ECON 6213. Microeconomic Theory I. 3 Hours.
Introductory microeconomic theory at the graduate level. Mathematical formulation of the consumer choice, producer behavior, and market equilibrium problems at the level of introductory calculus. Discussion of monopoly, oligopoly, public goods, and externalities. (Typically offered: Fall)

\section*{ECON 6223. Microeconomic Theory II. 3 Hours.}

Advanced treatment of the central microeconomic issues using basic real analysis. Formal discussion of duality, general equilibrium, welfare economics, choice under uncertainty, and game theory. (Typically offered: Spring)
ECON 6313. Macroeconomic Theory I. 3 Hours.
Theoretical development of macroeconomic models that include and explain the natural rate of unemployment hypothesis and rational expectations, consumer behavior, demand for money, market clearing models, investment, and fiscal policy. (Typically offered: Fall)

\section*{ECON 6323. Macroeconomic Theory II. 3 Hours.}

Further development of macroeconomic models to include uncertainty and asset pricing theory. Application of macroeconomic models to explain real world situations. (Typically offered: Spring)

\section*{ECON 636V. Special Problems in Economics. 1-6 Hour.}

Independent reading and investigation in economics. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
ECON 643V. Seminar in Economic Theory and Research I. 1-3 Hour.
Seminar. (Typically offered: Fall) May be repeated for up to 7 hours of degree credit.

\section*{ECON 644V. Seminar in Economic Theory and Research II. 1-3 Hour.}

Independent research and group discussion. (Typically offered: Spring) May be repeated for up to 4 hours of degree credit.

\section*{ECON 6613. Econometrics I. 3 Hours.}

Use of economic theory and statistical methods to estimate economic models. The single equation model is examined emphasizing multicollinearity, autocorrelation, heteroskedasticity, binary variables and distributed lags. Prerequisite: MATH 2043 and knowledge of matrix methods, which may be acquired as a corequisite, and ECON 2023, and an introductory statistics course or equivalent. (Typically offered: Fall)

ECON 6623. Econometrics II. 3 Hours.
Use of economic theory and statistical methods to estimate economic models. The treatment of measurement error and limited dependent variables and the estimation of multiple equation models and basic panel data models will be covered. Additional frontier techniques may be introduced. Prerequisite: ECON 6613. (Typically offered: Spring)

\section*{ECON 6633. Econometrics III. 3 Hours.}

Use of economic theory and statistical methods to estimate economic models. Nonlinear and semiparametric/nonparametric methods, dynamic panel data methods, and time series analysis (both stationary and nonstationary processes) will be covered. Additional frontier techniques may be covered. Prerequisite: ECON 6613. (Typically offered: Spring)

\section*{ECON 6713. Industrial Organization I. 3 Hours.}

This course will develop the theory of modern industrial organization. The latest advances in microeconomic theory, including game theory, information economics and auction theory will be applied to understand the behavior and organization of firms and industries. Theory will be combined with empirical evidence on firms, industries and markets. Prerequisite: ECON 6213 and ECON 6223. (Typically offered: Fall)

\section*{ECON 6723. Industrial Organization II. 3 Hours.}

This course surveys firm decisions, including setting prices, choosing product lines and product quality, employing price discrimination, and taking advantage of market structure. It will also cover behavioral IO, which reconsiders the assumption that firms and consumers are perfectly rational and examines the role of regulation. Prerequisite: ECON 6133. (Typically offered: Spring)

\section*{ECON 6833. International Trade and Development I. 3 Hours.}

A first graduate level course in development economics with a focus on foundational theoretical issues. We explore the causation, implications, and remedies for pervasive and persistent poverty in low-income countries. Emphasis will be primarily on microeconomics topics. May be taken either as a precursor to International Development Economics II or stand-alone. Prerequisite: ECON 6213, (ECON 6613 or AGEC 5613) or by instructor's permission. (Typically offered: Fall)

ECON 6843. International Trade and Development II. 3 Hours.
A second graduate level course in development economics that focuses on the empirical aspect of development in low-income countries. The course explores various microeconomics topics related to poverty, human capital accumulation, and their interactions with role of public policy. Prerequisite: ECON 6213, (ECON 6613 or AGEC 5613) or instructor consent. (Typically offered: Spring)

\section*{ECON 6913. Experimental Economics. 3 Hours.}

The course develops advanced concepts in the use of controlled experiments to test economic theory and explore behavioral regularities relating to economics. The class focuses on the methodology of experimental economics while reviewing a variety of established results. Prerequisite: ECON 6213. (Typically offered: Fall)

\section*{ECON 6923. Experimetrics. 3 Hours.}

This course covers econometric techniques commonly used in experimental economics but infrequently covered in standard econometrics classes, e.g., power tests, non-parametric tests of means, simulated data, dealing with discrete and ordinal data, finite mixture models, structural estimation. This is an applied course and instruction will lean heavily on examples. Prerequisite: ECON 6213 and ECON 6223. (Typically offered: Fall)

\section*{ECON 6933. Behavioral Economics. 3 Hours.}

This course surveys the frontier of behavioral economics, both theoretical and applied. Standard economic theory serves as a base for economics analysis, but when deviations from standard predictions are regularly and systematically observed, models have to modified to account better predict human behavior. Insights from psychology, biology, and neuroscience are incorporated economic models of both individual and strategic behavior. Prerequisite: ECON 6213 and ECON 6223. (Typically offered: Spring)
ECON 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Education (EDHP)}

\section*{Courses}

EDHP 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
EDHP 2600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
EDHP 3600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
EDHP 3923. Education Seminar. 3 Hours.
Special topics or issues in education. (Typically offered: Irregular) May be repeated for degree credit.

\section*{EDHP 3923H. Honors Education Seminar. 3 Hours.}

Special topics or issues in education for the Honors student. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit.
EDHP 4001. Dean's Seminar. 1 Hour.
The Dean's Seminar is a seminar course that leverages the expertise of our faculty to provide students from multiple disciplines an opportunity to study topics at the intersection of education and health. Each offering will focus on a different complex societal challenge and help students develop high-leverage interventions to address the issue through the lens of education and health. Topics vary by semester. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{EDHP 4001H. Honors Dean's Seminar. 1 Hour.}

The Dean's Seminar is a seminar course that leverages the expertise of our faculty to provide students from multiple disciplines an opportunity to study topics at the intersection of education and health. Each offering will focus on a different complex societal challenge and help students develop high-leverage interventions to address the issue through the lens of education and health. Topics vary by semester.
Prerequisite: Honors Standing. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.
This course is equivalent to EDHP 4001.

\section*{EDHP 4600. Undergraduate Research Assistant. 0 Hours.}

Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{EDHP 5001. DEAN'S SEMINAR. 1 Hour.}

The Dean's Seminar is a seminar course that leverages the expertise of our faculty to provide students from multiple disciplines an opportunity to study topics at the intersection of education and health. Each offering will focus on a different complex societal challenge and help students develop high-leverage interventions to address the issue through the lens of education and health. Topics vary by semester.
(Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{Education Reform (EDRE)}

\section*{Courses}

EDRE 5053. Philosophy and History of Education and Education Reform. 3 Hours.
This course traces the historical development of the philosophical debates concerning education and its role in society as well as how those ideas and consequent demands for reform affected the educational system and its structures. (Typically offered: Spring Even Years)
EDRE 5113. Education Policy in Israel. 3 Hours.
This course, which is built around a study abroad component in Israel, examines education policy in Israel. It will compare US and Israeli perspectives and ideas on education reform and education innovation in diverse societies. (Typically offered: Summer Even Years)

\section*{EDRE 6023. Economics of Education. 3 Hours.}

This course applies the principles of economic analysis to education and education reform. Topics include: Human capital and signaling theories; education labor markets; educational production functions; public policy and market forces. The course also features empirical evidence evaluating economic theories of education. (Typically offered: Spring Odd Years)

\section*{EDRE 6033. Politics of Education. 3 Hours.}

This course explores historical and institutional forces that help shape education policymaking. Particular attention will be paid to the experience of past education reform movements as well as the influence of interest groups, federalism,
bureaucracy, governance structures, public opinion, and judicial review on education policy. (Typically offered: Fall)

\section*{EDRE 6043. Finance and Education Policy. 3 Hours.}

This course examines K-12 education finance from the standpoint of education reform policy. The tools of analysis include economics, public finance, law and political science. Topics include: revenue sources and fiscal federalism, standardsbased reform and school finance, school funding formulas, adequacy lawsuits, the politics of school funding, school funding and markets. The course also features empirical evidence on the educational impact of education finance. (Typically offered: Spring Even Years)

\section*{EDRE 6053. Measurement of Educational Outcomes. 3 Hours.}

This course will train students to consider the various types of outcome and assessment measures used for education at the K-12 level throughout the United States; further, the students will engage in analyses of research that relies on these various outcome measures. (Typically offered: Fall Odd Years)

EDRE 6103. Quantitative Analytical Techniques for Education Policy. 3 Hours. This course introduces students to the quantitative techniques required for the evaluation of education policies and interventions. The class will focus on the identification and estimation of causal effects, necessary assumptions, and how to deal with the failure of these assumptions. Major topics covered include randomized experiments, the ordinary least squares regression method, matching estimators, instrumental variable methods, regression discontinuity, difference in difference methods, and introduction to estimation strategies with panel data models. (Typically offered: Fall)

EDRE 6123. Intermediate Quantitative Analytical Techniques for Education Policy. 3 Hours.
This course builds on the content presented in EDRE 6103 by delving more deeply into benefits and limitations of the Ordinary Least Squares (OLS) estimator while also introducing the student to new estimation techniques. Students will be introduced to panel data estimation techniques, methods for robust inferences, and use of the Maximum Likelihood estimator for estimating binary and multinomial choice models. Students will also expand on their knowledge of how to implement STATA in practical research settings. Prerequisite: EDRE 6103. (Typically offered: Spring)

\section*{EDRE 6143. Advanced Quantitative Analytical Techniques for Education} Policy. 3 Hours.
This course introduces students to advanced estimation methods and empirical models often used in education policy empirical research, such as Maximum Likelihood to estimate discrete choice models, censored models and selection models, duration models, Generalized Method of Moments to estimate dynamic panel data models, and bootstrapping of standard errors and simulation-based inference. Prerequisite: EDRE 6103. (Typically offered: Irregular)

EDRE 6213. Program Evaluation and Research Design. 3 Hours.
This course provides students with training in the methods used to generate evidence-based answers to questions regarding the efficacy and impacts of education programs. The central questions that motivate most educational program evaluations are: (1) What is the problem? (2) What policies or programs are in place to address the problem? (3) What is their effect? (4) What works better? (5) What are the relative benefits and costs of alternatives? (Typically offered: Fall) This course is cross-listed with ESRM 6613.

EDRE 6223. Research Seminar in Education Policy. 3 Hours.
This course provides students with the opportunity to learn about education policy research by interacting directly with the leading scholars and practitioners in the field. Students will also gain a foundation in the field of education policy research by reading and discussing some of the founding works of the field. (Typically offered: Spring)
EDRE 636V. Special Problems. 1-6 Hour.
Independent reading and investigation in education policy under faculty supervision. Prerequisite: Approval of EDRE Graduate Director. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{EDRE 6413. Issues in Education Policy. 3 Hours.}

This course examines how K-12 education policy is designed and implemented in the United States. Students will develop a working knowledge of policymaking frameworks to examine major education policies of current interest and debate key policy issues that arise at each level of government. In great measure, the goals of the course will be accomplished through the consideration of opposing stances on key educational policy debates and issues that are of current import. (Typically offered: Fall)
This course is cross-listed with EDFD 5683.
EDRE 6423. Seminar in School Choice Policy. 3 Hours.
This course examines parental school choice - perhaps the most controversial education reform of our age. Students will be introduced to the full set of school choice policies, including charter schools and vouchers, and evaluate their benefits and drawbacks as educational interventions. (Typically offered: Fall Even Years)

EDRE 6433. Seminar in Education Accountability Policy. 3 Hours.
This course examines K-12 school and district accountability under state and Federal law (e.g. NCLB), as well as teacher and student accountability (e.g. exit exams). Topics include the theory of incentives and politics of tradeoffs, measurement issues of policy implementation, and statistical evidence on policy effects on performance. (Typically offered: Irregular)

\section*{EDRE 6443. Seminar in Education Leadership Policy. 3 Hours.}

This course will examine the individual and systemic prerequisites of effective leadership of schools and school systems, and effective leadership techniques. It will consider the differences between public and private sector leadership. It will also explore ways to identify effective and ineffective leaders, and design and evaluate systems to recruit and train the former and reassign the latter. (Typically offered: Fall Odd Years)

\section*{EDRE 6453. Seminar in Teacher Quality and Public Policy. 3 Hours.}

Examines how our public system of education shapes the preparation and continued professional development of K-12 teachers, and how that system has been influenced by standards-based education reform as well as efforts to enhance the quality of teaching and learning in public schools. Uses education reform legislation in several states as case studies to illustrate the successes and pitfalls of attempts to reform teacher education and licensure through public policy. (Typically offered: Spring Even Years)

\section*{EDRE 6463. Psychology of Education. 3 Hours.}

This course explores psychological science findings that pertain to education research and policy with a focus on empirical evidence. Particular emphasis will be on studying individual differences in the context of education. Historical, methodological, and measurement perspectives will be introduced and psychological constructs studied and applied in educational contexts will be examined. (Typically offered: Spring Odd Years)

EDRE 674V. Internship in Education Policy. 1-6 Hour.
Internship at a public or private entity involved in the making or implementation of education policy. Paper required on a significant aspect of the internship experience. Prerequisite: Approval of EDRE Graduate Director. (Typically offered: Irregular)
EDRE 699V. Special Topics. 1-3 Hour.
Topics vary depending on instructor. Prerequisite: Approval of EDRE Graduate Director. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

EDRE 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Irregular) May be repeated for degree credit.

\section*{Educational Foundations (EDFD)}

\section*{Courses}

EDFD 5373. Psychological Foundations of Teaching and Learning. 3 Hours.
Psychological principles and research applied to classroom learning and instruction. Social, emotional, and intellectual factors relevant to topics such as readiness, motivation, discipline, and evaluation in the classroom. (Typically offered: Irregular)

EDFD 5683. Issues in Educational Policy. 3 Hours.
This course examines how K-12 education policy is designed and implemented in the United States. Students will develop a working knowledge of policymaking frameworks to examine major education policies of current interest and debate key policy issues that arise at each level of government. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with EDRE 6413.

\section*{Educational Leadership (EDLE) Courses}

\section*{EDLE 5003. Schools and Society. 3 Hours.}

Schools and Society is an introduction to the social, structural, political and historical forces that have created the American school system. (Typically offered: Summer Even Years)

\section*{EDLE 5013. School Organization and Administration. 3 Hours.}

Analysis of structure and organization of American public education; fundamental principles of school management and administration. (Typically offered: Fall; Summer Odd Years)

\section*{EDLE 5023. The School Principalship. 3 Hours.}

Duties and responsibilities of the public school building administrator; examination and analysis of problems, issues, and current trends in the theory and practice of the principalship. (Typically offered: Spring and Summer)

\section*{EDLE 5033. Psychology of Learning. 3 Hours.}

This course prepares educational leaders to create and sustain a learning centered environment in school settings. Students will study learning theory across the lifespan and apply it to the practice of instructional leadership, curriculum design, and staff development. (Typically offered: Spring; Summer Odd Years)
EDLE 5043. Leadership Ethics. 3 Hours.
Leadership Ethics is an experiential based course grounded in ethical decision making theory that uses case study and practice to study school based ethical dilemmas. (Typically offered: Fall; Summer Odd Years)

\section*{EDLE 5053. School Law. 3 Hours.}

Legal aspects of public and private schooling: federal and state legislative statues and judicial decisions, with emphasis upon Arkansas public education. (Typically offered: Fall; Summer Odd Years)

EDLE 5063. Instructional Leadership, Planning, and Supervision. 3 Hours. Instructional Leadership, Planning, and Supervision is designed to prepare practitioners to seize the role of educational leader at the school site level through the development of a vision that will be used to drive a data driven instructional school plan. (Typically offered: Fall; Summer Odd Years)

EDLE 5073. Research for Leaders. 3 Hours.
This course introduces research methodology that will support school leaders as consumers of educational research and supervisors of action research within their schools. Practical application of research for school leaders is emphasized. (Typically offered: Spring; Summer Odd Years)

\section*{EDLE 5083. Analytical Decision-Making. 3 Hours.}

Analytical Decision Making is a performance based examination of the principles and practices related to the building administrator's role in the development, administration, and evaluation of curricular programs in public schools. This includes creating a school culture, fostering communication, aligning curriculum with state mandated standards, and staff development. (Typically offered: Spring Even years; Summer)

\section*{EDLE 5093. Effective Leadership for School Improvement. 3 Hours.}

A performance based examination of strategic planning, group facilitation and decision-making, organizational behavior and development, professional ethics and standards, student services administration, and principles of effective leadership. (Typically offered: Spring and Summer)
EDLE 5103. School Building-Level Finance. 3 Hours.
The course will provide an introduction to the leading theories and practices associated with budgeting and finance at the school-building level. Additionally, the course will concentrate on issues relating to resource allocation at the K-12 level, including an examination of political frameworks and policy issues common to public schools, concepts central to K-12 finance and budgeting, purposes, designs, and uses of school budgets, procedures for generating, analyzing, and interpreting issues related to finance and budgeting specifically at the schoolbuilding level. Prerequisite: Admission to M.Ed. in Educational Leadership (EDLE), or Ed.S. in Educational Leadership (EDLE), or graduate certificate in Building-Level Administration (PSBLMC), or graduate certificate in District-Level Administration (PSDLMC). (Typically offered: Summer)

\section*{EDLE 574V. Internship. 1-6 Hour.}

Supervised in-school/district experiences individually designed to afford opportunities to apply previously-acquired knowledge and skills in administrative workplace settings. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

EDLE 599V. Seminar. 1-6 Hour.
Important foundational topics in educational leadership that are current and critical will be taught in this Master's-level seminar. Topics range from the psychology of learning and leading to how schools and society interact in the 21st century. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{EDLE 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{EDLE 6013. Problems of Practice for Educational Leaders. 3 Hours.}

Problems of Practice is designed to extend and refine students' thinking, experience, and knowledge about the Education Doctorate (EdD), as well as selecting a Problem of Practice that can contribute to the following program goals: advanced analytical reasoning skills; positive impact on professional practice; and the refinement of the scholar-practitioner. (Typically offered: Summer)

EDLE 6023. School Facilities Planning and Management. 3 Hours.
School facilities planning, management, cost analysis, operations, and maintenance of the school plant. (Typically offered: Fall Odd Years)
EDLE 6053. School-Community Relations. 3 Hours.
Community analysis, politics and education; power groups and influences; school issues and public responses; local policy development and implementation; effective communication and public relations strategies. (Typically offered: Spring Even Years)

\section*{EDLE 605V. Independent Study. 1-6 Hour.}

Independent study. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{EDLE 6093. School District Governance: The Superintendency. 3 Hours.}

Analysis of the organizational and governance structures of American public education at national, state, and local levels. (Typically offered: Fall Even Years)

\section*{EDLE 6103. School Finance. 3 Hours.}

Principles, issues and problems of school funding formulae and fiscal allocations to school districts. (Typically offered: Spring Odd Years)

\section*{EDLE 6123. Advanced Fiscal Issues. 3 Hours.}

This course is an advanced course at the graduate level in the Graduate Educational Leadership Program. The Scholar Practitioner model at this level will pursue an in-depth study of knowledge, skills, and dispositions needed for the successful undertaking of analyzing budgeting and finance issues arising at the school and district-level. Prerequisite: Graduate standing and acceptance into EDLEES program. (Typically offered: Irregular)

\section*{EDLE 6173. School Business Management. 3 Hours.}

Fiscal and resource management in public schools: budgeting, insurance, purchasing, and accounting. (Typically offered: Summer Odd Years)

\section*{EDLE 6333. Advanced Legal Issues in Education. 3 Hours.}

The examination and discussion of advanced legal issues affecting public school education. Prerequisite: Advanced graduate standing. (Typically offered: Fall Even Years)

\section*{EDLE 6433. Legal Aspects of Special Education. 3 Hours.}

A study of litigation and legislation in special education, federal and state laws and court cases, and due process hearings. (Typically offered: Irregular)
This course is cross-listed with SPED 6433.
EDLE 6503. Topics in Educational Research for School Administration. 3 Hours.
Application of educational research in the school setting by educational administrators. Emphasis placed on the use of state and local school or district data, data analysis, interpretation and reporting, hands-on experience with SPSS, and the formal process of writing a research report. Prerequisite: Advanced graduate standing. (Typically offered: Fall Odd Years)

\section*{EDLE 6513. Program Evaluation in Education. 3 Hours.}

Program Evaluation in Education is designed to introduce students to concepts and methods of policy and program evaluation. Emphasis will be placed on preparing educational leadership students to conduct a program evaluation specialist project of dissertation. (Typically offered: Summer)

\section*{EDLE 6533. Educational Policy. 3 Hours.}

Examination of the research and theory related to the evolution of local, state, and federal governance and educational policy. Emphasis given to the consideration of procedures involving policy formulation, implementation, and analysis. (Typically offered: Spring Odd Years)

\section*{EDLE 6543. Introduction to Qualitative Research. 3 Hours.}

This course offers an introduction to the qualitative approach to research in the Social Sciences. In particular, this course focuses on initial qualitative research designs that support planning, problem solving, and evaluation for educational leaders. Developing a conceptual framework, gaining an initial understanding of the methods of data collection and analysis, and establishing credibility in qualitative research are discussed. This course will be taught online using Blackboard and will require synchronous online class meetings that will require a webcam and microphone. Prerequisite: Admission into EDD in Educational Leadership program or instructor consent. (Typically offered: Fall)

EDLE 6553. Advanced Qualitative Methods in Educational Research. 3 Hours. This course has been designed to provide graduate students with a more indepth understanding of qualitative research methods. Emphasis will be placed on preparing educational leadership students to design a qualitative or mixed-method dissertation study. Prerequisite: Admission into EDD in Educational Leadership program or instructor consent. (Typically offered: Spring)

EDLE 6583. Statistical Literacy for Educational Leaders. 3 Hours.
Statistical Literacy for Leaders is designed to extend and refine students' thinking, experiences, and knowledge about planning and executing research in an educational setting. Students will develop a greater understanding of how statistics are used to drive decision-making in educational settings and become more critical consumers of educational research. Prerequisite: Admission into the Ed.D. in Educational Leadership. (Typically offered: Spring)

EDLE 674V. Internship. 1-6 Hour.
Internship. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{EDLE 680V. Educational Specialist Project. 1-6 Hour.}

An original project, research project, or report required of all Ed.S. Degree candidates. Prerequisite: Admission to the Ed.S. program. (Typically offered: Fall, Spring and Summer)

\section*{EDLE 699V. Advanced Seminar. 1-6 Hour.}

Seminar. Prerequisite: Advanced graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

EDLE 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
EDLE 7413. Problem of Practice Dissertation Methods and Implementation. 3 Hours.
This course guides students through all phases of the capstone experience in educational leadership from program design to completion and dissemination of the final product to scholarly and practitioner audiences. Prerequisite: Admission to the EDLE Ed.D. program. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

\section*{Educational Statistics and Research Methods (ESRM)}

\section*{Courses}

\section*{ESRM 2403. Statistics in Nursing. 3 Hours.}

Introduction to descriptive and inferential statistics used in nursing research. (Typically offered: Fall, Spring and Summer)
ESRM 5013. Research Methods in Education. 3 Hours.
General orientation course which considers the nature of research problems in education and the techniques used by investigators in solving those problems. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

ESRM 5303. Healthcare Analytics Fundamentals. 3 Hours.
The Healthcare Analytics Fundamentals course provides fundamental knowledge and skills in several major areas of healthcare and business data analytics in a modular format. Several modules that emphasize healthcare analytics as well as data fundamentals, concepts, and problems are used and include - Healthcare Analytics Concepts, Problems, and Management; Intermediate \& Advanced Spreadsheet Topics; Relational Databases \& SOL; and Introductory Programming with Python. Prerequisite: Program Director permission. (Typically offered: Irregular)

ESRM 5393. Statistics in Education and Health Professions. 3 Hours.
Applied statistics course for Master's degree candidates. Includes concepts and operations for frequency distributions, graphing techniques, measures of central tendency and variation, sampling, hypothesis testing, and interpretation of statistical results. (Typically offered: Fall, Spring and Summer)

\section*{ESRM 5823. Healthcare Business Analytics I. 3 Hours.}

Fundamentals of healthcare analytics to include data patterns, forecasting techniques, and linear prediction models, including theoretical and mathematical study of assumptions in model building. Prerequisite: ESRM 5303, ISYS 5503, ISYS 5833, and ISYS 5843, or permission of the instructor. (Typically offered: Irregular)

ESRM 5853. Healthcare Business Analytics II. 3 Hours.
Intermediate healthcare analytics to include categorical analyses and logistic regression for binary and polytomous models applied to healthcare. Prerequisite: ESRM 5823 or instructor permission. (Typically offered: Irregular)

\section*{ESRM 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
ESRM 605V. Independent Study. 1-6 Hour.
Independent study. (Typically offered: Fall, Spring and Summer)
ESRM 6403. Educational Statistics and Data Processing. 3 Hours.
Theory and application of frequency distributions, graphical methods, central tendency, variability, simple regression and correlation indexes, chi-square, sampling, and parameter estimation, and hypothesis testing. Use of the computer for the organization, reduction, and analysis of data (required of doctoral candidates). Prerequisite: ESRM 5013 or ESRM 5393 or an equivalent course, each with a grade of \(C\) or better. (Typically offered: Fall, Spring and Summer)

\section*{ESRM 6413. Experimental Design in Education. 3 Hours.}

Principles of experimental design as applied to educational situations. Special emphasis on analysis of variance techniques used in educational research. Prerequisite: ESRM 6403 with a grade of \(C\) or better or an equivalent course with a grade of \(C\) or better. (Typically offered: Spring)

\section*{ESRM 6423. Multiple Regression Techniques for Education. 3 Hours.}

Introduction to multiple regression procedures for analyzing data as applied in educational settings, including multicollearity, dummy variables, analysis of covariance, curvi-linear regression, and path analysis. Prerequisite: ESRM 6403 with a grade of \(C\) or better or an equivalent course with a grade of \(C\) or better. (Typically offered: Fall)

\section*{ESRM 6453. Applied Multivariate Statistics. 3 Hours.}

Multivariate statistical procedures as applied to educational research settings including discriminant analysis, principal components analysis, factor analysis, canonical correlation, and cluster analysis. Emphasis on use of existing computer statistical packages. Prerequisite: ESRM 6413 and ESRM 6423, both with a grade of C or better. (Typically offered: Spring)

\section*{ESRM 6513. Hierarchical Linear Modeling. 3 Hours.}

This course covers the theory and applications of hierarchical linear modeling (HLM) also known as multilevel modeling. Both the conceptual and methodological issues for analyses of nested (clustered) data in using HLM will be reviewed, including linear models, non-linear models, growth models, and some alternative designs. Prerequisite: ESRM 6413 and ESRM 6423, both with a grade of \(C\) or better. (Typically offered: Fall Even Years)

\section*{ESRM 6523. Structural Equation Modeling. 3 Hours.}

This course provides a detailed introduction to structural equation modeling (SEM) based on students' previous knowledge of multiple linear regression. Topics include path analysis, confirmatory factor analysis, full latent variable models, estimation techniques, data-model fit analysis, model comparison, and other topics, potentially equivalent models, specification searches, latent mean models, parameter invariance, multi-group models, and models of discrete data. Prerequisite: ESRM 6423 with a grade of C or better. (Typically offered: Spring)

\section*{ESRM 6533. Qualitative Research. 3 Hours.}

Introduction of non-quantitative methods, including data collection through interviews, field observation, records research, internal and external validity problems in qualitative research. Prerequisite: ESRM 6403 with a grade of \(C\) or better. (Typically offered: Fall and Spring)

ESRM 6543. Advanced Qualitative Research. 3 Hours.
Preparation for the conduct of qualitative research, structuring, literature reviews, data collection and analysis, and reporting results. Prerequisite: ESRM 6533 with a grade of \(C\) or better. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{ESRM 6553. Advanced Multivariate Statistics. 3 Hours.}

Builds on the foundation provided in Multivariate and introduces techniques that extend methodological elements of canonical, discriminant, factor analytic, and longitudinal analyses, providing the mathematical and theoretical foundations necessary for these designs. Prerequisite: ESRM 6453 with a grade of \(C\) or better. (Typically offered: Spring Even Years)
ESRM 6613. Evaluation of Policies, Programs, and Projects. 3 Hours. Introduction to evaluation in social science research, including why and how evaluations of programs, projects, and policies are conducted; includes analysis of actual evaluations in a variety of disciplines. Prerequisite: ESRM 6403 with a grade of \(C\) or better. (Typically offered: Fall)
This course is cross-listed with EDRE 6213.

\section*{ESRM 6653. Measurement and Evaluation. 3 Hours.}

Fundamentals of measurement: scales, scores, norms, reliability, validity. Test and scale construction and item analysis. Standardized measures and program evaluation models in decision making. Prerequisite: ESRM 6403 with a grade of C or better. (Typically offered: Fall)

\section*{ESRM 668V. Practicum in Research. 1-6 Hour.}

Practical experience in educational research on campus, in school systems, or in other agencies in educational program development. (Typically offered: Irregular)

\section*{ESRM 6753. Item Response Theory. 3 Hours.}

Topics of measurement in the psychometric field focusing on item response theory; item level and test level analyses including differential item functioning, test dimensionality, computer adaptive testing, equating, and general evaluation and usage of measurement instruments. Prerequisite: ESRM 6653 with a grade of \(C\) or better. (Typically offered: Spring Odd Years)
ESRM 699V. Seminar. 1-6 Hour.
Seminar. Prerequisite: Advanced graduate standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ESRM 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Educational Studies (EDST) \\ Courses}

\section*{EDST 2003. Introduction to Educational Studies. 3 Hours.}

The course explores the field of education through the lens of educational studies, a unique interdisciplinary association of looking at education as a function of society, psychology, politics, religion, and economic interests. This course introduces non-education field students to the difference between the various fields of study within education, including, but not limited to: instruction, curriculum, comparative education, multicultural education, informal education, content education, pedagogy, education policy, support services, and community education. No field observation hours are required for this course. (Typically offered: Fall and Summer)

EDST 3003. Formative Readings for Cultural Education. 3 Hours.
This course examines some of the historically important readings stemming from identification of the America Reads project produced by the Library of Congress (2014-2016). Special attention will be devoted to the understanding of the relevance of these historical documents and texts to the American identity. The course will focus on the role education plays in the creation of the current society through cultural transmission. The role of education through public schooling in the formations of citizens has been historically documented and deemed necessary under American political thought. This course is constructed to establish linkages of educational trends in the promotion of literacy and the popularization of popular cultural literature of the 18th, 19th, and 20th century that has shaped the social, economic, environmental, and political landscape that a citizen may navigate over their lifetime. (Typically offered: Spring)

EDST 3003H. Honors Formative Readings for Cultural Education. 3 Hours. This course examines some of the historically important readings stemming from identification of the America Reads project produced by the Library of Congress (2014-2016). Special attention will be devoted to the understanding of the relevance of these historical documents and texts to the American identity. The course will focus on the role education plays in the creation of the current society through cultural transmission. The role of education through public schooling in the formations of citizens has been historically documented and deemed necessary under American political thought. This course is constructed to establish linkages of educational trends in the promotion of literacy and the popularization of popular cultural literature of the 18th, 19th, and 20th century that has shaped the social, economic, environmental, and political landscape that a citizen may navigate over their lifetime. Prerequisite: Honors standing. (Typically offered: Spring) This course is equivalent to EDST 3003.

\section*{EDST 3113. Legal Developments in Education. 3 Hours.}

This lecture provides an overview of issues in the field of education coming out of legal developments in the United States over the last two centuries involving the legal basis for public schooling, Constitutional issues in public schools, and contract law governing private schooling. Special interest is paid to education legislation and case law on educational issues. (Typically offered: Fall)

\section*{EDST 3203. Multicultural Education Issues. 3 Hours.}

The purpose of this course is to give pre-service educators an opportunity to explore various facets of multiculturalism and their implications for future practice. We will examine the impact of race, class, gender, sexual orientation, religion, and other aspects of social group identities on teaching and learning as they relate to contexts in multiple learning environments. While this course is broad in scope, the primary aim is to assist future educators in exploring what it means to be an educator in a society that is multicultural, within a vast educational system (public and private) which is stratified according to multiple factors. Students should not be in enrolled in EDST 3203 \& CIED 4403 during the same semester. (Typically offered: Fall)

\section*{EDST 3223. American Educational History. 3 Hours.}

This course is designed to offer a comprehensive study of the history of the American education system. Students completing this course will be able to document the diverse and often competing influences into what has become the public school structure, as well as, the second system of American schools, parochial schools, arising out of the schooling conflict of the 1880's. Starting with the development of literacy skills and the formation of township or colony schools, the linage of schooling will be investigated from the late 1600's to the present time. (Typically offered: Fall, Spring and Summer)

\section*{EDST 3223H. Honors American Educational History. 3 Hours.}

This course is designed to offer a comprehensive study of the history of the American education system. Students completing this course will be able to document the diverse and often competing influences into what has become the public school structure, as well as, the second system of American schools, parochial schools, arising out of the schooling conflict of the 1880's. Starting with the development of literacy skills and the formation of township or colony schools, the linage of schooling will be investigated from the late 1600's to the present time. Prerequisite: Honors standing. (Typically offered: Fall, Spring and Summer) This course is equivalent to EDST 3223.

\section*{EDST 3313. Trauma Based Educational Practices. 3 Hours.}

Socio-emotional learning and trauma-based classroom instruction are needed pre-professional knowledge bases for classroom teachers that shape classroom management practices and student-engagement relationships. This course focuses on identifying and understanding daily classroom interactions with students having previously experienced out-of-school trauma that manifests itself in classroom environment. This course is intended for teacher-educators to modify student relationship engagement and not intended for diagnosis or clinical practices. Prerequisite: EDSTBS-PARA major. (Typically offered: Fall)

EDST 3333. Children's \& Young Adult Literature in Educational Settings. 3 Hours.
This course provides a comprehensive overview of children's, adolescent, and young adult literature across educational settings, both formal and informal. Picture books, novels, informational texts, and the novelization of movies and vice versa for children and adolescent audiences will be explored. (Typically offered: Fall)

EDST 3913. Formal Classroom Internship in Education. 3 Hours.
The internship is a prearranged onsite work experience serving in an educationally related field. The formal classroom internship is taken after the completion of CIED 1013 and either along with or after the completion of CIED 3033. Locations have been selected by the EDST program and Office of Teacher Education. Internships my be served at a variety of public or private based educational services or agencies. The internship experience must include a minimum number of practical work hours (120), reflective journaling, mid-semester evaluation, and final report. All arrangements for internships are coordinated through the COEHP Office of Field Placement by the Director of Field Placement. State of Arkansas background checks may be required for individuals completing internships at locations serving populations of minors. Prerequisite: CIED 1013. Pre- or Corequisite: CIED 3033. (Typically offered: Fall and Spring)

EDST 3923. Informal Based or Outdoor Internship in Education. 3 Hours.
The internship is a prearranged onsite work experience serving in an educationally related field. The informal/outdoor internship is taken during or after taking EDST 4113. Locations have been selected by the EDST program and Office of Teacher Education; during the summer, students may petition for a camp based informal experience that is outside of the typical semester offering. Internships my be served at a variety of public or private based educational services or agencies. The internship experience must include a minimum number of practical work hours (120), reflective journaling, mid-semester evaluation, and final report. All arrangements for internships are coordinated through the COEHP Office of Field Placement by the Director of Field Placement. State of Arkansas background checks may be required for individuals completing internships at locations serving populations of minors. Prerequisite: EDST 4113. Pre- or Corequisite: CIED 3033. (Typically offered: Spring and Summer)

\section*{EDST 399V. Special Topics in Educational Studies. 1-3 Hour.}

Discussion and advanced studies on selected topics in educational studies. Special focus on recent and emerging topics in education. Junior (3000) level course offerings. Course may be repeated only for unique topic enrollments. (Typically offered: Irregular) May be repeated for up to 15 hours of degree credit.

EDST 399VH. Honors Special Topics in Educational Studies. 1-3 Hour. Discussion and advanced studies on selected topics in educational studies. Special focus on recent and emerging topics in education. Junior (3000) level course offerings. Each offering of EDST 399VH must be unique. Student may not repeat the same topic for degree credit multiple times. (Typically offered: Irregular) May be repeated for up to 15 hours of degree credit.
This course is equivalent to EDST 399V.

\section*{EDST 4003. Philosophy of Education. 3 Hours.}

This course provides a review of philosophical ideas in education and an introduction to research, methodologies, foundation theories in education. Students explore historical ideas in philosophy pertaining to education and how those ideas contribute to current educational practices. Students in the course learn about the nature of research, both theoretical and applied, and the process of developing future research based agendas. Prerequisite: Junior or senior standing. (Typically offered: Spring)

\section*{EDST 4003H. Honors Philosophy of Education. 3 Hours.}

This course provides a review of philosophical ideas in education and an introduction to research, methodologies, foundation theories in education. Students explore historical ideas in philosophy pertaining to education and how those ideas contribute to current educational practices. Students in the course learn about the nature of research, both theoretical and applied, and the process of developing future research based agendas. Prerequisite: Honors standing and (junior or senior standing). (Typically offered: Spring)
This course is equivalent to EDST 4003.
EDST 4033. Understanding Professional Teaching Standards I. 3 Hours. This course provides preparation and review for the required initial post-graduation licensure testing requirements mandated by the State of Arkansas. Currently these testing requirements are Pearson Education's Foundation of Reading, Educational Testing Services' Praxis Series Assessments: Core Academic Skills for Educators, Principles of Learning \& Teaching, and Specific Licensure Area Content Assessments. Prerequisite: EDSTBS-PARA major. (Typically offered: Fall)

EDST 4043. Understanding Professional Teaching Standards II. 3 Hours.
This is the second course in the professional test preparation series. This course provides preparation and review for the required initial post-graduation licensure testing requirements mandated by the State of Arkansas. Currently these testing requirements are Pearson Education's Foundation of Reading, Educational Testing Services' Praxis Series Assessments: Core Academic Skills for Educators, Principles of Learning \& Teaching, and Specific Licensure Area Content Assessments. Prerequisite: EDSTBS-PARA major and EDST 4033. (Typically offered: Spring)

EDST 4113. Teaching and Funding Outdoor \& Informal Education. 3 Hours. In-depth exploration of natural/outdoors education and informal education and grant writing for education will be covered. Methods and techniques in the preparation and delivery of teaching in nontraditional instructional settings (informal education) will be developed. Course participants will be required to teach an outdoor and/or informal education class and participate in a collaborative grant application process. (Typically offered: Spring)
EDST 4213. Religion, Education, \& Religious Education. 3 Hours.
This course provides a comprehensive introduction on the influences of religion in education, particularly in relation to the dynamic of religion in public education in the United States. Students in the course learn about the nature of the study of religion, religious studies, and religious education, as well as the teaching of religion. Prerequisite: Junior or senior level standing. (Typically offered: Fall)

EDST 4933. Capstone Seminar and Final Internship in Education. 3 Hours. The capstone course provides students with a culminating experience for Educational Studies. The course provides an opportunity for students to develop a portfolio of their learning and to evaluate their overall program performance in preparation for completion of their degrees. This course contains 100 hours of internship experience and will serve as the final internship experience for EDSTBS majors. This course includes 20 hours of coursework along with the required internship experience. This course should only be enrolled in after the completion of EDST 3913 and EDST 3923 and during the students final year of coursework. All internship placements are arranged by the Office of Field Placement and the Director of Field Placement. Prerequisite: EDST 3913, EDST 3923, and senior standing. (Typically offered: Fall and Spring)
EDST 4993. Para-Professional Internship. 3 Hours.
120-hour field/formal classroom-based experience including lesson planning, classroom activity, classroom management, and reflective experience integration. Prerequisite: Admission into the EDSTBS-PARA major. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

\section*{Educational Technology (ETEC)}

\section*{Courses}

ETEC 5203. Technology Foundations. 3 Hours.
A comprehensive survey of individuals, processes, and products that have affected the evolution of the field of educational technology. (Typically offered: Summer)

\section*{ETEC 5213. Media and Web Design. 3 Hours.}

A study of coding, platforms for media development, and web design with a focus on developing educational products. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{ETEC 5243. Instructional Design. 3 Hours.}

A comprehensive study of the models used to systematically design web-based instruction. Prerequisite: Graduate standing. (Typically offered: Fall)

ETEC 5253. Leadership and Innovation. 3 Hours.
A study of leadership roles, responsibilities, concepts, and strategies for building educational technology infrastructure in a variety of contexts. (Typically offered:
Spring)
ETEC 5263. Grant Writing. 3 Hours.
A study of issues and topics related to research and grant writing with a focus upon proposal development and submission for consideration. (Typically offered: Summer)

\section*{ETEC 5303. Technology Integration in K12. 3 Hours.}

A study of learning theories and technologies that can be utilized to support and to enhance instruction in multiple subject areas in the K-12 classroom. Prerequisite: Graduate standing. (Typically offered: Spring)

ETEC 5313. Visual Literacy. 3 Hours.
A study of visual literacy research and tools used to create visuals that help enhance content delivery to learners. (Typically offered: Summer)
ETEC 5373. Designing Websites. 3 Hours.
Students design websites for content delivery with a focus upon multiple platforms, effective design principles, accessibility, and copyright compliance. Prerequisite:
Must be an Educational Technology Master of Education (ETECME) major.
(Typically offered: Spring) May be repeated for up to 3 hours of degree credit.
ETEC 5743. Internship. 3 Hours.
A supervised field placement in educational technology that provides experience consistent with the student's professional goals and training emphasis. Internship experiences are planning and directed under the guidance of a faculty member.
On-campus and on-site supervision is required. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ETEC 5981. Eportfolio Production. 1 Hour.}

This is a capstone course that is typically taken in the last semester of coursework and designed to: 1) review key constructs presented within the Educational Technology curriculum; 2) provide ETEC students the opportunity for reflection relative to his/her learning of the key concepts; and 3) utilize technology to assemble student-created artifacts that demonstrate mastery of the key concepts. (Typically offered: Fall and Spring)

ETEC 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ETEC 6223. Research and Strategic Planning. 3 Hours.}

A study of quantitative, qualitative and mixed methods with a focus upon the strategic planning process and the development of skills necessary to implement effective educational technoogy and instructional design programs. (Typically offered: Fall)

\section*{ETEC 6253. Distance Learning. 3 Hours.}

A study of aspects of module design to facilitate learning in online and blended environments. (Typically offered: Spring)

\section*{ETEC 6393. Issues and Trends. 3 Hours.}

A study of challenges related to the infusion of technology into school and training environments with a focus on policies, trends, and issues in the field. (Typically offered: Fall)

\section*{Electrical Engineering (ELEG)}

\section*{Courses}

\section*{ELEG 2101L. Electric Circuits I Laboratory. 1 Hour.}

Experimental investigation of the steady-state behavior of resistive circuits excited by DC sources and transient behavior of simple R, L, and C circuits. Topics include fundamental laws of circuit theory applied to resistive networks and time response functions of R-L and R-C circuits. Corequisite: ELEG 2103. (Typically offered: Fall and Summer)

\section*{ELEG 2103. Electric Circuits I. 3 Hours.}

Introduction to circuit variables, elements, and simple resistive circuits. Analysis techniques applied to resistive circuits. The concept of inductance, capacitance and mutual inductance. The natural and step responses of RL, RC, and RLC circuits. Corequisite: ELEG 2101L. Pre- or Corequisite: (MATH 2564 or MATH 2564C) and PHYS 2074. Prerequisite: PHYS 2054. (Typically offered: Fall and Summer)
ELEG 2111L. Electric Circuits II Laboratory. 1 Hour.
Experimental investigation of the steady-state behavior of circuits excited by sinusoidal sources. Topics include complex power, three-phase circuits, transformers, and resonance. Corequisite: ELEG 2113. (Typically offered: Spring and Summer)

ELEG 2113. Electric Circuits II. 3 Hours.
Introduction to complex numbers. Sinusoidal steady-state analysis of electric circuits, active, reactive, apparent and complex power; balanced and unbalanced threephase circuits; mutual inductance; the use of the Laplace transform for electric circuit analysis and two-port networks. Corequisite: ELEG 2111L. Pre- or Corequisite: MATH 2584. Prerequisite: ELEG 2103, ELEG 2101L and PHYS 2074. (Typically offered: Spring and Summer)

ELEG 287V. Special Topics in Electrical Engineering. 1-4 Hour.
Consideration of current electrical engineering topics not covered in other courses. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

\section*{ELEG 2904. Digital Design. 4 Hours.}

To introduce students to modern logic concepts, problem solving and design principles, and vocabulary and philosophy of the digital world. Corequisite: Lab component. Prerequisite: Engineering major. (Typically offered: Fall)
This course is cross-listed with CSCE 2114.

\section*{ELEG 3124. System \& Signal Analysis. 4 Hours.}

Definition and description of signals and systems; analog, digital, continuousand discrete-time and frequency analysis of systems, Z- and Fourier Transforms, sampling and signal reconstruction, filter design and engineering applications. Preor Corequisite: MATH 2584. Corequisite: Lab component. Prerequisite: ELEG 2103 or ELEG 3903 or BMEG 2904. (Typically offered: Fall)

\section*{ELEG 3124H. Honors System \& Signal Analysis. 4 Hours.}

Definition and description of signals and systems; analog, digital, continuousand discrete-time and frequency analysis of systems, Z- and Fourier Transforms, sampling and signal reconstruction, filter design and engineering applications. Preor Corequisite: MATH 2584. Corequisite: Lab component. Prerequisite: ELEG 2103 or ELEG 3903 or BMEG 2904. (Typically offered: Fall)
This course is equivalent to ELEG 3124.
ELEG 3143. Probability \& Stochastic Processes. 3 Hours.
Review of system analysis, probability, random variables, stochastic processes, auto correlation, power spectral density, systems with random inputs in the time and frequency domain, and applications. Prerequisite: ELEG 3124. Pre- or Corequisite: MATH 2574. (Typically offered: Spring)

ELEG 3143H. Honors Probability \& Stochastic Processes. 3 Hours.
Review of system analysis, probability, random variables, stochastic processes, auto correlation, power spectral density, systems with random inputs in the time and frequency domain, and applications. Pre- or Corequisite: ELEG 3124. (Typically offered: Spring)
This course is equivalent to ELEG 3143.

\section*{ELEG 3211L. Electronics I Laboratory. 1 Hour.}

Experimental investigation into electronic circuit analysis concepts. Topics include: diode behavior and applications, zener diode regulator design, bipolar junction transistor biasing, BJT common-emitter amplifier design, and operational amplifier fundamentals. Corequisite: ELEG 3213. (Typically offered: Fall and Spring)

\section*{ELEG 3211M. Honors Electronics I Laboratory. 1 Hour.}

Experimental investigation into electronic circuit analysis concepts. Topics include: diode behavior and applications, zener diode regulator design, bipolar junction transistor biasing, BJT common-emitter amplifier design, and operational amplifier fundamentals. Corequisite: ELEG 3213H. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to ELEG 3211L.

\section*{ELEG 3213. Electronics I. 3 Hours.}

Introduction to electronic systems and signal processing, operational amplifiers, diodes, non-linear circuit applications, MOSFETS, and BJTs. Course has a lab component. Pre- or Corequisite: MATH 2574 and ELEG 2113. Corequisite:
ELEG 3211L. Prerequisite: MATH 2584. (Typically offered: Fall and Spring)

ELEG 3213H. Honors Electronics I. 3 Hours.
Introduction to electronic systems and signal processing, operational amplifiers, diodes, non-linear circuit applications, MOSFETS, and BJTs. Pre- or Corequisite: MATH 2574 and ELEG 2113. Corequisite: ELEG 3211M. Prerequisite: Honors standing and PHYS 2074. (Typically offered: Fall and Spring)
This course is equivalent to ELEG 3213.
ELEG 3221L. Electronics II Laboratory. 1 Hour.
Selected experiments to illustrate and complement topics covered in companion course ELEG 3223 - Electronics II Laboratory. Corequisite: ELEG 3223. (Typically offered: Spring)

\section*{ELEG 3221M. Honors Electronics II Laboratory. 1 Hour.}

Selected experiments to illustrate and complement topics covered in companion course ELEG 3223 - Electronics II Laboratory. Corequisite: ELEG 3223H. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to ELEG 3221L.

\section*{ELEG 3223. Electronics II. 3 Hours.}

Differential pair amplifier, current mirrors, active loads, multistage amplifiers, amplifier frequency response, bode plots, Millers theorem, short circuit and open circuit time constant methods, feedback amplifiers, and stability of feedback amplifiers. Corequisite: ELEG 3221L. Prerequisite: ELEG 3213 and ELEG 2113. (Typically offered: Spring)

\section*{ELEG 3223H. Honors Electronics II. 3 Hours.}

Differential pair amplifier, current mirrors, active loads, multistage amplifiers, amplifier frequency response, bode plots, Millers theorem, short circuit and open circuit time constant methods, feedback amplifiers, and stability of feedback amplifiers. Corequisite: ELEG 3221M. Prerequisite: Honors standing, ELEG 3213 and MATH 2584. (Typically offered: Spring)

This course is equivalent to ELEG 3223.
ELEG 3304. Energy Systems. 4 Hours.
Steady state analysis of DC machines, transformers, induction machines and synchronous machines. Introduction to speed control of electric machines using power electronics. Corequisite: Lab component. Prerequisite: ELEG 2113. (Typically offered: Spring)

ELEG 3304H. Honors Energy Systems. 4 Hours.
Steady state analysis of DC machines, transformers, induction machines and synchronous machines. Introduction to speed control of electric machines using power electronics. Corequisite: Lab component. Prerequisite: ELEG 2113. (Typically offered: Spring)
This course is equivalent to ELEG 3304
ELEG 3704. Applied Electromagnetics. 4 Hours.
Analysis of transmission lines with sinusoidal and transient excitation. Development and use of the Smith Chart and methods of impedance matching. Vector analysis, static form of Maxwell's equations, electrostatics, and magnetostatics. Corequisite: Lab component. Pre- or Corequisite: PHYS 2074. Prerequisite: ELEG 2113 and MATH 2574. (Typically offered: Fall)

\section*{ELEG 3704H. Honors Applied Electromagnetics. 4 Hours.}

Analysis of transmission lines with sinusoidal and transient excitation. Development and use of the Smith Chart and methods of impedance matching. Vector analysis, static form of Maxwell's equations, electrostatics, and magnetostatics. Corequisite: Lab component. Pre- or Corequisite: PHYS 2074 and MATH 2574. Prerequisite:
ELEG 2113. (Typically offered: Fall)
This course is equivalent to ELEG 3704
ELEG 387V. Special Topics in Electrical Engineering. 1-4 Hour.
Consideration of current electrical engineering topics not covered in other courses. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ELEG 3903. Electric Circuits and Machines. 3 Hours.
Basic electrical principles and circuits; Introduction to sinusoidal steady-state analysis of electric circuits, active, reactive, and complex power; balanced threephase circuits; Steady-state analysis of electric machines and transformers Introduction to power electronics for machine speed control and alternative energy sources. For engineering students other than those in electrical engineering. Prerequisite: MATH 2564 and PHYS 2074. (Typically offered: Fall and Spring)

ELEG 3924. Microprocessor Systems Design. 4 Hours.
Introduction to 8-bit microprocessors and their application. Microprocessor architecture and assembly language; interface devices; system design using microprocessors. Corequisite: Lab component. Pre- or Corequisite: ELEG 2904. (Typically offered: Fall)

\section*{ELEG 3924H. Honors Microprocessor Systems Design. 4 Hours.}

Introduction to 8-bit microprocessors and their application. Microprocessor architecture and assembly language; interface devices; system design using microprocessors. Corequisite: Lab component. Prerequisite: ELEG 2904. (Typically offered: Fall)
This course is equivalent to ELEG 3924.

\section*{ELEG 3933. Circuits \& Electronics. 3 Hours.}

Basic principles of electric and electronic circuits and devices. For engineering students who are not pursuing a degree in electrical engineering. Prerequisite: MATH 2584 and PHYS 2074. (Typically offered: Spring)

ELEG 400VH. Honors Senior Thesis. 1-3 Hour.
Honors senior thesis. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer)

\section*{ELEG 4063. Electrical Engineering Design I. 3 Hours.}

Capstone design and application in electrical engineering. Prerequisite: ELEG 3223 and ELEG 3924. (Typically offered: Fall and Spring)

ELEG 4063H. Honors Electrical Engineering Design I. 3 Hours.
Design and application in electrical engineering. Prerequisite: ELEG 3223 and
ELEG 3924. (Typically offered: Fall and Spring)
This course is equivalent to ELEG 4063.
ELEG 4071. Electrical Engineering Design II. 1 Hour.
Design and application in electrical engineering. Prerequisite: ELEG 4063. (Typically offered: Fall and Spring)

\section*{ELEG 4071H. Honors Electrical Engineering Design II. 1 Hour.}

Design and application in electrical engineering. Prerequisite: ELEG 4063. (Typically offered: Fall and Spring)
This course is equivalent to ELEG 4071.
ELEG 4203. Semiconductor Devices. 3 Hours.
Crystal properties and growth of semiconductors, energy bands and charge carriers in semiconductors, excess carriers in semiconductors, analysis and design of p/ n junctions, analysis and design of bipolar junction transistors, and analysis and design of field-effect transistors. Students may not receive credit for both ELEG 4203 and ELEG 5203. Prerequisite: MATH 2584 and ELEG 3213, or graduate standing. (Typically offered: Irregular)

ELEG 4203H. Honors Semiconductor Devices. 3 Hours.
Crystal properties and growth of semiconductors, energy bands and charge carriers in semiconductors, excess carriers in semiconductors, analysis and design of p/ n junctions, analysis and design of bipolar junction transistors, and analysis and design of field-effect transistors. Students may not receive credit for both ELEG 4203 and ELEG 5203. Prerequisite: MATH 2584 and ELEG 3213, or graduate standing. (Typically offered: Irregular)
This course is equivalent to ELEG 4203.

ELEG 4233. Introduction to Integrated Circuit Design. 3 Hours.
Design and layout of large scale digital integrated circuits using CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design, and layout strategies for large scale CMOS circuits. Students may not receive credit for both ELEG 4233 and ELEG 5923. Prerequisite: ELEG 3213 or ELEG 3933 and ELEG 2904 or equivalent. (Typically offered: Fall)

\section*{ELEG 4243. Analog Integrated Circuits. 3 Hours.}

Theory and design techniques for linear and analog integrated circuits. Current mirrors, voltage to base emitter matching, active loads, compensation, level shifting, amplifier design techniques, circuit simulation using computer-assisted design programs. Prerequisite: ELEG 3223. (Typically offered: Irregular)

ELEG 4253L. Integrated Circuit Design Lab I. 3 Hours.
This course will cover digital VLSI design and integrated circuit design tools. The course is structured with lectures. This course is offered to both senior undergraduate and graduate students. Students cannot get credit for both the undergraduate and graduate version of the course. Students cannot receive credit for both ELEG 4253L and ELEG 5253L. Prerequisite: ELEG 4233 or ELEG 5923. (Typically offered: Spring)

\section*{ELEG 4283. Mixed Signal Test Engineering I. 3 Hours.}

Overview of mixed signal testing, the test specification process, DC and parametric measurements, measurement accuracy, tester hardware, sampling theory, DSPbased testing, analog channel testing, digital channel testing. Prerequisite: Senior or graduate standing. (Typically offered: Irregular)

\section*{ELEG 4303. Introduction to Nanomaterials and Devices. 3 Hours.}

This course provides the students with an introduction to nanomaterials and devices. The students will be introduced to the quantization of energy levels in nanomaterials, growth of nanomaterials, electrical and optical properties, and devices based on these nanomaterials, such as tunneling resonant diodes, transistors, detector, and emitters. Graduate students will be given additional or different assignments. Graduate students will be expected to explore and demonstrate an understanding of the material with a greater level of depth and breadth than the undergraduates. Each group of students will have different expectations and grading systems. The instructor will prepare and distribute two distinct syllabi. Corequisite: ELEG 4203. Prerequisite: ELEG 3213 and PHYS 2074. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ELEG 4403. Control Systems. 3 Hours.}

Mathematical modeling of dynamic systems, stability analysis, control system architectures and sensor technologies. Time-domain and frequency-domain design of feedback control systems: lead, lag, PID compensators. Special topics in microprocessor implementation. Students may not receive credit for both ELEG 4403 and ELEG 5403. Prerequisite: ELEG 3124. (Typically offered: Irregular)

\section*{ELEG 4403H. Honors Control Systems. 3 Hours.}

Mathematical modeling of dynamic systems, stability analysis, control system architectures and sensor technologies. Time-domain and frequency-domain design of feedback control systems: lead, lag, PID compensators. Special topics in microprocessor implementation. Students may not receive credit for both ELEG 4403 and ELEG 5403. Prerequisite: ELEG 3124. (Typically offered: Irregular)

ELEG 4413. Advanced Control Systems. 3 Hours.
A second course in linear control systems. Emphasis on multiple-input and multipleoutput systems: State-space analysis, similarity transformations, eigenvalue and eigenvector decomposition, stability in the sense of Lyapunov, controllability and observability, pole placement, quadratic optimization. Students may not receive credit for both ELEG 4413 and ELEG 5413. Prerequisite: ELEG 4403 or equivalent course. (Typically offered: Irregular)

ELEG 4423. Optimal Control. 3 Hours.
Introductory theory of optimizing dynamic systems: Formulation of performance objectives; calculus of variations; linear quadratic optimal control; discrete-time optimization; robustness and frequency domain techniques; reinforcement learning and optimal adaptive control. Prerequisite: ELEG 4403. (Typically offered: Irregular)

ELEG 4463L. Control Systems Laboratory. 3 Hours.
Experimental study of various control systems and components. The use of programmable logic controllers in the measurement of systems parameters, ladderlogic applications, process-control applications, and electromechanical systems. Prerequisite: ELEG 3924 and ELEG 3124. (Typically offered: Irregular)

ELEG 4503. Design of Advanced Electric Power Distribution Systems. 3 Hours. Design considerations of electric power distribution systems, including distribution transformer usage, distribution system protection implementation, primary and secondary networks design, applications of advanced equipment based on power electronics, and use of capacitors and voltage regulation. Students may not receive credit for both ELEG 4503 and ELEG 5503. Prerequisite: ELEG 3304. (Typically offered: Irregular)

\section*{ELEG 4513. Power and Energy Systems Analysis. 3 Hours.}

Modeling and analysis of electric power systems: Energy sources and conversion; load flow analysis; reference frame transformations; symmetrical and unsymmetrical fault conditions; load forecasting and economic dispatch. Students may not receive credit for both ELEG 4513 and ELEG 5513. Prerequisite: ELEG 2113. (Typically offered: Irregular)

ELEG 4533. Power Electronics and Motor Drives. 3 Hours.
Characteristics of Insulated Gate Bipolar Transistors (IGBTs), Silicon Carbide ( SiC ) MOSFETs, Gallium Nitride ( GaN ) devices, Design of driver and snubber circuits for IGBTs and SiC MOSFETs, and an introduction to electric motor drives. Students may not receive credit for both ELEG 4533 and ELEG 5533. Prerequisite: ELEG 3304 and ELEG 3223. (Typically offered: Irregular)

\section*{ELEG 4543. Introduction to Power Electronics. 3 Hours.}

Presents basics of emerging areas in power electronics and a broad range of topics such as power switching devices, electric power conversion techniques and analysis, as well as their applications. Students may not receive credit for both ELEG 5543 and ELEG 4543. Prerequisite: ELEG 2113 and ELEG 3213. (Typically offered: Irregular)

\section*{ELEG 4553. Switch Mode Power Conversion. 3 Hours.}

Basic switching converter topologies: buck, boost, buck-boost, Cuk, flyback, resonant; pulse-width modulation; integrated circuit controllers; switching converter design case studies; SPICE analyses of switching converters; state-space averaging and linearization; and switching converter transfer functions. Prerequisite: ELEG 3223 and ELEG 3124. (Typically offered: Irregular)

ELEG 4563. EMI in Power Electronics Converters: Generation, Propagation and Mitigation. 3 Hours.
Concepts of electro-magnetic-interference issues in power electronics converters. Basic concepts of EMI measurement, modeling and mitigation, with a focus on conducted EMI in power electronics converters. The course is structured with lectures and a lab session. Students can not receive credit for both ELEG 4563 and ELEG 5563. Prerequisite: ELEG 2103 or equivalent and MATH 2574. (Typically offered: Irregular)

\section*{ELEG 4583. Programming for Power Electronics: DSPs. 3 Hours.}

This course will focus on the development of both theoretical and practical skills needed to design and implement controls for power electronic systems using a Digital Signal Processors (DSPs). The course is structured with lectures and utilizes a project-based approach. Students cannot receive credit for both ELEG 5583 and ELEG 4583. Prerequisite: Senior standing, ELEG 2904, ELEG 3924, and CSCE 2004. (Typically offered: Spring)

ELEG 4593. Programming for Power Electronics: FPGA. 3 Hours.
This course will focus on the development of both theoretical and practical skills needed to design and implement controls for power electronic system using Field Programmable Gate Arrays (FPGAs). The course is structured with lectures and utilizes a project-based approach. Students cannot receive credit for both ELEG 5593 and ELEG 4593. Prerequisite: Senior standing, ELEG 2904, ELEG 3924 and CSCE 2004. (Typically offered: Spring)

ELEG 4603. Deterministic Digital Signal Processing System Design. 3 Hours. Design of Digital Signal Processing systems with deterministic inputs. Sampling, quantisizing, oversampling, ADC trade-offs, distortion, equalizers, anti-aliasing, coherency, frequency domain design, audio and video compression. Prerequisite: ELEG 3124. (Typically offered: Irregular)

\section*{ELEG 4623. Communication Systems. 3 Hours.}

Various modulation systems used in communications. AM and FM fundamentals, pulse modulation, signal to noise ratio, threshold in FM, the phase locked loop, matched filter detection, probability of error in PSK, FKS, and DPSK. The effects of quantization and thermal noise in digital systems. Information theory and coding. Students may not receive credit for both ELEG 4623 and ELEG 5663. Pre- or Corequisite: ELEG 3143. (Typically offered: Irregular)

ELEG 4703. Introduction to RF and Microwave Design. 3 Hours.
An introduction to microwave design principles. Transmission lines, passive devices, networks, impedance matching, filters, dividers, and hybrids will be discussed in detail. Active microwave devices will also be introduced. In addition, the applications of this technology as it relates to radar and communications systems will be reviewed. Prerequisite: ELEG 3704. (Typically offered: Irregular)

\section*{ELEG 4783. Introduction to Antennas. 3 Hours.}

Basic antenna types: small dipoles, half wave dipoles, image theory, monopoles, small loop antennas. Antenna arrays: array factor, uniformly excited equally spaced arrays, pattern multiplication principles, nonuniformly excited arrays, phased arrays. Use of MATLAB programming and mathematical techniques for antenna analysis and design. Emphasis will be on using simulation to visualize variety of antenna radiation patterns. Corequisite: Drill component. Prerequisite: ELEG 3704. (Typically offered: Irregular)

\section*{ELEG 4783H. Honors Introduction to Antennas. 3 Hours.}

Basic antenna types: small dipoles, half wave dipoles, image theory, monopoles, small loop antennas. Antenna arrays: array factor, uniformly excited equally spaced arrays, pattern multiplication principles, nonuniformly excited arrays, phased arrays. Use of MATLAB programming and mathematical techniques for antenna analysis and design. Emphasis will be on using simulation to visualize variety of antenna radiation patterns. Corequisite: Drill component. Prerequisite: ELEG 3704. (Typically offered: Irregular)
This course is equivalent to ELEG 4783.

\section*{ELEG 487V. Special Topics in Electrical Engineering. 1-3 Hour.}

Consideration of current electrical engineering topics not covered in other courses. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ELEG 488V. Special Problems. 1-3 Hour.
Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

ELEG 4963. CPLD/FPGA Based System Design. 3 Hours.
Field Programmable logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices

Corequisite: Lab component. Prerequisite: ELEG 4914. (Typically offered: Irregular) This course is cross-listed with CSCE 4353.

ELEG 4983. Computer Architecture. 3 Hours.
Design of a single board computer including basic computer organization, memory subsystem design, peripheral interfacing, DMA control, interrupt control, and bus organization. Prerequisite: ELEG 3924. (Typically offered: Irregular)
This course is cross-listed with CSCE 4213.
ELEG 5173L. Digital Signal Processing Laboratory. 3 Hours.
Use of DSP integrated circuits. Lectures, demonstrations, and projects. DSP IC architectures and instruction sets. Assembly language programming. Development tools. Implementation of elementary DSP operations, difference equations, transforms and filters. Prerequisite: ELEG 3124. (Typically offered: Irregular)

\section*{ELEG 5203. Semiconductor Devices. 3 Hours.}

Crystal properties and growth of semiconductors, energy bands and charge carriers in semiconductors, excess carriers in semiconductors, analysis and design of p/ n junctions, analysis and design of bipolar junction transistors, and analysis and design of field-effect transistors. Students may not receive credit for both ELEG 4203 and ELEG 5203. Prerequisite: Graduate standing. (Typically offered: Irregular)

ELEG 5213. Integrated Circuit Fabrication Technology. 3 Hours.
Theory and techniques of integrated circuit fabrication technology; crystal growth, chemical vapor deposition, impurity diffusion, oxidation, ion implantation, photolithography and medullization. Design and analysis of device fabrication using SUPREM and SEDAN. In-process analysis techniques. Student review papers and presentations on state of the art fabrication and device technology. Prerequisite: ELEG 4203 or ELEG 5203. (Typically offered: Irregular)

ELEG 5223. Design and Fabrication of Solar Cells. 3 Hours.
Solar insolation and its spectral distribution/ p-n junction solar cells in dark and under illumination; solar cell parameters efficiency limits and losses; standard cell technology; energy accounting; design of silicon solar cells using simulation; fabrication of designed devices in the lab and their measurements. Prerequisite: ELEG 4203 or ELEG 5203. (Typically offered: Irregular)

\section*{ELEG 5253L. Integrated Circuit Design Laboratory I. 3 Hours.}

Design and layout of large scale digital integrated circuits. Students design, check, and simulate digital integrated circuits which will be fabricated and tested in I.C. Design Laboratory II. Topics include computer-aided design, more in-depth coverage of topics from ELEG 4233, and design of very large scale chips. Prerequisite: ELEG 4233 or ELEG 5923. (Typically offered: Irregular)
This course is cross-listed with CSCE 5253L.

\section*{ELEG 5273. Electronic Packaging. 3 Hours.}

An introductory treatment of electronic packaging, from single chip to multichip, including materials, substrates, electrical design, thermal design, mechanical design, package modeling and simulation, and processing considerations. Prerequisite: Graduate standing. (Typically offered: Irregular)
ELEG 5293L. Integrated Circuits Fabrication Laboratory. 3 Hours.
Experimental studies of silicon oxidation, solid-state diffusion, photolithographical materials and techniques, bonding and encapsulation. Fabrication and testing of PN diodes, NPN transistors and MOS transistors. Prerequisite: ELEG 5213. (Typically offered: Irregular)

ELEG 5303. Introduction to Nanomaterials and Devices. 3 Hours.
This course provides the students with an introduction to nanomaterials and devices. The students will be introduced to the quantization of energy levels in nanomaterials, growth of nanomaterials, electrical and optical properties, and devices based on these nanomaterials, such as tunneling resonant diodes, transistors, detector, and emitters. Graduate students will be given additional or different assignments. Graduate students will be expected to explore and demonstrate an understanding of the material with a greater level of depth and breadth than the undergraduates. Each group of students will have different expectations and grading systems. The instructor will prepare and distribute two distinct syllabi. Corequisite: ELEG 4203. Prerequisite: ELEG 3213 and PHYS 2074. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ELEG 5313. Power Semiconductor Devices. 3 Hours.}

Carrier transport physics; breakdown phenomenon in semiconductor devices; power bipolar transistors, thyristors, power junction field-effect transistors, power field-controlled diodes, power metal-oxide-semiconductor field-effect transistors, and power MOS-bipolar devices. Prerequisite: ELEG 4203 or graduate standing. (Typically offered: Irregular)

\section*{ELEG 5323. Semiconductor Nanostructures I. 3 Hours.}

This course is focused on the basic theoretical and experimental analyses of low dimensional systems encountered in semiconductor heterojunctions and nanostructures with the emphasis on device applications and innovations.
Prerequisite: ELEG 4203 or instructor permission. (Typically offered: Irregular)

\section*{ELEG 5353. Semiconductor Optoelectronic Devices. 3 Hours.}

This course will provide graduate students a detailed background in semiconductor optoelectronic devices such as light emitting diodes and lasers, photodetectors, solar cells, modulators. The applications of these devices will also be discussed. Prerequisite: ELEG 4203 or ELEG 5203. (Typically offered: Spring Odd Years)
ELEG 5363. Semiconductor Material and Device Characterization. 3 Hours. This course provides an overview of semiconductor characterization techniques in industry: Electrical measurements, Optical measurements, Electron and ion beam measurements, X-ray and probe measurements. Prerequisite: ELEG 4203 or ELEG 5203 and instructor consent. (Typically offered: Irregular)

\section*{ELEG 5383. Introduction of Integrated Photonics. 3 Hours.}

This course is designed to provide junior and senior graduate students detailed knowledge of integrated photonics by using silicon photonics as an example. The course covers a cycle of design, fabrication, and testing of photonic devices by using analytic and numerical methods. The course will focus on designing an interferometer, which is widely used in communication and sensing applications. Students will be exposed to use the state-of-art design simulation tool, Lumerical, to design the photonic circuits and to evaluate the performances. In the course project, students will extend the design rules to design a set of components to be used for integrated microwave photonics based on Ge on \(\mathrm{Si}, \mathrm{SiGeSn}\), or Si 3 N 4 on sapphire platform. Prerequisite: ELEG 4203 and ELEG 5353. (Typically offered: Irregular)

\section*{ELEG 5393. Electronic Materials. 3 Hours.}

This is a lecture course designed to provide a fundamental introduction to materials science. Upon this fundamental basis, we will survey many of the properties and materials relevant to modern electronics. This course will cover semiconductors, but only briefly. The focus will be on properties and materials not generally well covered in other electrical engineering courses from a materials perspective. This will include, but not be limited to metals, dielectrics, and magnetic and optical materials. Prerequisite: Graduate standing; A knowledge of quantum mechanics is helpful but not required. (Typically offered: Spring)

\section*{ELEG 5403. Control Systems. 3 Hours.}

Mathematical modeling of dynamic systems, stability analysis, control systems architectures and sensor technologies. Time-domain and frequency-domain design of feedback control systems: lead, lag, PID compensators. Special topics on microprocessor implementation. Credit not given for both ELEG 4403 and ELEG 5403. Prerequisite: Graduate standing or ELEG 3124. (Typically offered: Irregular)

\section*{ELEG 5413. Modern Control Systems. 3 Hours.}

A second course in linear control systems. Emphasis on multiple-input and multipleoutput systems: State-space analysis, similarity transformations, eigenvalue and eigenvector decomposition, stability in the sense of Lyapunov, controllability and observability, pole placement, quadratic optimization. Credit not given for both ELEG 4413 and ELEG 5413. Prerequisite: ELEG 5403 or equivalent. (Typically offered: Irregular)

\section*{ELEG 5423. Optimal Control Systems. 3 Hours.}

Conditions for optimality; calculus of variations; linear quadratic regulators; Kalman filter theory; H-infinity design. Prerequisite: ELEG 5413 or graduate standing. (Typically offered: Irregular)

\section*{ELEG 5443. Nonlinear Systems Analysis and Control. 3 Hours.}

Second-order nonlinear systems analysis; Describing function analysis; Lyapunov stability; Feedback linearization; Backstepping control; Sliding mode control; Model reference adaptive control. Prerequisite: ELEG 5413. (Typically offered: Irregular)

\section*{ELEG 5473. Power System Operation and Control. 3 Hours.}

Study of the control and operation of electric power systems: Modeling, dynamics, and stability of three-phase power systems. Design and implementation of control systems related to generation and transmission. Overview of the related industry and government regulations for power system protection and reliability. Prerequisite: ELEG 4403 or graduate standing. (Typically offered: Irregular)

ELEG 5503. Design of Advanced Power Distribution Systems. 3 Hours. Design considerations of electric power distribution systems, including distribution transformer usage, distribution system protection implementation, primary and secondary networks design, applications of advanced equipment based on power electronics, and use of capacitors and voltage regulation. Students may not receive credit for both ELEG 4503 and ELEG 5503. Prerequisite: ELEG 3304 or graduate standing. (Typically offered: Irregular)

\section*{ELEG 5513. Power Systems Analysis. 3 Hours.}

Modeling and analysis of electric power systems: Energy sources and conversion; load flow analysis; reference frame transformations; symmetrical and unsymmetrical fault conditions; load forecasting and economic dispatch. Credit not given for both ELEG 4513 and ELEG 5513. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{ELEG 5523. Electric Power Quality. 3 Hours.}

The theory and analysis of electric power quality for commercial, industrial and residential power systems. Specific topics include harmonics, voltage sags, wiring and grounding, instrumentation, distributed generation and power electronic systems, and site surveys. Case studies complement the theoretical concepts. Prerequisite: ELEG 3304 or graduate standing. (Typically offered: Irregular)

ELEG 5533. Power Electronics and Motor Drives. 3 Hours.
Fundamentals of power electronics, diode bridge rectifiers, inverters, general concepts on motor drives, induction motor drives, synchronous motor drives, and dc motor drives. Students may not receive credit for both ELEG 4533 and ELEG 5533. Prerequisite: Graduate standing or ELEG 3223 and ELEG 3304. (Typically offered: Irregular)

ELEG 5543. Introduction to Power Electronics. 3 Hours.
Presents basics of emerging areas in power electronics and a broad range of topics such as power switching devices, electric power conversion techniques and analysis, as well as their applications. Students may not receive credit for both ELEG 5543 and ELEG 4543. Prerequisite: ELEG 2113 and ELEG 3213, or graduate standing. (Typically offered: Irregular)

\section*{ELEG 5553. Switch Mode Power Conversion. 3 Hours.}

Basic switching converter topologies, control scheme of switching converters, simulation of switching converters, resonant converters, isolated converters, dynamic analysis of switching converters. Students will not receive graduate credit for both ELEG 4553 and ELEG 5553. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{ELEG 5563. EMI in Power Electronics Converters: Generation, Propagation and Mitigation. 3 Hours.}

Concepts of electro-magnetic-interference issues in power electronics converters. Basic concepts of EMI measurement, modeling and mitigation, with a focus on conducted EMI in power electronics converters. The course is structured with lectures and a lab session. Students can not receive credit for both ELEG 4563 and ELEG 5563. Prerequisite: Graduate standing. (Typically offered: Irregular)

ELEG 5583. Programming for Power Electronics: DSPs. 3 Hours.
This course will focus on the development of both theoretical and practical skills needed to design and implement controls for power electronic systems using a Digital Signal Processors (DSPs).The course is structured with lectures and utilizes a project-based approach. Students cannot receive credit for both the undergraduate (ELEG 4583) and graduate version (ELEG 5583) of the course. Prerequisite: Graduate Standing. (Typically offered: Spring)

ELEG 5593. Programming for Power Electronics: FPGA. 3 Hours.
This course will focus on the development of both theoretical and practical skills needed to design and implement controls for power electronic systems using a Field Programmable Gate Arrays (FPGAs) to implement these control algorithms. The course is structured with lectures and utilizes a project-based approach. Students cannot receive credit for both the undergraduate (ELEG 4593) and graduate (ELEG 5593) version of the course. Prerequisite: Graduate Standing. (Typically offered: Spring)

\section*{ELEG 5663. Communication Theory. 3 Hours.}

Principles of communications. Channels and digital modulation. Optimum receivers and algorithms in the AWGN and fading channels. Coherent, non-coherent detectors and matched filters. Bounds on the performance of communications, and comparison of communications systems. Background in stochastic processes and probabilities, communication systems is desirable. Students may not receive credit for both ELEG 4623 and ELEG 5663. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ELEG 5693. Wireless Communications. 3 Hours.}

Comprehensive course in fast developing field of wireless mobile/cellular personal telecommunications. Topics include cellular system structures, mobile radio propagation channels, etc. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{ELEG 5703. RF \& Microwave Design. 3 Hours.}

An introduction to microwave design principles. Transmission lines, passive devices, networks, impedance matching, filters, dividers, and hybrids will be discussed in detail. Active microwave devices will also be introduced. In addition, the applications of this technology as it relates to radar and communications systems will be reviewed. Selected topics for device fabrication and measurements will be covered. Cannot get credit if student has taken ELEG 4703. Prerequisite: ELEG 3704. (Typically offered: Irregular)

\section*{ELEG 5723. Advanced Microwave Design. 3 Hours.}

This course is an advanced course in microwave design building on the introduction to microwave design course. A detailed discussion of active devices, biasing networks, mixers, detectors, Microwave Monolithic Integrated Circuits (MMIC), and wideband matching networks will be provided. In addition, a number of advanced circuits will be analyzed. Prerequisite: ELEG 3704 and ELEG 4703 or ELEG 5703. (Typically offered: Irregular)

ELEG 5763. Advanced Electromagnetic Scattering \& Transmission. 3 Hours. Reflection and transmission of electromagnetic waves from a flat interface, the Poynting theorem, the complex and average power, the rectangular wave guides, TE and TM modes, radiation from antennas in free space and introduction to computational electromagnetics. Prerequisite: ELEG 3704. (Typically offered: Irregular)

\section*{ELEG 5783. Introduction to Antennas. 3 Hours.}

Basic antenna types: small dipoles, half wave dipoles, image theory, monopoles, small loop antennas. Antenna arrays: array factor, uniformly excited equally spaced arrays, pattern multiplication principles, nonuniformly excited arrays, phased arrays. Use of MATLAB programming and mathematical techniques for antenna analysis and design. Emphasis will be on using simulation to visualize variety of antenna radiation patterns. Students cannot get credit for ELEG 5783 if they have taken ELEG 4783. Prerequisite: ELEG 3704. (Typically offered: Irregular)

ELEG 587V. Special Topics in Electrical Engineering. 1-3 Hour.
Consideration of current electrical engineering topics not covered in other courses. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

ELEG 588V. Special Problems. 1-6 Hour.
Opportunity for individual study of advanced subjects related to a graduate electrical engineering program to suit individual requirements. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit

\section*{ELEG 5903. Engineering Technical Writing. 3 Hours.}

In this course, advanced graduate students (PhD candidates and selected MS students) will be trained in rephrasing and preparing technical papers, including scientific reports. Illustrations step by step will be explained. Each student is required to prepare technical papers based on their own research results and will be guided from selecting a title to a finished product. The emphasis will be placed on the structures of the articles including figures and table preparation, abstract writing, citations and references, and acknowledgments. The students will also be trained to prepare letters to the journals' editors and how to respond to reviewers' comments. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{ELEG 5923. Introduction to Integrated Circuit Design. 3 Hours.}

Design and layout of large scale digital integrated circuits using CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design, and layout strategies for large scale CMOS circuits. Students may not receive credit for both ELEG 4233 and ELEG 5923. Prerequisite: ELEG 3213 or ELEG 3933 and MATH 2584. (Typically offered: Fall)

ELEG 5953. Semiconductor Device and IC ESD Reliability. 3 Hours.
This course will cover semiconductor device and IC ESD design. The course is structured with lecture sessions and is offered to graduate students. The objective of this course is for students to understand semiconductor device and IC ESD design. Students will be able to demonstrate understanding of the basic concepts of ESD on-chip and off-chip protection for ICs and the future trends in ESD protections for advanced and emerging ICs. Prerequisite: ELEG 5923. (Typically offered: Irregular)

\section*{ELEG 5983. Computer Architecture. 3 Hours.}

Design of a single board computer including basic computer organization, memory subsystem design, peripheral interfacing, DMA control, interrupt control, and bus organization. Prerequisite: ELEG 3924. (Typically offered: Irregular)

\section*{ELEG 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

ELEG 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Engineering (ENGR)}

\section*{English (ENGL)}

\section*{Courses}

ENGL 0001. Writing Lab. 1 Hour.
Required corequisite course with ENGL 1013 for students with scores below 19 in ACT English or below 470 in SAT Verbal. Writing labs, practice in study skills and time management, and mentorship from instructor. Credit not applied to hours required for degree. Corequisite: ENGL 1013. (Typically offered: Fall and Spring)

ENGL 1013. Composition I (ACTS Equivalency = ENGL 1013). 3 Hours. Teaches writing strategies for varied contexts, methods of research and integrating sources, and processes for drafting and revision. Pre- or Corequisite: ENGL 0001 or 19 or above on ACT English; or 490 or above on SAT Evidence-Based Reading and Writing; or 80 or above on Compass Writing Skills; or 83 or above on Accuplacer Sentence Skills; or above 255 on Accuplacer Next Generation Writing; or High School GPA of 3.2 or above. (Typically offered: Fall, Spring and Summer)

ENGL 1013H. Honors Composition I. 3 Hours.
Composition I offered at an Honors level, with the same textbooks and major assignments. Prerequisite: ACT English scores of 28 or above or SAT EvidenceBased Reading and Writing scores of 630 or above and honors student. (Typically offered: Fall)
This course is equivalent to ENGL 1013
ENGL 1023. Composition II (ACTS Equivalency = ENGL 1023). 3 Hours.
Builds on the skills, tools, and concepts presented in ENGL 1013 Composition I. Students will gain a rhetorical understanding of writing and composing genres in order to respond to different audience needs, contexts, and purposes. Prerequisite: ENGL 1013 or the equivalent. (Typically offered: Fall, Spring and Summer) This course is cross-listed with ENGL 1023H, ENGL 1033.

ENGL 1023H. Honors Composition II. 3 Hours.
Composition II offered at an Honors level, with the same textbooks and major assignments. Prerequisite: ENGL 1013 or the equivalent, ACT English scores of 28 or above or SAT Evidence-Based Reading and Writing scores of 630 or above and honors student. (Typically offered: Fall and Spring)
This course is cross-listed with ENGL 1023, ENGL 1033.
ENGL 1033. Technical Composition II (ACTS Equivalency = ENGL 1023). 3 Hours.

Composition II for Engineering and Business students, or any other students who are interested. Focuses on learning technical writing conventions and genres, such as definitions, instructions, correspondence, and proposals. Fulfills Core Curriculum requirement for ENGL 1023 Composition II. Prerequisite: ENGL 1013 or the equivalent. (Typically offered: Fall and Spring)

This course is cross-listed with ENGL 1023, ENGL 1023H.
ENGL 1033H. Honors Technical Composition II. 3 Hours.
Technical Composition II offered to Engineering and Business students, or any other students who are interested, at an Honors level, with the same textbooks and major assignments. Prerequisite: ENGL 1013 or the equivalent, ACT English scores of 28 or above or SAT Evidence-Based Reading and Writing scores of 630 or above and honors student. (Typically offered: Irregular)
This course is cross-listed with ENGL 1023, ENGL 1023H, ENGL 1033.
ENGL 1103. Reading Literature. 3 Hours.
Introduces students to close-reading strategies for analyzing texts with scholarly care and attention. Readings will vary based on instructor expertise and interest. (Typically offered: Fall and Spring)

ENGL 1213. Introduction to Literature. 3 Hours.
Approaches to reading and writing about fiction, drama, and poetry at the college level. (Typically offered: Fall and Spring)

ENGL 1213H. Honors Introduction to Literature. 3 Hours.
Approaches to reading and writing about fiction, drama, and poetry at the college level. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to ENGL 1213

\section*{ENGL 2003. Advanced Composition. 3 Hours.}

Review course in English composition. Exemption for this course may be granted for certain majors that require it by a grade of at least a "B" in ENGL 1013 and ENGL 1023 (or equivalent courses from an accredited institution), by achieving a score of 4 or 5 on the AP Language and Composition Examination and the AP Literature and Composition Examination, or by achieving a 6 HL or 7 HL on the IB Examination in English. Cannot be counted toward a major in English. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall, Spring and Summer)

\section*{ENGL 2013. Essay Writing. 3 Hours.}

Through assignments in Creative Nonfiction, from memoir to personal journalism, students will learn how form affects content, and develop their personal voice and their ability to use rhetorical techniques and strategies in all forms of writing. Prerequisite: ENGL 1013 and (ENGL 1023 or ENGL 1033 or equivalent). (Typically offered: Fall and Spring)

ENGL 2023. Creative Writing I (ACTS Equivalency = ENGL 2013). 3 Hours. Beginning level workshop course in which students write original poems and stories. Reading and detailed discussion of poems and stories in anthologies is required. Designed to teach the student the fundamental techniques of fiction and poetry. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

\section*{ENGL 2043. Rethinking Literature. 3 Hours.}

Introduces students to groupings of texts that are not usually discussed in traditional English classes, asking why some texts are considered Literature while others are not. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2053. Transatlantic Literature from Beginnings to 1640. 3 Hours. A critical and historical survey of transatlantic literature from its beginnings to 1640, with attention to identifying cultural and/or historical trends of the period. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2063. Transatlantic Literature from 1640 to 1865. 3 Hours.
A critical and historical survey of the development of transatlantic literature from 1640 to 1865 , with attention to identifying cultural and/or historical trends of the period. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2073. Transatlantic Literature from 1865 to 1945. 3 Hours.
A critical and historical survey of the development of transatlantic literature from 1865 to 1945, with attention to identifying cultural and/or historical trends of the period. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2083. Transatlantic Literature from 1945 to Present. 3 Hours. A critical and historical survey of the development of transatlantic literature from 1945 to the present, with attention to identifying cultural and/or historical trends of the period. Readings will vary based on instructor expertise and interest. Prerequisite: ENGL 1023. (Typically offered: Fall and Spring)

\section*{ENGL 2173. Literacy in America. 3 Hours.}

A course that examines the myriad definitions of literacy (and illiteracy) and their connections to issues of social class, occupational status, economic and political structures, educational institutions, cultural organizations, and the media. (Typically offered: Spring)

ENGL 2303. English Literature from the Beginning through the 17th Century (ACTS = ENGL 2673). 3 Hours.
A critical and historical survey of the development of literature in the British Isles from its beginnings to the end of the seventeenth century. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2303C. English Literature from the Beginning through the 17th Century (ACTS = ENGL 2673). 3 Hours.
A critical and historical survey of the development of literature in the British Isles from its beginnings to the end of the seventeenth century. Lecture and drill.
Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall)
This course is equivalent to ENGL 2303.
ENGL 2313. Survey of English Literature from 1700 to 1900 (ACTS Equivalency = ENGL 2683). 3 Hours.
A critical and historical survey of the development of literature in the British Isles from 1700 to 1900. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2323. Survey of Modern and Contemporary British, Irish, and Postcolonial Literature. 3 Hours.
A survey of modern and contemporary literature in English written in Great Britain, Ireland, Africa, Asia, and the Caribbean. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2343. Survey of American Lit from the Colonial Period through Naturalism (ACTS Equiv=ENGL 2653). 3 Hours.
A survey of major American writers from the colonial period to 1900. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

ENGL 2353. Survey of Modern and Contemporary American Literature (ACTS Equivalency = ENGL 2663). 3 Hours.
A survey of American writers after 1900. Prerequisite: ENGL 1013 and ENGL 1023. (Typically offered: Fall and Spring)

\section*{ENGL 2413. Introductory Topics in English. 3 Hours.}

Students will understand concepts and issues of theme, form, and motif in literary works about the designated topic. Students will improve in their abilities to read literary works carefully and critically and to write about literature correctly and cogently. Topics and content will vary from semester to semester. (Typically offered: Irregular)

\section*{ENGL 3013. Creative Writing II. 3 Hours.}

Laboratory course for students who wish to attempt original work in the various literary forms. Prerequisite: ENGL 2023 or equivalent. (Typically offered: Fall and Spring)

ENGL 3053. Technical and Professional Writing (ACTS Equivalency = ENGL 2023). 3 Hours.

Intensive practice in such types of writing as processes, descriptions of mechanism, abstracts, and laboratory and research reports. The criteria for effective written exposition in the scientific areas, including agriculture and engineering. Prerequisite: ENGL 1013 and ENGL 1023 or equivalent. (Typically offered: Fall and Spring)

ENGL 3083. Professional Topics. 3 Hours.
Specialized topics related to professional issues in the humanities, e.g. academic and alternative-academic job searches, publication workshops, public humanities, and/or teaching of humanities disciplines at various levels. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with HUMN 3083.
ENGL 3103. Approaches to Critical Thinking About Literature and Culture. 3 Hours.
Introduces students to a selection of critical methods for studying literature and culture, emphasizing careful reflection on methodological choices. Readings will vary based on instructor expertise and interest. (Typically offered: Fall and Spring)

ENGL 3113. Folklore. 3 Hours.
Popular literature (ballads, folktales, etc.). Prerequisite: Junior standing. (Typically offered: Irregular)

ENGL 3123. Folk and Popular Music Traditions. 3 Hours.
Introduction to folk and popular music studies. Emphasis on American traditions. (Typically offered: Irregular)

ENGL 3173. Introduction to Linguistics. 3 Hours.
Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, the history of linguistic scholarship. Prerequisite: Junior standing. (Typically offered: Irregular)
This course is cross-listed with COMM 3173, WLLC 3173.
ENGL 3203. Poetry. 3 Hours.
A critical introduction to the genre. (Typically offered: Fall and Spring)
ENGL 3213. Fiction. 3 Hours.
A critical introduction to the genre. (Typically offered: Fall and Spring)
ENGL 3223. Drama. 3 Hours.
The companion course of Theatre in London Study Abroad which immerses scholars in the world of theatre and culture in Britain. Students spend four weeks in London with excursions to Stratford-upon-Avon, Oxford and Bath. Literature, performance, design and history are all explored through lectures, field trips and writing prompts. (Typically offered: Summer)

ENGL 3253. The Latinx Image in Media. 3 Hours.
Exploration of the image and experience of Latinx populations as represented in visual and print media, including film, television, news journalism, and art. Topics related to U.S. Latinx history, culture, politics, and socioeconomics will be examined in the analyses of these mediated depictions. (Typically offered: Irregular)
ENGL 3263. African Americans in Film. 3 Hours.
A survey of the history of images of African Americans in film, especially as these images are examined in the context of stereotypical renditions and/or realistic representations of African American experiences. Issues of African American history, culture, and socio-political context will be addressed in the analyses of these films. Prerequisite: ENGL 1023 and advanced standing. (Typically offered: Irregular) This course is cross-listed with AAST 3263, JOUR 3263, COMM 3263.
ENGL 3283. Topics in Popular Culture and Popular Genres. 3 Hours. Survey of a broad topical area in popular culture and popular genres, such as science fiction or detective fiction. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 3433. Introduction to Chaucer. 3 Hours.}

Course designed primarily for undergraduates. Extensive reading in Chaucer's major works. (Typically offered: Irregular)

ENGL 3443. Topics in Literature, Medicine, and Science. 3 Hours.
Examines the intersections between medical and scientific topics and literature, with attention to specific theories, themes, genres, authors, historical moments, literary movements, or other organizing principles. Prerequisite: ENGL 1013 and ENGL 1023, or equivalent in both. (Typically offered: Spring Odd Years) May be repeated for up to 9 hours of degree credit.

ENGL 3543. Topics in U.S. Latino/Latina Literature and Culture. 3 Hours. The study of works of U.S. Latino/Latina literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3553. Topics in Native American Literature and Culture. 3 Hours.
The study of works of Native American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3573. Special Topics in Diversity. 3 Hours.
The study of literature and culture with specific focus on issues of diversity, inclusion, and equality. Courses may be organized around specific theories, themes, genres, authors, historical moments, artistic movements, comparative and intersectional approaches, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3583. Topics in Arab American Literature and Culture. 3 Hours.
The study of works of Arab American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. No knowledge of Arabic necessary. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3593. Topics in Gender, Sexuality, and Literature. 3 Hours.
The study of gender or sexuality and literature, with attention to specific theories, themes, genres, authors, historical moments, literary movements, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 3603. Topics in Rhetoric and Composition. 3 Hours.}

The study of special topics in the field of Rhetoric and Composition. Content will vary. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 3623. The Bible as Literature. 3 Hours.}

The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Typically offered: Irregular) This course is cross-listed with WLIT 3623.

ENGL 3633. Writing on Social Issues. 3 Hours.
The study and application of writing on a range of social issues. Content will vary. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3713. Topics in Medieval Literature and Culture. 3 Hours.
Study of the languages, literature, and civilization of the British Isles from approximately 500 to 1500 CE (including Old English, Middle English, Latin, Celtic, Anglo-Norman, and Scandinavian). Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3713H. Honors Topics in Medieval Literature and Culture. 3 Hours. Study of the languages, literature, and civilization of the British Isles from approximately 500 to 1500 CE (including Old English, Middle English, Latin, Celtic, Anglo-Norman, and Scandinavian). Content varies. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is equivalent to ENGL 3713.

\section*{ENGL 3723. Topics in Renaissance Literature and Culture. 3 Hours.}

The study of literary works of the English Renaissance, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Course content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3723H. Honors Topics in Renaissance Literature and Culture. 3 Hours. The study of literary works of the English Renaissance, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Course content varies. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is equivalent to ENGL 3723.
ENGL 3733. Topics in Restoration and Eighteenth-Century Literature and Culture. 3 Hours.
The study of Restoration and eighteenth-century literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3743. Topics in Nineteenth-Century British Literature and Culture. 3 Hours.
The study of literature of the 19th century, with attention to particular themes, genres, authors, literary movements, historical movements, or other organizing principles. Course content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3753. Topics in Modern and Contemporary British Literature and Culture. 3 Hours.
The study of a special topic in the field of modern and contemporary British literature and culture. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 3833. Topics in American Literature and Culture to 1900. 3 Hours. The study of American literature and culture to 1900, with attention to particular themes, genres, authors, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3843. Topics in Modern and Contemporary American Literature and Culture. 3 Hours.
The study of a special topic in the field of modern and contemporary American literature and culture. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 3853. Topics in African-American Literature and Culture. 3 Hours. The study of works of African American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with AAST 3853.
ENGL 3863. Topics in Literature and Culture of the American South. 3 Hours.
The study of works of literature of the American South, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3873. Seminar in Medical Humanities. 3 Hours.
Combines literary and critical texts that lead students to consider the ways in which literature and the humanities enrich and inform medical education and practice. Students will practice critical analysis and reflection to instill in them a commitment to compassionate, community responsive, and culturally competent medical care. (Typically offered: Spring)
ENGL 3873H. Honors Seminar in Medical Humanities. 3 Hours.
Combines literary and critical texts that lead students to consider the ways in which literature and the humanities enrich and inform medical education and practice.
Students will practice critical analysis and reflection to instill in them a commitment to compassionate, community responsive, and culturally competent medical care. (Typically offered: Spring)
This course is equivalent to ENGL 3873.
ENGL 3903. Special Topics. 3 Hours.
Survey of a broad topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 3923H. Honors Colloquium. 3 Hours.
Covers a special topic or issue. Offered as part of the honors program. Prerequisite: honor candidacy (not restricted to candidacy in English). (Typically offered: Irregular) May be repeated for degree credit.
ENGL 4003. Style and Grammar for Professional Writers. 3 Hours.
Study of English style and grammar at an advanced level for students who plan to teach writing or practice as professional or technical writers. (Typically offered: Fall Odd Years)

ENGL 4013. Undergraduate Poetry Workshop. 3 Hours.
Gives close attention to individual manuscripts in a workshop environment. Prerequisite: ENGL 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
ENGL 4023. Undergraduate Fiction Workshop. 3 Hours.
Gives close attention to individual manuscripts in a workshop environment. Prerequisite: ENGL 3013 or equivalent. (Typically offered: Irregular)
ENGL 4113. Undergraduate Independent Study. 3 Hours.
Undergraduate original research and writing. Prerequisite: 'B' average and twothirds (21 hours) of regular requirements for English major completed. Departmental approval and instructor approval required. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.
ENGL 4133. Writing Nature. 3 Hours.
Study of writings about nature, both scientific and literary. Examination of the basis of each author's relationship with (and definition of) the natural world while examining the literary/aesthetic aspects of that experience. Prerequisite: ENGL 1023. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 4133H. Honors Writing Nature. 3 Hours.}

Study of writings about nature, both scientific and literary. Examination of the basis of each author's relationship with (and definition of) the natural world while examining the literary/aesthetic aspects of that experience. Prerequisite: ENGL 1023. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.
This course is equivalent to ENGL 4133.
ENGL 4143. American Film Survey. 3 Hours.
A survey of major American genres, major directors, and films that have influenced the development of motion pictures. (Typically offered: Irregular)
This course is cross-listed with COMM 4143.
ENGL 4193. Undergraduate Internship in English. 3 Hours.
Internship changes depending on availability and student interest. Prerequisite: Junior standing and department consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ENGL 4303. Introduction to Shakespeare. 3 Hours.}

Extensive reading in Shakespeare's comedies, histories, tragedies, and nondramatic poetry. (Typically offered: Fall)

\section*{ENGL 4503. Introduction to Literary Theory. 3 Hours.}

A historical survey of literary theory from Plato onwards. (Typically offered: Irregular)
ENGL 4513. Studies in Literary Criticism and Theory. 3 Hours.
A survey of contemporary trends in literary criticism. Emphasis will be placed on engaging the practices of a particular theory. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4523. Studies in U.S. Latino/Latina Literature and Culture. 3 Hours.
The study of works of U.S. Latino/a literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 4553. Studies in Native American Literature and Culture. 3 Hours.
The study of works of Native American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 4563. Studies in Major Authors. 3 Hours.}

The concentrated study of works by one or more major authors. At least one major paper will be required. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4573. Studies in Major Literary Movements. 3 Hours.
This course focuses on the literature either of a major literary movement such as Romanticism or Modernism or of a more specific topic such as Utopianism in twentieth-century writing. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4583. Studies in Arab American Literature and Culture. 3 Hours.
The study of works of Arab American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. Research paper required. No knowledge of Arabic necessary. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4593. Studies in Gender, Sexuality, and Literature. 3 Hours.
The study of gender or sexuality and literature, with attention to specific theories, themes, genres, authors, historical moments, literary movements, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 4603. Special Studies. 3 Hours.}

Concentrated study of a specific topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{ENGL 4603H. Honors Special Studies. 3 Hours.}

Concentrated study of a specific topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to ENGL 4603.
ENGL 4673. Special Studies in Diversity. 3 Hours.
The study of literature and culture with specific focus on issues of diversity and inclusion. May be organized around specific theories, themes, genres, authors, or other organizing principles. At least one major research paper will be required. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 4713. Studies in Medieval Literature and Culture. 3 Hours.}

Study of the languages, literature, and civilization of the British Isles from approximately 500 to 1500 CE (including Old English, Middle English, Celtic, AngloNorman, and Scandinavian). Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4723. Studies in Renaissance Literature and Culture. 3 Hours.
The study of literary works of the English Renaissance, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Course content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 4733. Studies in Restoration and Eighteenth-Century Literature. 3 Hours. The study of Restoration and eighteenth-century literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 4743. Studies in Nineteenth-Century British Literature and Culture. 3 Hours.
The study of literature of the nineteenth century, with attention to particular themes, genres, authors, literary movements, historical movements, or other organizing principles. Course content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4753. Studies in Modern and Contemporary British Literature and Culture. 3 Hours.
The study of modern and contemporary British literature and culture. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

ENGL 4833. Studies in American Literature and Culture to 1900. 3 Hours.
The study of American literature and culture to 1900, with attention to particular themes, genres, authors, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
ENGL 4843. Studies in Modern and Contemporary American Literature and Culture. 3 Hours.
The study of modern and contemporary American literature and culture, with attention to particular themes, genres, authors, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 4853. Studies in African American Literature and Culture. 3 Hours.}

The study of works of African American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with AAST 4853.
ENGL 4863. Studies in Literature and Culture of the American South. 3 Hours. The study of works of literature of the American South, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least on major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 4903. Studies in Rhetoric and Composition. 3 Hours.}

Concentrated study of a specific topical area related to Rhetoric and Composition. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 4933. Studies in Popular Culture and Popular Genres. 3 Hours.}

The study of a focused topical area in popular culture and popular genres, such as science fiction or detective fiction. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ENGL 498V. Senior Thesis. 1-6 Hour.}

Honors thesis under the direction of a faculty member in the Department of English. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ENGL 5003. Composition Pedagogy. 3 Hours.}

Introduction to teaching college composition. Designed for graduate assistants at the University of Arkansas. (Typically offered: Fall)

ENGL 5023. Writing Workshop: Fiction. 3 Hours.
Fiction writing workshop. Prerequisite: Creative Writing MFA students only.
(Typically offered: Irregular) May be repeated for up to 24 hours of degree credit.
ENGL 5033. Writing Workshop: Poetry. 3 Hours.
Poetry writing workshop. Prerequisite: Creative Writing MFA students only. (Typically offered: Irregular) May be repeated for up to 24 hours of degree credit.

\section*{ENGL 5043. Translation Workshop. 3 Hours.}

Problems of translation and the role of the translator as both scholar and creative writer; involves primarily the discussion in workshop of the translations of poetry, drama, and fiction done by the students, some emphasis upon comparative studies of existing translations of well-known works. Primary material will vary. Prerequisite: Reading knowledge of a foreign language and Creative Writing MFA students only. (Typically offered: Irregular) May be repeated for up to 24 hours of degree credit.

ENGL 5083. Professional Topics. 3 Hours
Specialized topics related to professional issues in the humanities, e.g. academic and alternative-academic job searches, publication workshops, public humanities, and/or teaching of humanities disciplines at various levels. (Typically offered: Irregular)
This course is cross-listed with HUMN 5083.
ENGL 510V. Readings in English and American Literature. 1-6 Hour.
Open to Honors candidates and graduate students. Prerequisite: Departmental approval and instructor approval required. (Typically offered: Irregular) May be repeated for degree credit.

ENGL 5173. Advanced Studies in Medieval Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5193. Graduate Internship in English. 3 Hours.
Internship changes depending on availability and student interest. Departmental consent required. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ENGL 5203. Introduction to Graduate Studies. 3 Hours.
Develop knowledge and strategies for successfully negotiating graduate work and the profession. Topics covered include, but are not limited to, scholarly habits and practices, writing and publishing skills, scholarly associations, journals, conferences, university structures, and career paths. Emphasis on the development of individual academic and professional goals. (Typically offered: Irregular)

ENGL 5213. Portfolio Workshop. 3 Hours.
Workshop designed for students in the M.A. Program in English or Comparative Literature and Cultural Studies who are using the Portfolio Option to complete the program. Instructor consent required. (Typically offered: Spring)

ENGL 5223. Advanced Studies in Renaissance Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 5233. Craft of Translation: I. 3 Hours.
An examination of the principal challenges that confront translators of literature, including the recreation of style, dialect, ambiguities, and formal poetry; vertical translation; translation where multiple manuscripts exist; and the question of how literal a translation should be. (Typically offered: Irregular)

ENGL 5243. Special Topics. 3 Hours.
Designed to cover subject matter not offered in other courses. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ENGL 5263. Craft of Fiction: I. 3 Hours.}

Such aspects of the genre as scene, transition, character, and conflict. Discussion is limited to the novel. (Typically offered: Irregular)

ENGL 5273. Craft of Poetry: I. 3 Hours.
An examination of perception, diction, form, irony, resolution, and the critical theories of the major writers on poetry, such as Dryden, Coleridge, and Arnold. (Typically offered: Irregular)

\section*{ENGL 5283. Craft of Fiction: II. 3 Hours.}

Second part of the study of the techniques of fiction. Discussion is limited to the short story. (Typically offered: Irregular) May be repeated for degree credit.

ENGL 5293. Craft of Poetry: II. 3 Hours.
Second part of the study of the techniques of poetry; independent study of a poet or a problem in writing or criticism of poetry. (Typically offered: Irregular) May be repeated for up to 15 hours of degree credit.

ENGL 5383. Histories of Rhetoric and Composition. 3 Hours.
Surveys contextualized histories of the field of Rhetoric and Composition. Focus and readings will vary depending on instructor interest. (Typically offered: Spring Even Years)

ENGL 5403. Advanced Studies in Nineteenth-Century British Literature and Culture. 3 Hours
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5413. Advanced Studies in Modern and Contemporary British Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5453. Technical Writing in Healthcare Settings. 3 Hours
Focuses on the work of technical writing across a variety of healthcare settings. Prepares healthcare professionals and healthcare-adjacent professionals to use technical writing theory and skills in their workplace. (Typically offered: Summer)

ENGL 5503. Style and Context for Tech Writers. 3 Hours
Addresses project management frameworks and their impact on technical writing, creation of design and deliverables for team meetings, and the role of writing in user experience work. (Typically offered: Summer)

ENGL 5513. Design, Editing, and Publication for Technical Writers. 3 Hours. Focuses on the document creation workflow of technical writers, starting with document design, moving into editing, and finally layout for publication. (Typically offered: Fall Odd Years)

ENGL 5523. Technical Writing and UX for Online Audiences. 3 Hours.
Investigates the challenges of creating documents that must exist concurrently in online, face-to-face, and mixed modalities, with a focus on online writing. Covers user-centered theory, strategies, and skills for online writing, HTML, CSS, and web standards. Specific focus on creating organizational websites with editorial workflows geared towards technical writers. (Typically offered: Fall)

\section*{ENGL 5533. Technical Writing Praxis. 3 Hours.}

Focuses on the process of applying theory to situated practice in technical writing. The course is offered in two sessions of the summer. The first session focuses on style in technical writing. The second session focuses on applied practice, with students choosing between academic writing, professional writing, or grant and proposal writing. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

ENGL 5543. Advanced Studies in U.S. Latino/Latina Literature and Culture. 3 Hours.

The study of works of U.S. Latino/a literature and literary criticism, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5563. Advanced Studies in Native American Literature and Culture. 3 Hours.

The study of works of Native American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5583. Advanced Studies in Arab American Literature and Culture. 3 Hours.
The study of works of Arab American literature and criticism, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. Research paper required. No knowledge of Arabic necessary. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5593. Advanced Studies in Gender, Sexuality, and Literature. 3 Hours. The study of gender or sexuality and literature, with attention to specific theories, themes, genres, authors, historical moments, literary movements, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5623. The Bible as Literature. 3 Hours.
The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Typically offered: Irregular) This course is cross-listed with WLIT 5623.

ENGL 5653. Shakespeare: Plays and Poems. 3 Hours.
An introduction to a broad selection of Shakespeare's work. (Typically offered: Irregular)

ENGL 5703. Advanced Studies in American Literature and Culture Before 1900.

\section*{3 Hours.}

Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5723. Advanced Studies in Literature and Culture of the American South. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 5763. Advanced Studies in Postcolonial Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 5803. Advanced Studies in Modern and Contemporary American Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5863. Advanced Studies in African American Literature and Culture. 3 Hours.
The study of works of African American literature and literary criticism, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 5923. Advanced Studies in Film and Media. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 5933. Advanced Studies in Popular Culture and Popular Genres. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5943. Advanced Studies in Criticism and Literary Theory. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 5963. Advanced Studies in Technical Writing and Public Rhetorics. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. Course will cover various topics relevant to students working in Technical Writing and Public Rhetorics. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ENGL 5973. Advanced Studies in Rhetoric and Composition. 3 Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6113. Seminar in Medieval Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6203. Seminar in Renaissance Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6243. Seminar in Special Topics. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 6443. Seminar in Nineteenth-Century British Literature and Culture. 3
Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6513. Seminar in Modern and Contemporary British Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 6543. Seminar in U.S. Latino/Latina Literature and Culture. 3 Hours.
The study of works of U.S. Latino/a literature and literary criticism, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper, suitable for presentation or publication, will be required. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 6553. Seminar in Native American Literature and Culture. 3 Hours. The study of works of Native American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper, suitable for presentation or publication, will be required. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 6593. Seminar in Gender, Sexuality, and Literature. 3 Hours. The study of gender or sexuality and literature, with attention to specific theories, themes, genres, authors, historical moments, literary movements, or other organizing principles. Content varies. At least one major research paper, suitable for presentation or publication, will be required. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6733. Seminar in Literature and Culture of the American South. 3 Hours. Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6763. Seminar in Postcolonial Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. At least one major research paper, suitable for presentation or publication, will be required.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6803. Seminar in Modern and Contemporary American Literature and Culture. 3 Hours.
Subject matter changes depending on student interest and faculty expertise. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 6853. Seminar in African American Literature and Culture. 3 Hours. The study of works of African American literature and literary criticism, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper, suitable for presentation or publication, will be required. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

ENGL 6933. Seminar in Popular Culture and Popular Genres. 3 Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6943. Seminar in Criticism and Literary Theory. 3 Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 6973. Seminar in Rhetoric and Composition. 3 Hours.
Subject matter changes depending on student interest and faculty expertise.
(Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
ENGL 698V. Master's Thesis. 1-6 Hour.
Master's thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ENGL 699V. Master of Fine Arts Thesis. 1-6 Hour.}

Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

ENGL 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{English Language and Cultural Studies (ELAC)}

\section*{Courses}

\section*{ELAC 000V. University Connections Intensive English. 1-9 Hour}

This class is part of the Intensive English Program designed for students who are in their first semester of the University Connections three-semester program. Not for degree credit. Prerequisite: Language assessment required. (Typically offered: Irregular)

\section*{ELAC 0011. Writing Workshop: Grammar through Editing. 1 Hour.}

This class is designed to assist upper-intermediate to advanced non-native speakers of English improve their academic writing at the sentence level. Students' writing is analyzed for grammatical accuracy; students develop strategies for editing their writing more independently and learn to produce clearer, more grammatically correct writing. Not for degree credit. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / TOEFL Alternative. (Typically offered: Fall and Spring)

ELAC 0103. University Connections Intensive English Level I. 3 Hours.
Students new to English will be introduced to the letters and sounds of the alphabet, fundamental grammar structures for conversation and writing, and essentia vocabulary on themes (relevant to community, individual and academic entities), and cultural distinctions in the American university system. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

ELAC 0203. University Connections Intensive English Level II. 3 Hours. Based on placement or successful completion of Level I (ELAC 0103) coursework, emerging learners continue to develop reading-for-learning and writing-forcommunication strategies; extend vocabulary on themes relating to community, individual and academic development, and cultural distinctions of the United States; and focus on advancing grammar structures for conversation and writing. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

ELAC 0303. University Connections Intensive English Level III. 3 Hours. Based on placement or successful completion of Level II (ELAC 0203) coursework, intermediate learners extend reading-for-learning and writing-for-communication strategies to more academic contexts; extend vocabulary and word form knowledge (on themes relating to community, individual and academic development, and cultural distinctions of the United States); and focus on applying advanced grammar structures to conversation and writing. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

ELAC 0403. University Connections Intensive English Level IV. 3 Hours. Based on placement or successful completion of Level III (ELAC 0303) coursework, intermediate learners continue to develop strategies for comprehension and communication in all language skills; to extend vocabulary to concepts related to social, environmental and global themes in academics; and to explore the cultural distinctions of the United States. Advancing grammar structures for conversation and writing extend to sophisticated forms of support and persuasion. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

ELAC 0503. University Connections Intensive English Level V. 3 Hours.
Based on placement or successful completion of Level IV (ELAC 0403) coursework, this course incorporates critical thinking and processing skills for improved reading and listening comprehension, and accuracy and efficacy in writing and speaking. Vocabulary development advances with social, environmental and global themes. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

ELAC 0603. University Connections Intensive English Level VI. 3 Hours. Following placement or successful completion of Level V (ELAC 0503) coursework, highly effective writing skills and reading comprehension are solidified and integrated intensely at this advanced level. Through extended reading, writing and presentation assignments, students improve their ability to recognize and deliver main ideas, distinguish and produce persuasive support, and respond to content in a range of contexts. Applied language instruction and assignments will be supplemented by and supported with practical training in educational technology and investigation through special topics. (Typically offered: Fall, Spring and Summer)

ELAC 1023. Academic Writing Across Disciplines. 3 Hours.
The class is designed to improve the academic writing and critical thinking skills for non-native speakers of English in all fields. Through focused instruction and extensive practice, students will improve their academic lexicon, grammatical accuracy, discourse organization and fluency in formal academic writing. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / TOEFL Alternative. (Typically offered: Fall and Spring)

ELAC 1033. English Language through Mass Media. 3 Hours.
Students expand their communicative language skills through the study of news and media. By analyzing the messages and methods used in a variety of sources, students improve their listening, speaking, reading and writing skills. Students develop critical thinking skills as they evaluate and synthesize ideas from the texts. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / TOEFL Alternative. (Typically offered: Fall and Spring)

ELAC 2012. English Phonology for Non-Native Speakers. 2 Hours In this course students study the basic principles of phonetics and phonology of English in order to develop their ability to produce the standard American accents. Not for degree credit in the Fulbright College of Arts and Sciences. (Typically offered: Fall and Spring)

\section*{ELAC 2023. Business English Communications. 3 Hours.}

This is a course for non-native English speakers to develop their oral communication skills for professional business settings. From informal dialogues to formal business presentations, students learn appropriate verbal and non-verbal communication strategies and develop confidence to communicate effectively and comprehensibly. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / TOEFL Alternative. (Typically offered: Fall and Spring)

ELAC 2043. Seminar in United States Culture, Communication, and Institutions. 3 Hours.
Through an in-depth study of American life, culture, communicative style and institutions, non-native speakers of English improve their oral and written communication skills. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / UofA ELPT (writing) / GRE Analytical Writing / GMAT Analytical Writing / TOEFL Alternative. (Typically offered: Fall and Spring)

\section*{ELAC 2053. Academic Presentations. 3 Hours.}

For advanced non-native speakers of English to build skills and strategies for delivering effective, clear presentations in academic and professional settings. Students learn about organization, best use of visual aids, connecting with an audience, facilitating questions and answers, and intercultural issues that affect perception and comprehensibility. Not for degree credit in the Fulbright College of Arts and Sciences. Prerequisite: At the request of an instructor or through TOEFL (iBT) exam, spoken portion of the International English Language Testing System (IELTS), or the University of Arkansas Spoken Language Proficiency Test (SLPT). (Typically offered: Fall and Spring)
ELAC 5033. Research Writing for the Social Sciences and Education. 3 Hours. This research-focused writing class will help graduate-level non-native English speakers in the social sciences and education communicate their understanding of course material and research more accurately and effectively. Students will focus on the genres specific to their fields. They will also improve their ability to orally present their ideas. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / U of A ELPT (writing) / GRE Analytical Writing / GMAT Analytical Writing / TOEFL Alternative. (Typically offered: Fall and Spring)

\section*{ELAC 5043. Research Writing in the STEM Fields. 3 Hours.}

A research-based writing class for graduate-level non-native speakers of English that focuses on the demands of writing in the STEM fields. Students will develop their ability to accurately and effectively use the conventions of scientific writing. Students will improve their ability to orally present their research. Prerequisite: Placement through TOEFL iBT Writing / TOEFL TWE / IELTS writing / U of A ELPT (writing) / GRE Analytical Writing / GMAT Analytical Writing / TOEFL Alternative. (Typically offered: Fall and Spring)
ELAC 5053. International Graduate Teaching Assistant Training. 3 Hours. To prepare international graduate assistants to assist or teach in U.S. university classes. The course focuses on enhancing teaching and communication skills, and cultural knowledge. Students are non-native speakers of English who currently have a teaching assistantship or plan to obtain one in the following semester. Not for degree credit. Prerequisite: Language assessment required. (Typically offered: Fall and Spring)

\section*{Entomology (ENTO)}

\section*{Courses}

ENTO 1021L. Insects, Science and Society Lab. 1 Hour.
To educate students on the importance of insects in biology and science, human and animal medicine, ecosystems, agriculture, pollination, genetic research, the arts, and human culture and history. The lab will be a hands-on approach to reinforcing entomological concepts addressed in lecture. Corequisite: ENTO 1023. (Typically offered: Fall and Spring)
ENTO 1023. Insects, Science and Society. 3 Hours.
To educate students on the importance of insects in biology and science, human and animal medicine, ecosystems, agriculture, pollination, genetic research, the arts, and human culture and history. Corequisite: ENTO 1021L. (Typically offered: Spring)

ENTO 3011L. Introduction to Insect Identification Lab. 1 Hour.
Introductory lab course on insect identification, collection, and curation techniques, primarily designed as an intensive add-on to ENTO 3013 for students wanting a more in-depth examination of insect diversity. Insect collection required. Course includes field trips. Students are encouraged to contact instructor before enrolling. Pre- or Corequisite: ENTO 3013. (Typically offered: Fall)
This course is cross-listed with BIOL 3011L.
ENTO 3013. Introduction to Entomology. 3 Hours.
Fundamentals of insect biology including structure and function, development, ecology, behavior, plant feeding and disease transmission. Lecture 3 hours/week. Students interested in a more intensive examination of insects, including collection, curation, and identification techniques, should sign up for the separate one credit lab ENTO 3011L. Students are strongly encouraged to take BIOL 1543 before registering for this course. (Typically offered: Fall)
This course is cross-listed with BIOL 3013.
ENTO 400V. Special Problems. 1-4 Hour.
Special problems. (Typically offered: Fall, Spring and Summer)
ENTO 4013. Insect Behavior and Chemical Ecology. 3 Hours.
Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory/discussion 2 hours per week. Corequisite: Lab component (Typically offered: Spring Even Years)
This course is cross-listed with BIOL 4013.
ENTO 4024. Insect Diversity and Taxonomy. 4 Hours.
Principles and practices of insect classification and identification with emphasis on adult insects. Corequisite: Lab component. Prerequisite: ENTO 3013. (Typically offered: Fall Even Years)
This course is cross-listed with BIOL 4024.

\section*{ENTO 4043. Honey Bee Biology and Beekeeping. 3 Hours.}

To acquaint the student with social insects in general and honey bees in particular, to promote an interest in beekeeping as a hobby, occupation, and/or science, to give the students the basic knowledge of how to keep honey bees, and to increase awareness of the contribution that pollinating insects make to agriculture, natural ecosystems, and human life. Lecture 3 hours, plus beekeeping field day. (Typically offered: Spring)

\section*{ENTO 4053. Insect Ecology. 3 Hours.}

To develop understanding of important ecological concepts through study of dynamic relationships among insects and their environment. To become familiar with the literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. Corequisite: Lab component. (Typically offered: Fall Even Years)
This course is cross-listed with BIOL 4053.
ENTO 410V. Special Topics. 1-3 Hour.
Topics not covered in other courses or a more intensive study of specific topics in entomology. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ENTO 4123. Insect Pest Management. 3 Hours.}

Study of principles and concept of insect pest management. Areas covered include survey of arthropod pests and damage, population dynamics, damage thresholds, physiological units, prediction models, surveillance, arthropod sampling, strategies and tactics utilized to maintain pest populations below economic injury levels. Prerequisite: ENTO 3013. (Typically offered: Spring Odd Years)

\section*{ENTO 4133. Advanced Applied Entomology. 3 Hours.}

Biology and ecology of major arthropod pests as model applied management systems. Activities include independent study, literature review and group discussions. Knowledge of general entomology and pest management is required. Self-learning modules are available. Lecture 2 hours/week and direct self-study laboratory 2 hours/week. Corequisite: Lab component. Prerequisite: ENTO 3013. (Typically offered: Spring Even Years)

\section*{ENTO 500V. Special Problems. 1-4 Hour.}

Special problems. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 4 hours of degree credit.

ENTO 5013. Morphology of Insects. 3 Hours.
Origin, evolution, and functional significance of external insect structure. Structure and function of major internal systems. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory 4 hours per week. Corequisite: Lab component. (Typically offered: Fall Odd Years)

ENTO 5024. Insect Diversity and Taxonomy. 4 Hours.
Principles and practices of insect classification and identification with emphasis on adult insects. 2.5 hours lecture, 4 hours lab. Prerequisite: ENTO 3013 or instructor consent. Corequisite: Lab component. (Typically offered: Fall)
This course is cross-listed with BIOL 5024.

\section*{ENTO 5043. Honey Bee Biology and Beekeeping. 3 Hours.}

To acquaint the student with social insects in general and honey bees in particular, to promote an interest in beekeeping as a hobby, occupation, and/or science, to give the students the basic knowledge of how to keep honey bees, and to increase awareness of the contribution that pollinating insects make to agriculture, natural ecosystems, and human life. (Typically offered: Spring)
ENTO 5053. Insect Ecology. 3 Hours.
To develop an understanding of important ecological concepts through study of dynamic relationships among insects and their environment. To become familiar with the literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. 2 hours lecture/2 hours lab. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Fall Even Years)
This course is cross-listed with BIOL 5053.

\section*{ENTO 510V. Special Topics. 1-3 Hour.}

Topics not covered in other courses or a more intensive study of specific topics in entomology. (Typically offered: Irregular) May be repeated for degree credit.

\section*{ENTO 5113. Insect Behavior and Chemical Ecology. 3 Hours.}

Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Prerequisite: Instructor consent. Corequisite: Lab component. (Typically offered: Spring Even Years)
This course is cross-listed with BIOL 5113.
ENTO 5123. Biological Control. 3 Hours.
Theoretical and practical basis for biological control of arthropod pests and weeds via parasites, predators, and pathogens. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Fall Odd Years)

\section*{ENTO 5153. Insect Pest Management. 3 Hours.}

Study of principles and concept of insect pest management. Areas covered include a survey of arthropod pests and damage, population dynamics, damage thresholds, physiological units, prediction models, surveillance, arthropod sampling, strategies and tactics utilized to maintain pest populations below economic injury levels.
Prerequisite: Instructor consent. (Typically offered: Spring Odd Years)
ENTO 5163. Advanced Applied Entomology. 3 Hours.
Topics will include the integration of tactics, integration of disciplines and specific case histories in insect management, or use of insects to manage weeds.
Prerequisite: Instructor consent. (Typically offered: Spring Even Years)
ENTO 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{ENTO 6071. Seminar. 1 Hour.}

Fall: special topics not covered in regular course work. Spring: critical review of research papers in entomology. Seminar will be taken by graduate student majors for both semesters. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

ENTO 6113. Insect Physiology and Molecular Biology. 3 Hours.
Overview of insect physiology and modern molecular techniques to study physiological processes. Previous knowledge of basic entomology is helpful, but not required. Two lectures per week (1 hour 20 minutes each). (Typically offered: Spring Even Years)

ENTO 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Environmental Dynamics (ENDY)}

\section*{Courses}

ENDY 5053. Quaternary Environments. 3 Hours.
An interdisciplinary study of the Quaternary Period including dating methods, deposits soils, climates, tectonics and human adaptations. (Typically offered: Fall) This course is cross-listed with ANTH 5053, GEOS 5053.

\section*{ENDY 5113. Global Change. 3 Hours.}

Examines the interacting natural and anthropogenic factors involved in global change, concentrating on climate variability and change. Prerequisite: Graduate standing or instructor's approval. (Typically offered: Spring)
This course is cross-listed with GEOS 5113.
ENDY 5653. GIS Analysis and Modeling. 3 Hours.
Unlike conventional GIS courses that focus on studying "where", this course will teach students to address beyond "where" using various GIS analysis and modeling techniques to explore "why" and "how". The course will provide theoretical and methodological reviews of the principles of cartographic modeling and multi-criteria decision-making. Students will receive degree credit for only one of ENDY 5653, GEOS 5653, or ANTH 5653. (Typically offered: Spring)
This course is cross-listed with GEOS 5653.
ENDY 5853. Environmental Isotope Geochemistry. 3 Hours.
Introduction to principles of isotope fractionation and distribution in geological environments isotopic analytical methods, and extraction of isotope samples; application of isotopes in characterization of geologic processes and interaction with hydrologic, surficial, and biologic attenuation, paleothermometry soil and biochemical processes. (Typically offered: Spring)
This course is cross-listed with GEOS 5853.
ENDY 600V. ENDY Thesis Research. 1-6 Hour.
Master's Thesis. May be repeated for degree credit. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{ENDY 6013. Environmental Dynamics. 3 Hours.}

Required course for ENDY doctoral candidates. Overview of Earth Systems: Lithosphere; Hydrosphere, Atmosphere, Biosphere, Cryosphere, and human interaction across Earth systems. Emphasis on understanding of processes within Earth systems and interactions across Earth Systems as they pertain to global selfregulation, secular variation, climate stability, development and sustainability of human societies. Prerequisite: Graduate standing. (Typically offered: Fall)
ENDY 602V. Current Topics Seminar. 1-2 Hour.
Various aspects of the environment will be explored through topic specific seminars. Subject matter will change each semester addressing current environmental issues and research. Seminars will be one or two hours credit. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{ENDY 6033. Society and Environment. 3 Hours.}

This course examines the complex interrelationships between human societies and the natural environment. Drawing on diverse and interdisciplinary perspectives in archaeology, ethnography, history, geography, and palaeo-environmental studies, readings and discussion will explore the co-production of social and environmental systems over time. (Typically offered: Spring)
This course is cross-listed with ANTH 6033.
ENDY 689V. Special Problems in Environmental Dynamics. 1-6 Hour. Independent study of a topic related to environmental dynamics under the guidance of an ENDY faculty member. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

ENDY 6991. Environmental Dynamics Colloquium. 1 Hour.
Weekly meetings for discussion of current research in environmental dynamics. Graduate students must register for colloquium each semester during their first three semesters. Colloquium credit does not count towards minimum hours required for the doctorate. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for up to 20 hours of degree credit.

ENDY 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Environmental Resiliency (ENRE) Courses}

ENRE 5113. Adaptive Leadership. 3 Hours.
The sustainability movement requires knowledge of Earth and social systems, and strong adaptive leadership skills. Adaptive leadership is needed when taking on an adaptive challenge, sometimes called a "wicked problem." Wicked problems have no clear and obvious solution. Adaptive leadership is an ability to lead when there is no clear and obvious solution. These skills are needed in businesses, organizations, and in communities in order to sustain ourselves or create the resiliency we seek. (Typically offered: Irregular)

ENRE 5123. Foundations of Environmental Resiliency. 3 Hours.
An introduction to the concepts and strategies centered on resilience as it relates to the built and natural environment. Concepts include systems thinking, socioecological frameworks, Panarchy, and resilience frameworks, and diagnostics. Strategies include foundations of sustainability science and policy with ideas about dynamic environmental events and adaption methods. Case study investigations provide a summative and formative conclusion to course activities. This is a required course for the MS in Environmental Resiliency. (Typically offered: Irregular)

ENRE 5133. Science Communication for Executives. 3 Hours.
Overview of current best practices for science communication to corporate and executive level leadership focusing on ESG metrics. Companies face primarily structural challenges when pursuing long-term targets and communication is key to effectively allocating internal resources and reporting transparent progress. This course will give students the skills to assess the best approaches for their organization and role to convey the urgency of climate change and communicate essential milestones for tracking success. Through case studies and mock corporate-level communication projects to the class, students will have opportunities to practice the skills they learn and be ready to implement them in their current or future ESG role. (Typically offered: Irregular)

ENRE 5213. Leadership is Convening, Do You Know How to Convene?. 3 Hours.
Convening is leadership, especially when taking on an adaptive challenge, meaning a challenge that has no clear or immediate solution, including such complex challenges as sustainability and resiliency. The ability to bring people together and effectively impact the way that they see the world around them requires very specific skills in managing and communicating with the people that you are trying to mobilize. This class will explore the mindsets, techniques, and methods that enable strong stakeholder engagement so that leaders can create sustainability and resiliency movements inside organizations. (Typically offered: Irregular)

ENRE 5223. You Cannot Manage What You Do Not Measure. 3 Hours.
This class will look at developing and using frameworks to help track, assess, and manage energy, water, biodiversity, waste, and more across their businesses and supply chains. The tools are out there, but are you using them in ways that truly make a difference? And, are you using measurement as a way to drive leadership in sustainability and resiliency? (Typically offered: Irregular)

ENRE 5233. Carbon Accounting. 3 Hours.
This course will introduce the concept of carbon accounting and its common applications in the corporate and public sectors. Students will learn the basic principles of accounting for carbon emissions and offsets and will gain experience applying those concepts to an example company's GHG data. The course will also cover popular GHG emission and offset standards and reporting platforms, in addition to GHG capture, storage, and removal technologies that are currently being utilized. (Typically offered: Irregular)

ENRE 5313. Working with Stakeholders. 3 Hours.
Environmental professionals in both the private and public sectors regularly make decisions that impact diverse stakeholders. This course will teach strategies for effective stakeholder engagement such as understanding motivations, communicating technical information and uncertainty, and soliciting constructive ideas and feedback. Instructors will share their experiences working with stakeholders and discuss realistic scenarios. Students will learn how to make decisions informed by science and economics that protect the environment and address stakeholder concerns. (Typically offered: Irregular)

ENRE 5323. Survey of Watershed Hydrology and Water Resource Management. 3 Hours.
This course is designed to be a survey of hydrology and water resources management. Students will be introduced to the fundamental concepts of hydrology, water quantity and availability, and water quality and landmark water quality legislation. Providing students with real life examples is critical to student success in the course. Problem sets will challenge students to demonstrate their ability to understand written problem statements, select appropriate methodologies to apply to given problems. (Typically offered: Irregular)

ENRE 5333. ESG Reporting. 3 Hours.
Overview of current ESG Reporting landscape focusing on benchmarking, communication strategies, and data collection. The course will cover best practices for reporting and utilize case studies to review strategies of organizational approaches to annual improvements. Students will learn the skill to lead, organize and implement reporting systems that can be applied across industries, from consumer goods to nonprofits. (Typically offered: Irregular)

ENRE 5423. Business and the Environment. 3 Hours.
Business and the Environment is an interdisciplinary course in management that explores the interactions between organizations (including for-profit businesses and non-profit organizations), society, and the environment. Using an applied approach that draws on experiential and service learning exercises related to actual businesses, students will learn how organizations and society influence and are influenced by environmental factors. While it is important to understand how the environment influences organizations and societal members, it is equally important to understand what organizations can do to address environmental issues. (Typically offered: Irregular)

ENRE 5433. Built Environment Certification Systems. 3 Hours.
Introduction to the principles of built places impacting sustainability and resilience to serve as a broad theoretical overview underpinning the building and community rating systems such as LEED, LBC, BREEAM, and others. Students learn about the built environment's impact on global systems, communities of people, and individual health and well-being. Students will learn about water, energy, materials, health and air quality, and the building rating systems. (Typically offered: Irregular)

\section*{Environmental Science (ENSC) \\ Courses}

ENSC 1001L. Environmental Science Laboratory. 1 Hour.
Laboratory, field trip, and discussion sessions covering the concepts and information allowing students to critically evaluate environmental issues. Topics will include: laboratory safety, recycling, composting, geographic information systems, soil testing, water quality, hazardous wastes, waste disposal, wetlands, wastewater treatment, and sustainable food systems. Laboratory 2 hours/week. Corequisite: ENSC 1003. (Typically offered: Fall and Spring)

ENSC 1001M. Honors Environmental Science Laboratory. 1 Hour.
Laboratory, field trip, and discussion sessions covering the concepts and information allowing students to critically evaluate environmental issues. Topics will include: laboratory safety, recycling, composting, geographic information systems, soil testing, water quality, hazardous wastes, waste disposal, wetlands, wastewater treatment, and sustainable food systems. Laboratory 2 hours/week. Corequisite: ENSC 1003. (Typically offered: Fall and Spring)
This course is equivalent to ENSC 1001L.
ENSC 1003. Environmental Science. 3 Hours.
Series of lectures and discussions introducing the topic of environmental science including factors related to water, soil, and air quality. (Typically offered: Fall and Spring)

\section*{ENSC 1003H. Honors Environmental Science. 3 Hours.}

Series of lectures and discussions introducing the topic of environmental science including factors related to water, soil, and air quality. If taking course for University core Natural Science credit, ENSC 1001L is a co-requisite. Corequisite: Drill Component. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to ENSC 1003.

\section*{ENSC 3003. Introduction to Water Science. 3 Hours.}

Properties, occurrence, and description of the types, functions, quality and quantity, potential contaminants, uses, and guiding policies and regulations of the various water resources in the environment. Prerequisite: (ENSC 1003 OR CHEM 1053 (or higher) OR GEOS 1113 (or higher) OR BIOL 1543). (Typically offered: Spring)

\section*{ENSC 3103. Plants and Environmental Restoration. 3 Hours.}

Selection, establishment, and use of plants to promote soil stabilization, water quality, and wildlife habitat. Principles and practices of managing plants for soil remediation, nutrient and sediment trapping, and restoration of plant communities. Prerequisite: CSES 1203 or HORT 2003 or BIOL 1613. (Typically offered: Fall Even Years)

\section*{ENSC 3103H. Honors Plants and Environmental Restoration. 3 Hours.}

Selection, establishment, and use of plants to promote soil stabilization, water quality, and wildlife habitat. Principles and practices of managing plants for soil remediation, nutrient and sediment trapping, and restoration of plant communities. Prerequisite: CSES 1203 or HORT 2003 or BIOL 1613 and honors standing. (Typically offered: Fall)
This course is equivalent to ENSC 3103.

ENSC 3221L. Ecosystems Assessment Laboratory. 1 Hour.
The purpose of this laboratory is to complement concepts learned in lecture by carrying out experiments that familiarize students with methods used in soil and aquatic ecology. Students will collect samples, analyze and interpret data obtained from soil and water samples. Lab will meet once per week for 3 hours. Corequisite: ENSC 3223. (Typically offered: Fall Even Years)

ENSC 3223. Ecosystems Assessment. 3 Hours.
Application of basic ecological principles to gain an appreciation for ecosystem assessment and management. Lecture 3 hours per week. Prerequisite: BIOL 1543. (Typically offered: Fall Even Years)

\section*{ENSC 3263. Soil and Water Conservation. 3 Hours.}

Effect of land use on water quality. Major sources of agricultural nonpoint pollutants. Best management practices used to minimize water quality impacts. Prerequisite: CSES 2203. (Typically offered: Fall)

\section*{ENSC 3413. Principles of Environmental Economics. 3 Hours.}

An introductory, issues-oriented course in the economics of the environment. What is involved in society making decisions about environmental quality will be studied. Environmental issues important to the State of Arkansas and the United States will be emphasized. Prerequisite: AGEC 1103 or ECON 2023. (Typically offered: Spring) This course is cross-listed with AGEC 3413.

\section*{ENSC 3603. GIS for Environmental Science. 3 Hours.}

Provide instruction on the uses of GIS techniques in solving practical environmental and agricultural land use problems. Areas include: 1) an introduction to spatial variability in soils with an emphasis on the application of GIS techniques to map and understand spatial parameters important to different land uses, and 2) development of individual experience in the use of GIS in solving environmental and agricultural problems using an oral and written term project. Prerequisite: CSES 2203. (Typically offered: Spring Odd Years)

\section*{ENSC 3933. Environmental Ethics. 3 Hours.}

The course addresses ethical questions about nature and the natural environment. Topics of discussion include anthropocentric and biocentric ethics, population control, obligations to future generations, animal rights, moral considerability, Leopold's land ethic, deep ecology, and ecofeminism. Lecture/discussions 3 hours per week. Prerequisite: ENSC 1003 or PHIL 2003 or PHIL 2103. (Typically offered: Spring)
This course is cross-listed with PHIL 3113.
ENSC 400V. Special Problems. 1-3 Hour.
Work on special problems in environmental science or related fields. (Typically offered: Irregular) May be repeated for up to 8 hours of degree credit.

ENSC 400VH. Honors Special Problems. 1-3 Hour.
Work on special problems in environmental science or related fields. Prerequisite: Honors Standing. (Typically offered: Irregular) May be repeated for up to 8 hours of degree credit.
This course is equivalent to ENSC 400 V .
ENSC 4023. Water Quality. 3 Hours.
Physical, chemical, and biological characteristics of natural waters (rain, river, lake, soil, ground, etc.). Discussion of water quality parameters such as pH , alkalinity and acidity, redox, hardness, BOD, TSS, etc. Aquatic processes of pollutants and principles of modeling. Prerequisite: CHEM 1123 and CHEM 1121L and BIOL 1543 and BIOL 1541L. (Typically offered: Fall)

\section*{ENSC 4033. Analysis of Environmental Contaminants. 3 Hours.}

Methods of analysis for inorganic and organic contaminants, and microorganisms in soil and water. Quality assurance and quality control, sampling protocols, sample handling, instrumentation and data analysis. Lecture 3 hours per week. Pre- or Corequisite: CHEM 2613 and CHEM 2611L or CHEM 3603 and CHEM 3601L. (Typically offered: Spring Even Years)

ENSC 4263. Environmental Soil Science. 3 Hours.
Study of the behavior of pesticides, toxic organic compounds, metals, nutrients, and pathogenic microorganisms in the soil/plant/water continuum. Lecture 3 hours per week. Pre- or Corequisite: PHYS 2013 and PHYS 2011L. Prerequisite: CSES 3214. (Typically offered: Spring Even Years)

\section*{ENSC 4401. Professional Certification Preparation. 1 Hour.}

This class is meant to reinforce concepts and skills already learned in other soil and environmental science and related courses and to provide the opportunity to prepare to take a national certification examination. If so chosen, students may pursue certification as soil or environmental science professionals. Prerequisite: Senior standing. (Typically offered: Spring)
ENSC 5021L. Water Quality Laboratory. 1 Hour.
Field and laboratory experience in physical, chemical, and biological characteristics of natural waters (rain, river, lake, soil, ground, etc.). Laboratory experiments in water sampling, measurement of water quality parameters such as pH , alkalinity and acidity, redox, hardness, BOD, TSS, etc., and instrumentation. (Typically offered: Fall)

\section*{ENSC 5023. Water Quality. 3 Hours.}

Physical, chemical, and biological characteristics of natural waters (rain, river, lake, soil, ground, etc.). Discussion of water quality parameters such as pH , alkalinity and acidity, redox, hardness, BOD, TSS, etc. Aquatic processes of pollutants and principles of modeling. Prerequisite: CHEM 1123, CHEM 1121L, BIOL 1543 and BIOL 1541L or equivalent courses from undergraduate institution. (Typically offered: Fall)
ENSC 5033. Analysis of Environmental Contaminants. 3 Hours.
Methods of analysis for inorganic and organic contaminants, and microorganisms in soil and water. Quality assurance and quality control, sampling protocols, sample handling, instrumentation and data analysis. Lecture 3 hours. Prerequisite: Graduate standing. (Typically offered: Spring Even Years)

\section*{ENSC 5401. Professional Certification Preparation. 1 Hour.}

This class is meant to reinforce concepts and skills already learned in other soil and environmental science and related courses and to provide the opportunity to prepare to take a national certification examination. If so chosen, students may pursue certification as soil or environmental science professionals. (Typically offered: Spring)

\section*{Ethnomusicology (MUSY)}

\section*{Courses}

MUSY 2003. Music in World Cultures. 3 Hours.
Provides an overview of music from around the world. Examines the role of music in different social and cultural contexts. A variety of indigenous, folk, religious, popular, and art music traditions will be explored, along with the people and cultures that create them. (Typically offered: Fall and Spring)

MUSY 2003H. Honors Music in World Cultures. 3 Hours.
Provides an overview of music from around the world. Examines the role of music in different social and cultural contexts. A variety of indigenous, folk, religious, popular, and art music traditions will be explored, along with the people and cultures that create them. (Typically offered: Fall and Spring)
This course is equivalent to MUSY 2003.

\section*{Exercise Science (EXSC)}

\section*{Courses}

EXSC 2663. Terminology for the Health Professions. 3 Hours.
Emphasis is on word roots and combined forms of words describing various facets of health and disease. Descriptive definitions with application of practical significance included for the health professional. (Typically offered: Irregular)
This course is cross-listed with PBHL 2663.

\section*{EXSC 2733. Introduction to Exercise Science. 3 Hours.}

This class will cover introductory topics for the Exercise Science students in preparation for entry into the profession. In addition to specific topics, students will prepare their resumes and make a formal presentation. Prerequisite: EXSC major or instructor consent. (Typically offered: Fall and Spring)

EXSC 2733H. Honors Introduction to Exercise Science. 3 Hours.
This class will cover introductory topics for the Exercise Science students in preparation for entry into the profession. In addition to specific topics, students will prepare their resumes and make a formal presentation. (Typically offered: Fall and Spring)
This course is equivalent to EXSC 2733.
EXSC 3013. Functional Anatomy for Exercise Science. 3 Hours.
This course will include the study of functional human anatomy with emphasis on musculoskeletal and neurological systems. There will be an introduction to the clinical application and location of anatomical structures with some common injuries from a health professions perspective. Prerequisite: BIOL 2443 and BIOL 2441L. (Typically offered: Spring)

\section*{EXSC 3153. Exercise Physiology. 3 Hours.}

Examination of effects of exercise on the physiology of the systems of the body. The exploration includes effects during, immediately after, and as long term results of work and exercise. Prerequisite: (BIOL 2213 and BIOL 2211L) and (BIOL 2443 and BIOL 2441L). (Typically offered: Fall and Spring)

\section*{EXSC 3353. Mechanics of Human Movement. 3 Hours.}

An introduction to basic analysis of motor skills. No credit given toward major in Zoology. Prerequisite: (BIOL 2213 and BIOL 2211L), (BIOL 2443 and BIOL 2441L), and KINSBS or EXSCBS or PHEDBS majors or by instructor consent. (Typically offered: Fall and Spring)

EXSC 3393. Prevention and Care of Athletic Injuries. 3 Hours.
Introduction to the prevention and care of athletic related injuries. Includes athletic injury recognition and management. Prerequisite: BIOL 2443 and BIOL 2441L. (Typically offered: Irregular)

EXSC 3421L. Principles and Theories of Strength and Conditioning Laboratory. 1 Hour.
This course will provide the practical skills necessary to design and implement strength and conditioning programs. Students will put principles of cardiovascular, speed, agility, and strength training into practice as they relate to sport team training. Special emphasis is placed on the ability to evaluate exercise movements, prescribe appropriate exercise programs, administer tests, and support program prescription with a sound knowledge of anatomical and physiological adaptations to exercise. Students will learn various skills such as how to set up and run speed, agility, and quickness drills, how to select and administer the appropriate tests for athletic performance, and how to evaluate Olympic lifting technique. Corequisite: EXSC 3423. (Typically offered: Spring)
EXSC 3423. Principles and Theories of Strength and Conditioning. 3 Hours. This course will provide the practical skills necessary to design strength and conditioning programs. Special emphasis is placed on the ability to evaluate exercise movements, prescribe appropriate exercise programs, administer tests, and support program prescription with a sound knowledge of anatomical and physiological adaptation to exercise. The course will include laboratory experiences integrated with didactic learning. The laboratory experiences will in teach students various skills such as how to set up and run speed, agility, and quickness drills, how to select and administer the appropriate tests for athletic performance, and how to evaluate Olympic lifting technique. Everyone must participate in the labs as subjects. Come to lab prepared to exercise. When students are finished with this course, they will be well prepared to take the CSCS exam given by the National Strength and Conditioning Association. Corequisite: EXSC 3421L. Prerequisite: (BIOL 2443 and BIOL 2441L) and (BIOL 2213 and BIOL 2211L). (Typically offered: Spring)

EXSC 3533. Laboratory Techniques. 3 Hours.
Practical experience in testing physical fitness in both the laboratory and nonlaboratory settings. Pre- or Corequisite: EXSC 3153. (Typically offered: Fall, Spring and Summer)

\section*{EXSC 3723H. Honors Research Methods in Exercise Science. 3 Hours.}

This course will provide an overview of research methods for experimental research designs in exercise science. The students will learn facets of research including: developing a research idea, getting funding for research, obtaining IRB/IACUC approval, data collection, data input, statistical analyses, and preparing manuscripts for publication. Designed for exercise science honors students in spring of their junior year or the summer prior to their senior year to prepare them for their honor's thesis. Prerequisite: Honors standing. (Typically offered: Spring)
This course is cross-listed with PBHL 3723H.
EXSC 3901H. Exercise Science Honors Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and EXSCBS major. (Typically offered: Fall, Spring and Summer)

EXSC 391V. Special Topics in EXSC. 1-3 Hour.
Designed to cover specialized topics not presented in exercise science coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{EXSC 4013. Clinical Exercise Physiology. 3 Hours.}

The course is designed to build upon prior knowledge of Exercise Physiology and Exercise Testing. We will examine the physiological impacts of exercise and exercise training with specific emphasis on how they relate to clinical outcomes and clinical testing. At the end of the course students should have developed competencies congruent with the objectives of the American College of Sports Medicine's (ACSM) certification for Clinical Exercise Physiologist. Prerequisite: EXSC 3153 and EXSC 3533. (Typically offered: Fall)

\section*{EXSC 405V. Independent Study. 1-3 Hour}

Provides students an opportunity to pursue special study of research problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

EXSC 405VH. Honors Independent Study. 1-4 Hour.
Provides students an opportunity to pursue special study of research problems. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 4 hours of degree credit.
This course is equivalent to EXSC 405V.

\section*{EXSC 4323. Exercise Prescription. 3 Hours.}

This course is designed to provide knowledge and application of sound exercise prescription principles and design of exercise programs in cardiorespitory fitness, muscular fitness, body composition, flexibility, and balance. Pre- or corequisite: EXSC 3533. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring)

EXSC 4323H. Honors Exercise Prescription. 3 Hours.
This course is designed to provide knowledge and application of sound exercise prescription principles and design of exercise programs in cardiorespitory fitness, muscular fitness, body composition, flexibility, and balance. Pre- or corequisite: EXSC 3533. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring) This course is equivalent to EXSC 4323.

EXSC 4773. Performance and Drugs. 3 Hours.
The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. Prerequisite: EXSC 3153. (Typically offered: Fall and Spring)

EXSC 4773H. Honors Performance and Drugs. 3 Hours.
The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. Prerequisite: EXSC 3153 and honors standing. (Typically offered: Fall and Spring) This course is equivalent to EXSC 4773.

EXSC 4783. Sport and Exercise Psychology. 3 Hours.
This course examines how individuals behave in physical activity, exercise, and sport settings. Psychological antecedents and consequences of primary and secondary involvement in exercise, sport, and related physical activities will be introduced. Prerequisite: PSYC 2003. (Typically offered: Fall and Summer)

EXSC 4783H. Honors Sport and Exercise Psychology. 3 Hours.
This course examines how individuals behave in physical activity, exercise, and sport settings. Psychological antecedents and consequences of primary and secondary involvement in exercise, sport, and related physical activities will be introduced. Prerequisite: Honors standing and PSYC 2003. (Typically offered: Fall) This course is equivalent to EXSC 4783

\section*{EXSC 4833. Exercise Applications for Special Populations. 3 Hours.}

The study of the effects of exercise, exercise training, and other stressors in special groups. A detailed study of the biomechanical and physiological effects of exercise on the elderly, the diabetic, the post-coronary, and the individual with functional limitations. Prerequisite: EXSC 3353, EXSC 3153, EXSC 3533, and EXSC 4323. (Typically offered: Fall and Spring)

EXSC 4833H. Honors Exercise Applications for Special Populations. 3 Hours. The study of the effects of exercise, exercise training, and other stressors in special groups. A detailed study of the biomechanical and physiological effects of exercise on the elderly, the diabetic, the post-coronary, and the individual with functional limitations. Prerequisite: EXSC 3353, EXSC 3153, EXSC 3533, EXSC 4323 and honors standing. (Typically offered: Fall and Spring)
This course is equivalent to EXSC 4833.
EXSC 4903. Internship in Exercise Science. 3 Hours.
Provides opportunities for students in Exercise Science to gain experience in clinics, hospitals, fitness centers, athletic training facilities or related settings. Preor Corequisite: EXSC 3533. Prerequisite: EXSC 3353 and EXSC 3153. (Typically offered: Fall, Spring and Summer)

EXSC 498VH. Exercise Science Honors Thesis/Project. 1-3 Hour.
Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, EXSCBS, KINSBS, or PHEDBS major, and KINS 3901H or EXSC 3723H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

EXSC 5023. Advanced Teaching in Exercise Science. 3 Hours.
Examination and practical exposure to the principles and practices of undergraduate teaching in exercise science. Includes course planning, teaching techniques, assessment strategies, and supervised practice. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

EXSC 5323. Biomechanics I. 3 Hours.
Intended to serve as in introduction to biomechanics and focuses on scientific principles involved in understanding and analyzing human motion. (Typically offered: Fall)

EXSC 5333. Instrumentation in Biomechanics. 3 Hours.
The application of knowledge and skills necessary for data collection for sports analysis. Provides valuable information on instrumentation used specifically in biomechanics. Prerequisite: EXSC 5323. (Typically offered: Irregular)

\section*{EXSC 5353. Exercise Psychology. 3 Hours.}

Exercise Psychology is a lecture and discussion format for students interested in learning about theoretical and research information related to exercise adherence. (Typically offered: Fall)

\section*{EXSC 5453. Physical Activity and Health. 3 Hours.}

The course is designed to give graduate students from a variety of disciplines a broad introduction to the role of physical activity and how it affects the public's health across the lifespan. Throughout the semester, we will cover topics such as the current recommendations for physical activity, the beneficial effects of physical activity on various health-related outcomes, determinants of physical activity, how to measure physical activity at both the individual and population levels, and strategies used to promote physical activity. Graduate students within all areas of exercise science, public health and disciplines outside of public health (e.g., education, healthcare, social work, and psychology) could benefit from this course at the Masters or Doctoral level. Students will complete a physical activity research project in their field of study and review both historical and current literature. (Typically offered: Irregular)

EXSC 5463. Promoting Physical Activity in the Community. 3 Hours.
This course will give students in the area of public health or physical activity the opportunity to survey community physical activity interventions in diverse settings and populations (i.e. workplaces, schools, urban planning, children). The course will examine evidence-based strategies to promote physical activity, and students will apply program planning and physical activity evaluation skills in the field of physical activity. (Typically offered: Fall)

\section*{EXSC 5513. Physiology Exercise I. 3 Hours.}

A study of the foundation literature in exercise physiology. Emphasis is placed on the muscular, cardiovascular, and respiratory systems. (Typically offered: Fall)

EXSC 5523. Muscle Metabolism in Exercise. 3 Hours.
A study of the metabolic changes that occur in muscle as a result of exercise, exercise training, and other stressors. Prerequisite: EXSC 5513 or equivalent. (Typically offered: Spring)

EXSC 5533. Cardiac Rehabilitation Program. 3 Hours.
An examination of the concepts, design, and implementation of cardiac rehabilitation programs. Emphasis on exercise programs but reference to nutrition, psychology, and other lifestyle interventions. (Typically offered: Spring Even Years)

EXSC 5543. Cardiovascular Function in Exercise. 3 Hours.
Study of the effects of exercise training and other stressors on the cardiovascular system. Detailed study of the components of the cardiovascular system and the responses and adaptations of those components to selected stimuli. Corequisite: EXSC 5513 or equivalent. (Typically offered: Fall Even Years)

EXSC 5593. Advanced Exercise Testing and Prescription. 3 Hours. Practical experience in testing physical fitness utilizing laboratory equipment. Objective is to quantify physiological parameters, leading to the individualized exercise prescription. (Typically offered: Fall and Summer)

\section*{EXSC 5613. Physical Dimensions of Aging. 3 Hours.}

This course will focus on the physiological changes with healthy aging, pathophysiology of age-related diseases, testing issues, exercise interventions, and the psychosocial aspects of aging. Prerequisite: EXSC 5513. (Typically offered: Spring Odd Years)

EXSC 5643. Advanced Psychology of Sports Injury and Rehabilitation. 3 Hours.
The purpose of this course is to explore and discuss factors related to the psychological aspects of athletic injuries. These factors include the sociocultural, mental, emotional, and physical dimensions of injury rehabilitation. (Typically offered: Spring)

EXSC 5773. Performance and Drugs. 3 Hours.
The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. (Typically offered: Spring)

EXSC 6313. Muscle Physiology. 3 Hours.
To expand the student's knowledge of the skeletal muscle form and function. Specifically, how muscle is formed to how it can adapt as a post-mitotic tissue. This course will focus on the morphological, physiological, cellular, and molecular factors that affect skeletal muscle form and function. (Typically offered: Fall Even Years)

\section*{EXSC 6343. Physiology of Exercise II. 3 Hours.}

Detailed study of the body systems affected by exercise, the functions of these systems during exercise, the effects of age, sex, body type, and nutrition on capacity for exercise, the techniques of assessing work capacity, and a critical analysis of research literature in this area. (Typically offered: Irregular)

EXSC 6443. Thermoregulation and Fluid Balance. 3 Hours.
Comprehensive overview of human thermoregulatory responses to exercise in heat and cold. (Typically offered: Spring Even Years)

\section*{Extension Education (EXED) Courses}

\section*{EXED 475V. Internship in Extension. 1-6 Hour.}

A supervised practical work experience in Cooperative Extension which is designed to give the student an insight into the role of Extension employees and an opportunity to gain professional competence in this area. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is cross-listed with ACOM 475V, AGLE 475V, ASTM 475V.

\section*{Finance (FINN)}

\section*{Courses}

\section*{FINN 1003. Your Money and Credit. 3 Hours.}

Introduction to personal finance. Topics include building wealth, do's and don'ts of credit, car and home ownership. Lectures on theory and concepts; 'learning from the masters' video on best practices; financial simulations and case exercises. (Typically offered: Fall, Spring and Summer)

FINN 2043. Principles of Finance. 3 Hours.
Introduction to the financial system and financial management. Addresses the role and functions of financial intermediaries and markets for fixed income and equity securities; understand how interest rates are determined and assets valued; learn how firms effectively manage financial resources and create value through investment and financing decisions. Prerequisite: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of \(C\) or better. (Typically offered: Spring)

FINN 2043H. Honors Principles of Finance. 3 Hours.
Introduction to the financial system and financial management. Addresses the role and functions of financial intermediaries and markets for fixed income and equity securities; understand how interest rates are determined and assets valued; learn how firms effectively manage financial resources and create value through investment and financing decisions. Prerequisite: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of \(C\) or better and honors standing. (Typically offered: Spring)
This course is equivalent to FINN 2043.
FINN 3003. Personal Financial Management. 3 Hours.
Topics covered include budgeting, financial planning, managing credit, taxes, insurance, investments, and retirement planning. (Typically offered: Fall and Spring)

\section*{FINN 3013. Financial Analysis. 3 Hours.}

Focuses on how information contained in financial statements can be used in financial decision-making; in particular, to assess financial performance, evaluate credit and default risk, forecast future funds needs, weigh the risk-reward of debt vs. equity financing, and develop estimates of intrinsic value using relative valuation metrics and discounted cash flow methods. Prerequisite: FINN 2043 or FINN 3043. (Typically offered: Fall, Spring and Summer)

\section*{FINN 3053. Financial Markets and Institutions. 3 Hours.}

Role and operations of financial markets and institutions in the economy. Supply of, demand for, funds, interest rates and flow of funds analysis. Financial policies, practices of bank and nonbank financial institutions. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. (Typically offered: Fall, Spring and Summer)

\section*{FINN 3063. Investments. 3 Hours.}

Introduction to basic investment concepts including: risk-return and meanvariance efficient frontiers, diversification and the pricing of risk, security valuation. Corequisite: FINN 3013. Prerequisite: FINN 2043 or FINN 3043. (Typically offered: Fall, Spring and Summer)

\section*{FINN 3103. Financial Modeling. 3 Hours.}

Develop strong computer skills in financial analysis by integrating conceptual material with spreadsheet-based numerical solution and simulation techniques. Prerequisite: FINN 2043 or FINN 3043. (Typically offered: Fall, Spring and Summer)

\section*{FINN 3133. Commercial Banking. 3 Hours.}

Commercial bank administration, management; loans; bond portfolios; credit analysis; public relations; analysis and interpretations of Federal Reserve regulations and publications. Prerequisite: FINN 2043 or FINN 3043. (Typically offered: Fall and Spring)

FINN 3163. Fixed Income Securities I. 3 Hours.
The markets and institutional settings of fixed income securities; valuation and risk analysis of money market and capital market instruments; strategies and management of bond portfolios; taxable and tax-exempt securities; U.S. and non-U.S. fixed income securities; term structure of interest rate; and interest rate derivatives as hedging tools. Corequisite: FINN 3103 and FINN 3063. Prerequisite: Departmental consent. (Typically offered: Fall)

FINN 3173. Fixed Income Securities II. 3 Hours.
Continuation of FINN 3163. The markets and institutional settings of fixed income securities; valuation, and risk analysis of money market and capital market instruments; strategies and management of bond portfolios; taxable and tax-exempt securities; U.S. and non-U.S. fixed income securities; term structure of interest rate; and interest rate derivatives as hedging tools. Prerequisite: FINN 3163. (Typically offered: Spring)

\section*{FINN 330V. Finance Study Abroad. 1-3 Hour.}

Providing a balance of theory and practical application, this course provides students with study abroad experiences in finance addressing strategic and operational processes within the global context by understanding international financial systems, culture, geography, history, and politics of other countries. Prerequisite: Departmental consent, completion of 30 hours, ENGL 1013, (MATH 2053 or MATH 2554), ECON 2013, ECON 2023, ISYS 1123, BUSI 1111 and ACCT 2013. (Typically offered: Summer)

\section*{FINN 330VH. Honors Finance Study Abroad. 1-3 Hour.}

Providing a balance of theory and practical application, this course provides students with study abroad experiences in finance addressing strategic and operational processes within the global context by understanding international financial systems, culture, geography, history, and politics of other countries. Prerequisite: Departmental consent, completion of 30 hours, ENGL 1013, (MATH 2053 or MATH 2554), ECON 2013, ECON 2023, ISYS 1123, BUSI 1111, ACCT 2013 and honors standing. (Typically offered: Summer)
This course is equivalent to FINN 330V.

FINN 3603. Corporate Finance. 3 Hours.
Develop analytical competencies in financial planning, cost of capital estimation, application of discounted cash flow approach to valuation and capital allocation, lease analysis, evaluation of merger and organizational restructuring strategies. Prerequisite: (FINN 2043 or FINN 3043) and FINN 3013. (Typically offered: Fall, Spring and Summer)

\section*{FINN 3623. Risk Management. 3 Hours.}

A survey of the extent and types of risk in business; ways of dealing with business risk; use of security and commodity exchanges; survey of insurance for risk bearing purposes. (Typically offered: Fall and Spring)

FINN 3703. International Finance. 3 Hours.
Introduction to international financial markets, exchange rates and exchange rate determination, balance of trade measures, and vehicles for foreign trade financing. (Typically offered: Fall, Spring and Summer)

\section*{FINN 3933. Real Estate Principles. 3 Hours.}

Comprehensive, covering economics of real estate, real estate value, real estate finance, rights in real property and their transfer, public programs, policies relating to real property. (Typically offered: Fall and Spring)

\section*{FINN 4003H. Honors Finance Colloquium. 3 Hours.}

Explores important concepts, significant events and/or new developments in the field of Finance. Prerequisite: Senior standing. (Typically offered: Fall)

FINN 4013. Seminar in Personal Financial Planning. 3 Hours.
Explores financial planning function, including contact, data acquisition, plan development and implementation; covers all areas of personal financial planning including investments, insurance, taxes, and estate planning; addresses planning techniques and financial planning ethical issues; emphasis on case studies. Preor Corequisite: FINN 4733. Prerequisite: FINN 3003, FINN 3063, FINN 3623, and ACCT 3843. (Typically offered: Spring)

FINN 410V. Special Topics in Finance. 1-6 Hour.
Explore current events, new developments and special topics in Finance not covered in other courses. Prerequisite: FINN 2043. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{FINN 4123. Valuing New Ventures. 3 Hours.}

Valuation methods of entrepreneurial, early-stage, and R\&D finance, including term sheets, valuing full and partial stakes, preferred and participating convertible preferred stock, options, later-round investments, complex structures, R\&D finance, monte carl simulation, real options, binomial trees, and game theory. Prerequisite: Junior Standing. (Typically offered: Fall, Spring and Summer)

\section*{FINN 4133. Advanced Investments. 3 Hours.}

Sound training in the principles of security analysis and portfolio management and certain advanced techniques of financial management. Modern portfolio theory and its application to portfolio management practices will be emphasized. Prerequisite: FINN 3063. (Typically offered: Fall and Spring)

\section*{FINN 4143. Portfolio Management I. 3 Hours.}

This course applies modern investment theory to the practical management of the Rebsament Trust. Students prepare a statement of investment objectives, recommend an asset allocation strategy based on a quantitative analysis of asset class returns, and select securities using fundamental analysis. Classes are organized as management meetings and visits to investment firms are an important part of the class. Application, interview and instructor approval are required. Corequisite: FINN 3063 and ACCT 3723. Prerequisite: Departmental consent. (Typically offered: Fall)

\section*{FINN 4153. Portfolio Management II. 3 Hours.}

This course is a continuation of FINN 4143. Topics covered include technical analysis, dynamic asset allocation and derivative strategies. Visits to major investments firms and organized exchanges in New York City or other locations are generally planned. Selection is by invitation. Prerequisite: FINN 4143 and by invitation only. (Typically offered: Spring)

FINN 4163. Advanced Financial Modeling. 3 Hours.
The course applies Business Intelligence (BI), Cloud, Artificial Intelligent (AI) tools to business data for financial analysis and modeling. Data handling and modeling make use of the latest BI platforms such as Microsoft Power BI and Tableau. Prerequisite:
FINN 3013 or FINN 3103. (Typically offered: Fall, Spring and Summer)

\section*{FINN 4173. Energy Finance. 3 Hours.}

This course is as a comprehensive introduction to the field of Energy Finance, i.e., the application of Finance principles to energy, energy-service, and related industries. Topics covered include: (1) physical fossil fuel markets; (2) physical electricity markets; (3) financially traded energy products; and (4) credit, counterparty, and country risk. Pre- or Corequisite: ACCT 3723. Prerequisite: FINN 3013 and (FINN 2043 or FINN 3043). (Typically offered: Fall and Spring)

\section*{FINN 4233. Advanced Corporate Finance. 3 Hours.}

Addresses complex and multifaceted issues and problems in financial decisionmaking. Prerequisite: FINN 3603. (Typically offered: Irregular)

\section*{FINN 4243. New Venture Finance. 3 Hours.}

Explores early-stage funding sources and the startup ecosystem, due diligence when seeking funding, and the issues that arise about governance and control when seeking funding, including a deep dive into term sheets and capitalization tables. Prerequisite: Junior Standing. (Typically offered: Fall, Spring and Summer)

\section*{FINN 4313. Advanced Commercial Banking. 3 Hours.}

Problems and cases emphasizing application of analytical tools and techniques in commercial bank risk measurement and management. Evaluation of small business credit risk; analysis of liquidity, capital, and interest rate risk; stress testing; hedging risk with derivatives. Prerequisite: FINN 3133. (Typically offered: Spring)

\section*{FINN 4323. Financial Data Analytics I. 3 Hours.}

This course provides students with a broad understanding of: the general principles and techniques of advanced programming languages; familiarity with its applications to financial data warehousing and extraction; competency and proficiency in its use in processing, analyzing, and visualization of data; and the development, implementation, and evaluation of algorithmic strategies. Prerequisite: FINN 3013 or FINN 3103. (Typically offered: Fall, Spring and Summer)

\section*{FINN 4333. Financial Data Analytics II. 3 Hours.}

This course provides an in-depth study of financial data analysis and emphasizes popular financial models and trading strategies. We will particularly emphasize the use of quantitative methods and data-driven approaches in backtesting and analyzing the risk/return tradeoff of financial models and trading strategies. Prerequisite: FINN 4323. (Typically offered: Fall, Spring and Summer)

\section*{FINN 4413. Real Estate Appraisal. 3 Hours.}

Valuation theories applied to real estate. Characteristics which affect value are studied and valuation methodologies are learned and performed by the students. Focus is on residential real estate but all types of real estate are addressed. Students prepare in actual residential appraisal report. Prerequisite: FINN 3933. (Typically offered: Fall)

\section*{FINN 4433. Real Estate Finance and Investment. 3 Hours.}

Consideration of professional aspects of the real estate field. Emphasis is placed upon finance techniques and investment analysis. The focus is on commercial real estate. Brokerage, property management, appraisal, property development and current problems are also addressed. Students prepare a feasibly study on a commercial development project. Corequisite: FINN 3103. Prerequisite: FINN 3933. (Typically offered: Spring)
FINN 450V. Independent Study. 1-3 Hour.
Permits students on an individual basis to explore selected topics in finance, with the consent of instructor. (Typically offered: Irregular)
FINN 4733. Life and Health Insurance I. 3 Hours.
Basic principles, functions, uses of life and health insurance; types of policy contracts; calculation of premiums, reserves; organizations, management, supervision, of companies. (Typically offered: Fall)

\section*{FINN 4833. Property and Casualty Insurance I. 3 Hours.}

Forms and functions of fire, marine, inland marine, automobile title, miscellaneous types insurance and bonds for business, personal use. (Typically offered: Spring)
FINN 510V. Special Topics in Finance. 1-3 Hour.
Explore current events, concepts and new developments relevant to practitioners of Finance not available in other courses. Topics vary depending on the instructor. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

\section*{FINN 5113. Corporate Financial Management. 3 Hours.}

Financial analysis, planning and control; decision making and modeling for financial managers; and financial policies for management. (Typically offered: Spring)

\section*{FINN 5123. Valuing New Ventures. 3 Hours.}

This course is for students who wish to begin careers in valuing new ventures with VCs and Angel funds, for investors interested in new ventures as an asset class, for members of startup teams who focus on acquiring and managing capital, and for R\&D and innovation teams within existing large firms. The course will also add valuable techniques to those performing private equity valuations of growing firms or firms facing large strategic options, even if those firms are not technically startups. (Typically offered: Fall and Spring)

FINN 5133. Advanced Investments. 3 Hours.
Sound training in the principles of security analysis and portfolio management and certain advanced techniques of financial management. Modern portfolio theory and its application to portfolio management practices will be emphasized. Graduate degree credit will not be given for both FINN 4133 and FINN 5133. Prerequisite: FINN 3063. (Typically offered: Fall and Spring)

\section*{FINN 5173. Energy Finance and Risk Management. 3 Hours.}

This course provides an advanced introduction to energy finance, defined as the application of finance principles to energy, energy service, and related industries, concerning all aspects of the energy value chain. Topics include: (1) physical fossil fuel markets; (2) physical electricity markets; (3) financially traded energy products; and (4) credit, counterpart, country, and enterprise risk. It also introduces students to business valuation and investment banking applications in the energy industry vertical. Prerequisite: FINN 5113 or FINN 5223. (Typically offered: Fall)

FINN 5213. New Venture Finance. 3 Hours.
The course is a deep dive into the legal contracting and governance issues around early stage financing. This course provides students with exposure to the startup finance ecosystem. Students will learn about the forms of early stage funding and the players offering those funding sources, how to prepare for due diligence when seeking funding, and the issues that arise about governance and control when seeking funding. (Typically offered: Irregular)

FINN 5223. Financial Markets \& Valuation. 3 Hours.
Analysis of financial information by capital markets in the determination of security values with specific applications to retail and logistics companies. This course views these and other companies from the point of view of the capital markets. (Typically offered: Spring) May be repeated for degree credit.

\section*{FINN 5233. Advanced Corporate Finance. 3 Hours.}

Addresses complex and multifaceted issues and problems in financial decisionmaking. Graduate degree credit will not be given for both FINN 4233 and FINN 5233. Prerequisite: FINN 3603. (Typically offered: Irregular)

FINN 5243. Digital Innovation in Financial Markets. 3 Hours.
The evolving role and operations of financial markets and institutions in an increasingly digital-oriented economy. The impact of technological innovations such as blockchain, nonbank financial technology firms, and machine learning on markets as it relates to investors, firms raising capital, and financial entrepreneurs. (Typically offered: Irregular)

FINN 5303. Advanced Corporate Financial Management. 3 Hours.
Focus on financial policy issues using real situational cases. Topics include cost of capital, capital budgeting and long-term planning, value-based management, real options, as well as project financing and valuation. Prerequisite: FINN 5223. (Typically offered: Irregular)

\section*{FINN 5313. Advanced Commercial Banking. 3 Hours.}

This course focuses on advanced risk management strategies commonly implemented at regional and large commercial banks. Topics include financial statement analysis of banks and holding companies, credit analysis of global cash flow, Basel III capital requirements and stress testing, interest rate risk measurement and management, and interest rate hedging with derivatives. (Typically offered: Fall and Spring)

\section*{FINN 5323. Financial Data Analytics I. 3 Hours.}

This course introduces programming for financial data analysis, data representation and visualization using a modern programming language. The objective is to provide students a broad understanding of (1) the general principles and techniques of programming, (2) familiar with financial data and manipulation, (3) financial data processing, analyzing and visualization and (4) the computational applications of in financial data. The course concludes with a project in which students apply their knowledge to implement and evaluate an algorithmic trading strategy. (Typically offered: Fall and Spring)

FINN 5333. Investment Theory and Management. 3 Hours.
Integration of theory, practice of investments with solution of individual and institutional portfolio management problems; Institute of Chartered Financial Analysts' Problems; variable annuity in estate planning. Prerequisite: FINN 5223. (Typically offered: Fall)

\section*{FINN 541V. Shollmier Investment Project. 1-3 Hour.}

Provide students with the opportunity to design and apply complex investment strategies used in institutional portfolio management on the Shollmier MBA Fund that can involve fixed income and equity securities as well as derivatives. Students will use top down asset allocation models, bottom up security selection, and hedge fund strategies. Prerequisite: FINN 5223 and FINN 5333. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

\section*{FINN 5433. Real Estate Finance and Investment. 3 Hours.}

Consideration of professional aspects of the real estate field. Emphasis is placed upon finance techniques and investment analysis. The focus is on commercial real estate. Brokerage, property management, appraisal, property development and current problems are also addressed. Students prepare a feasibly study on a commercial development project. Graduate degree credit will not be given for both FINN 4433 and FINN 5433. Prerequisite: FINN 3933. (Typically offered: Spring)

\section*{FINN 5453. Advanced Financial Modeling. 3 Hours.}

The course applies Business Intelligence (BI), Cloud, Artificial Intelligent (AI) tools to business data for financial analysis and modeling. Data handling and modeling make use of the latest BI platforms such as Microsoft Power BI and Tableau. (Typically offered: Fall and Spring)
FINN 550V. Independent Study. 1-3 Hour.
Permits students on an individual basis to explore selected topics in finance, with the consent of instructor. Graduate degree credit will not be given for both FINN 450V and FINN 550V. (Typically offered: Irregular)

FINN 6043. Finance Theory. 3 Hours.
Provides a conceptual understanding of key theoretical developments in the field of financial economics, including firm decisions under risk within a world of uncertainty. (Typically offered: Irregular)

FINN 6133. Seminar in Investment Theory. 3 Hours.
Study advanced literature in field investments, with special reference to theory of random walks, stock valuation models, portfolio management. (Typically offered: Spring)

FINN 6233. Seminar in Financial Management. 3 Hours.
Financial management of firm with emphasis on financial theory or firm, quantitative methods used in financial analysis, planning. (Typically offered: Irregular)

\section*{FINN 6333. Empirical Research in Finance. 3 Hours.}

A study of recent empirically based research in finance. (Typically offered: Irregular)
FINN 6733. Seminar in Financial Markets and Institutions. 3 Hours.
Recent developments in the literature of financial markets and institutions. Participants will be involved in the extensive study of existing theories and empirical tests of the theories. (Typically offered: Irregular)
FINN 683V. Contemporary Issues in Doctoral Colloquium. 1-3 Hour. To explore and evaluate contemporary research issues in finance. Course content to reflect the most recent developments in theory and empirical research methodologies. Prerequisite: Doctoral student status and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.
FINN 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{Food Science (FDSC) Courses}

FDSC 1011. Exploring Topics in Food Science. 1 Hour.
Introduces the depth and scope of Food Science as a profession. This course emphasizes the importance of science in processing and preservation of food and discusses current topics and issues. Practical information on food processing, composition, additives, labeling, environmental issues, regulations, safety, sensory analysis, and health benefits will be provided. Curriculum offerings in Food Science will be related to job responsibilities as a Food Scientist. Lecture/discussions, 2 hours per week for 8 weeks. (Typically offered: Fall)
FDSC 1103. Introduction to Food Science. 3 Hours.
This course is designed to provide students with a general application and understanding of current issues associated with food products and food ingredients. Discussions will focus on controversial subjects involving food products, food additives, food safety and preservation techniques based on scientific principles and popular belief. Lecture/discussions/demonstrations, 3 hours per week. (Typically offered: Spring)

\section*{FDSC 2201. The Science of Chocolate. 1 Hour.}

The objective of this course is to introduce you to the science and technology of chocolate production. You will learn the history, chemistry, and physics of chocolate. This course will provide you with an understanding of chocolate production steps, including cacao bean harvesting, fermentation, drying, roasting, grinding, and manufacturing, and how these unit operations affect chocolate texture and flavor. Special focus will be given to fat and sugar crystallization, sensory evaluation, and sustainability of chocolate production. (Typically offered: Spring)

\section*{FDSC 2201H. Honors The Science of Chocolate. 1 Hour.}

The objective of this course is to introduce you to the science and technology of chocolate production. You will learn the history, chemistry, and physics of chocolate. This course will provide you with an understanding of chocolate production steps, including cacao bean harvesting, fermentation, drying, roasting, grinding, and manufacturing, and how these unit operations affect chocolate texture and flavor. Special focus will be given to fat and sugar crystallization, sensory evaluation, and sustainability of chocolate production. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to FDSC 2201.

FDSC 2401. Uncorked: Vines to Wines. 1 Hour.
This introductory course is designed to provide students with an understanding of the basic concepts of growing grapes and winemaking, including history, grape growing, cultivars, chemistry, wine microorganisms, fermentation, winery operations, wine marketing, and the sensory and appreciation of wine. Coursework is expected to integrate lecture and guest presenters with supplement reading assignments. This course will not include wine tasting, therefore there are no age restrictions for enrollment. (Typically offered: Fall)

FDSC 2401H. Honors Uncorked: Vines to Wines. 1 Hour.
This introductory course is designed to provide students with an understanding of the basic concepts of growing grapes and winemaking, including history, grape growing, cultivars, chemistry, wine microorganisms, fermentation, winery operations, wine marketing, and the sensory and appreciation of wine. Coursework is expected to integrate lecture and guest presenters with supplement reading assignments. This course will not include wine tasting, therefore there are no age restrictions for enrollment. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to FDSC 2401.
FDSC 2523. Sanitation and Safety in Food Processing Operations. 3 Hours.
Topics covered will provide an understanding of the control of microbial, chemical, and physical food hazards as well as emerging food safety issues. Course will include a discussion of sanitation, cleaners and sanitizers, sanitary equipment and facility designs, and microbial growth and control in food processing operations. Lecture/discussion. (Typically offered: Spring)

\section*{FDSC 2603. The Science of Cooking. 3 Hours}

In recent years science has found its way into the kitchen and cooking into laboratories and food processing plants. This course is designed to integrate science and cooking to help students appreciate the chemical and physical properties of foods and understand how the processes used when handling, preparing, and storing foods affect these properties. (Typically offered: Fall)

\section*{FDSC 2701. Food for Health. 1 Hour.}

The course is designed for students interested in how foods affect one's health. This course provides students with a background of functional food that will enable them to understand, discuss, and evaluate functionality of food in relation to health. This class is designed to appeal to students studying food science, nutrition, biology, chemistry, nursing, and health and human performance. (Typically offered: Spring)

FDSC 2723. Introduction to Brewing Science. 3 Hours.
An introduction to the biology and chemistry of fermentation, with an emphasis on beer brewing. Styles, flavors, and quality characteristics of beer will be discussed The history, legal aspects, and economic impacts of homebrewing as well as craft and industrial brewing will be covered. Coursework is expected to integrate lectures and guest presenters with supplemental reading assignments. This course will not include beer tasting, therefore there are no age restrictions for enrollment. Prerequisite: (CHEM 1123 or CHEM 1073) and (BIOL 1543 or BIOL 1584). (Typically offered: Spring)

\section*{FDSC 3103. Principles of Food Processing. 3 Hours.}

The course is designed as an overview of the unit; food processing operations common to all types of food processing plants. Examples will be drawn from international food processing operations processing fruits and vegetables, poultry and meats, and oil seeds and cereal grains. Emphasis on oral communication and critical thinking skills. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L and (MATH 2043 or MATH 2554). (Typically offered: Fall)

FDSC 3202. Introduction to Food Law. 2 Hours.
Discussion of government laws and regulations affecting the manufacture of food. Emphasis is on federal regulations relating to food safety, labeling, and the FDA. Discussion relates to practical use of food law. Lecture 2 hours per week. (Typically offered: Spring)

FDSC 3202H. Honors Introduction to Food Law. 2 Hours.
Discussion of government laws and regulations affecting the manufacture of food.
Emphasis is on federal regulations relating to food safety, labeling, and the FDA.
Discussion relates to practical use of food law. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to FDSC 3202
FDSC 400V. Special Problems. 1-4 Hour.
Investigation of assigned problems in food science. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)

FDSC 4111L. Food Analysis Lab. 1 Hour.
Laboratory exercises providing students with experience of analytical techniques and instrumentation used in food analysis. Laboratory 3 hours per week. Corequisite:
FDSC 4113. Prerequisite: FDSC 4304 and CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Spring)

\section*{FDSC 4113. Food Analysis. 3 Hours.}

Methods of analysis, instrumentation, and laboratory techniques for measuring the chemical composition of raw and value-added products. Lecture 3 hours.
Corequisite: FDSC 4111L. Prerequisite: FDSC 4304 and CHEM 1123 and
CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Spring)

FDSC 4121L. Food Microbiology Lab. 1 Hour.
A hands-on laboratory course designed to teach students microbiological techniques and certain enumeration and plating techniques of specific food spoilage and pathogenic bacteria. Prerequisite: BIOL 2013 and BIOL 2011L. Pre- or Corequisite: FDSC 4122. (Typically offered: Fall)

FDSC 4122. Food Microbiology. 2 Hours.
The study of food microbiology including classification/ taxonomy, contamination, preservation and spoilage of different kinds of foods, pathogenic microorganisms, food poisoning, sanitation, control and inspection and beneficial uses of microorganisms. Prerequisite: BIOL 2013 and BIOL 2011L or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with BIOL 4122.
FDSC 4304. Food Chemistry. 4 Hours.
Water, carbohydrates, lipids, proteins, vitamins, and minerals in foods; biochemical and functional properties, enzymes, food additives (emulsifiers, pigments, colors, flavors, preservatives, and sweeteners) and texture as related to properties in food systems and during processing. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Fall)

\section*{FDSC 431V. Internship in Food Science. 1-4 Hour.}

The Food Science Internship is a supervised practical work experience with a food industry, research program or governmental agency to gain professional experience and insight into career opportunities. Prerequisite: Junior standing and consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{FDSC 4413. Sensory Evaluation of Food. 3 Hours.}

Principles and procedures for sensory evaluation of food. Appropriate uses of specific tests are discussed, along with physiological, psychological, and environmental factors affecting sensory verdicts. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: STAT 2303 or BUSI 1033 or STAT 2823 or PSYC 2013. (Typically offered: Fall)

\section*{FDSC 4513. Cereal Processing Technology. 3 Hours.}

Fundamental concepts of heat and mass transport in grains; cereal/grain structure, property and composition; cereal/grain processing systems and technology; cereal/ grain co-product processing technology and value recovery; cereal/grain quality metrics, grading standards and food safety assurance. Prerequisite: FDSC 3103 or FDSC 4754 or with instructor permission. (Typically offered: Spring Odd Years)

FDSC 4713. Product Innovation for the Food Scientist. 3 Hours.
This is a capstone course integrating knowledge developed in Food Science to the development of new food products. This course will take an integrated multidisciplinary approach to developing innovative food products and will provide learning experiences in new product development and Research \& Development. Topics include product formulation, ingredient interactions, sensory analysis, packaging, labeling, food safety and food law. Corequisite: Lab component. Preor Corequisite: FDSC 4113 and FDSC 4111L. Prerequisite: Senior standing, FDSC 4304, FDSC 3103, and FDSC 4413. (Typically offered: Spring)
FDSC 472V. Special Topics in Food Science. 1-4 Hour.
Discussion focused on selected topics of particular fields of raw product physiology, food processing, chemistry, physiology, microbiology, evaluation, sensory analysis, and preservation. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

\section*{FDSC 4754. Engineering Principles of Food Processing. 4 Hours.}

Basic mechanics of refrigeration, temperature controls, materials handling and mechanical problems as applied to foods and food processing. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 1213, MATH 2554, PHYS 2013, PHYS 2011L and FDSC 3103. (Typically offered: Spring)

\section*{FDSC 5001. Seminar. 1 Hour.}

Presentation and discussion of graduate student research. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 2 hours of degree credit.

\section*{FDSC 509V. Special Problems Research. 1-6 Hour.}

Original investigation on assigned problems in food science. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
FDSC 5111L. Food Analysis Lab. 1 Hour.
Laboratory exercises providing students with experience of analytical techniques and instrumentation used in food analysis. Laboratory 3 hours per week. Graduate degree credit will not be given for both FDSC 4111L and FDSC 5111L. Corequisite: FDSC 4113 or FDSC 5113 (formerly FDSC 4113). Prerequisite: FDSC 4304 or FDSC 5304 (formerly FDSC 4304) and CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Spring)

\section*{FDSC 5113. Food Analysis. 3 Hours.}

Methods of analysis, instrumentation, and laboratory techniques for measuring the chemical composition of raw and value-added products. Lecture 3 hours. Graduate degree credit will not be given for both FDSC 4113 and FDSC 5113. Corequisite: FDSC 4111L or FDSC 5111L (formerly FDSC 4111L). Prerequisite: FDSC 4304 or FDSC 5304 (formerly FDSC 4304) and CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Spring)

\section*{FDSC 5121L. Food Microbiology Lab. 1 Hour.}

A hands-on laboratory course designed to teach students microbiological techniques and certain enumeration and plating techniques of specific food spoilage and pathogenic bacteria. Graduate degree credit will not be given for both FDSC 4121L and FDSC 5121L. Prerequisite: BIOL 2013 and BIOL 2011L. Pre- or Corequisite: FDSC 4122 or FDSC 5122 (formerly FDSC 4122). (Typically offered: Fall)

\section*{FDSC 5122. Food Microbiology. 2 Hours.}

The study of food microbiology including classification/taxonomy, contamination, preservation and spoilage of different kinds of foods, pathogenic microorganisms, food poisoning, sanitation, control and inspection and beneficial uses of microorganisms. Graduate degree credit will not be given for both FDSC 4122 and FDSC 5122. Prerequisite: BIOL 2013 and BIOL 2011L or BIOL 2533. (Typically offered: Fall)

\section*{FDSC 5223. Food Biosecurity. 3 Hours.}

This course is the study of the security of agricultural products and the protection of our food supply from intentional and accidental, domestic and international contamination. Prerequisite: Graduate standing. (Typically offered: Fall Even Years)
FDSC 5304. Food Chemistry. 4 Hours.
Water, carbohydrates, lipids, proteins, vitamins, and minerals in foods; biochemical and functional properties, enzymes, food additives (emulsifiers, pigments, colors, flavors, preservatives, and sweeteners) and texture as related to properties in food systems and during processing. Lecture 3 hours, laboratory 3 hours per week. Graduate degree credit will not be given for both FDSC 4304 and FDSC 5304. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L). (Typically offered: Fall)

\section*{FDSC 5311. Food Science Internship. 1 Hour.}

The Food Science Internship is a supervised practical work experience with a food industry, research program or governmental agency to gain professional experience and insight into career opportunities. Graduate degree credit will not be given for both FDSC 4311 and FDSC 5311. Prerequisite: Completion of first year of graduate studies and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 2 hours of degree credit.

\section*{FDSC 5413. Sensory Evaluation of Food. 3 Hours.}

Principles and procedures for sensory evaluation of food. Appropriate uses of specific tests are discussed, along with physiological, psychological, and environmental factors affecting sensory verdicts. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both FDSC 4413 and FDSC 5413. Corequisite: Lab component. Prerequisite: STAT 2303 or BUSI 1033 or AGST 5023 or STAT 2823 or PSYC 2013. (Typically offered: Fall)

\section*{FDSC 5423. Foodborne Diseases. 3 Hours.}

This course will introduce students to the major pathogens associated with foodborne diseases, their epidemiology, and approaches to outbreak investigation and control of foodborne illness. An emphasis will be placed on understanding the relationships between the host, the etiologic agent, and the environment as they relate to disease causation. The student will gain knowledge through lectures, case studies, readings, and an individual project. An understanding of basic biology principles is expected for this course. (Typically offered: Summer Odd Years)

\section*{FDSC 5503. Safety and Sanitation for the Food Industry. 3 Hours.}

This web-based course will provide an appreciation of the need for sanitation in food processing and increase the students' knowledge of sanitary techniques. Topics will include contamination sources, plant and equipment design, cleaners and sanitizers, HACCP, and food biosecurity. Also covered will be considerations in selecting, establishing and maintaining a sanitation program. An understanding of general microbiology and chemistry principles is expected for this course. (Typically offered: Summer Even Years)

\section*{FDSC 5513. Cereal Processing Technology. 3 Hours.}

Fundamental concepts of heat and mass transport in grains; cereal/grain structure, property and composition; cereal/grain processing systems and technology; cereal/ grain co-product processing technology and value recovery; cereal/grain quality metrics, grading standards and food safety assurance. Prerequisite: FDSC 3103 or FDSC 4754 or instructor permission. (Typically offered: Spring Odd Years)

FDSC 5713. Product Innovation for the Food Scientist. 3 Hours.
This is a capstone course integrating knowledge developed in Food Science to the development of new food products. This course will take an integrated multidisciplinary approach to developing innovative food products and will provide learning experiences in new product development and Research \& Development. Topics include product formulation, ingredient interactions, sensory analysis, packaging, labeling, food safety and food law. Graduate degree credit will not be given for both FDSC 4713 and FDSC 5713. Corequisite: Lab component. Pre- or Corequisite: FDSC 4113 or FDSC 5113 (formerly FDSC 4113) and FDSC 4111L or FDSC 5111L (formerly FDSC 4111L). Prerequisite: FDSC 4304 or FDSC 5304 (formerly FDSC 4304), FDSC 3103, and FDSC 4413 or FDSC 5413 (formerly FDSC 4413). (Typically offered: Spring)

\section*{FDSC 5754. Engineering Principles of Food Processing. 4 Hours.}

Basic mechanics of refrigeration, temperature controls, materials handling and mechanical problems as applied to foods and food processing. Lecture 3 hours, laboratory 3 hours per week. Graduate degree credit will not be given for both FDSC 4754 and FDSC 5754. Corequisite: Lab component. Prerequisite: MATH 1213, PHYS 2013, and PHYS 2011L. (Typically offered: Spring Even Years)

FDSC 5823. Principles of Food Microbiology. 3 Hours.
This web-based course is a study of the fundamentals of food microbiology to include its history, classifications, spores and their importance, and the most common and serious pathogenic food microorganisms. Fermentation, spoilage microorganisms and control methodology are also discussed. (Typically offered: Fall Even Years)

FDSC 5993. Global Horticulture and Human Nutrition to Enhance Community Resilience and Food Security. 3 Hours.
This course covers three broad areas (Global Horticulture, Sustainable International Development, Human Health and Nutrition) and experts on three campuses created the instruction. The course is intended to be multi-disciplinary, and students should use their contextual knowledge to add to weekly discussions. Prerequisite: Graduate standing. (Typically offered: Spring Even Years)
This course is cross-listed with AGED 5993, HORT 5993.
FDSC 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

FDSC 602V. Special Topics. 1-3 Hour.
Discussions focused on selected topics of particular fields of raw product physiology and food processing. chemistry, physiology, microbiology, evaluation, sensory analysis and preservation. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{FDSC 6033. Food Biochemistry. 3 Hours.}

Biochemical characteristics, functions, regulation and impact of components in raw and processed foods of plant origin. Lecture/discussion 3 hours per week.
Prerequisite: CHEM 3813. (Typically offered: Fall Odd Years)
FDSC 6143. Advanced Food Processing and Packaging and their Environmental Impact. 3 Hours.
The course is directed to graduate students in food science and related fields. Students will learn advanced food processing technologies and packaging as well as the environmental issues associated to food production, processing, and distribution. An understanding of basic food processing/food engineering principles and knowledge of food processing operations is expected for this course. (Typically offered: Spring Even Years)

\section*{FDSC 6323. Nutraceuticals and Functional Foods. 3 Hours.}

Course will include past, present and future of nutraceuticals and functional foods, chemistry, mechanism, novel technologies, nutrigenomics, processing, healthy lifestyle, regulation, safety, marketing, international aspects, and industry project. Prerequisite: CHEM 2613 (or CHEM 3603) and CHEM 3813 and FDSC 4304 or instructor consent. (Typically offered: Spring Even Years)

\section*{FDSC 6343. Vitamin Nutrition and Metabolism. 3 Hours.}

The vitamins required for humans and domestic animals for a healthy life with emphasis on absorption, transport, metabolism, biopotency, mechanism of action, tissue retention and turnover. Prerequisite: CHEM 3813. (Typically offered: Fall Odd Years)
This course is cross-listed with ANSC 6343, POSC 6343.
FDSC 6403. Epidemiologic Principles in Food Safety and Public Health. 3 Hours.
This course will provide an introduction to epidemiologic methods used in foodborne disease outbreak investigations. The importance of surveillance systems in detecting outbreaks and in the development of effective disease prevention and control strategies will also be presented. An emphasis will be placed on understanding the relationships between the host, the etiologic agent, and the environment as they relate to disease causation. In addition, molecular methods utilized for the identification of etiologic agents will be discussed. Selected important foodborne diseases will be discussed in detail to clarify the role of epidemiology in understanding the pathogenesis of infectious processes in individuals and communities. Prerequisite: FDSC 4122 or FDSC 5122 (formerly FDSC 4122) or equivalent. (Typically offered: Fall Even Years)

\section*{FDSC 6443. Metabolism of Xenobiotics. 3 Hours.}

This course is designed to provide in-depth knowledge of the integration of molecular, cellular, and physiologic aspects of xenobiotics (e.g phytochemicals)/ micronutrients and metabolism. This course will also discuss the current understanding of the mechanism and regulation of gene expression by xenobiotics/ micronutrients. Examination of current research literature to understand how xenobiotics/micronutrients and physiological states metabolize and influence gene expression, as well as the research methodology used to address these relations. Prerequisite: CHEM 3813. (Typically offered: Fall Even Years)

FDSC 6603. Chemosensory Perception and Measurement. 3 Hours.
This course is designed to address advanced techniques and current issues in sensory and consumer sciences, with a focus on chemosensory perception. This course consists of two main modules: I) anatomy and physiology of the chemosensory senses and II) measurement/analysis of chemosensory responses. This course includes both individual and group projects with an emphasis of four aspects of "C": "Concept," "Creativity," "Critical thinking skills," and "Communication." Prerequisite: FDSC 4413 or FDSC 5413. (Typically offered: Fall Odd Years)

\section*{FDSC 700V. Doctoral Dissertation. 1-18 Hour.}

The doctoral program in food science is an interdepartmental program offered by the departments of Food Science, Animal and Poultry Sciences, and Human Environmental Sciences. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{French (FREN) \\ \section*{Courses}}

FREN 1003. Elementary French I (ACTS Equivalency = FREN 1013). 3 Hours. Elementary French I. (Typically offered: Fall and Spring)

FREN 1013. Elementary French II (ACTS Equivalency = FREN 1023). 3 Hours. Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Fall and Spring)

FREN 2003. Intermediate French I (ACTS Equivalency = FREN 2013). 3 Hours. Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall and Spring)

FREN 2013. Intermediate French II (ACTS Equivalency = FREN 2023). 3 Hours. Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Fall and Spring)

\section*{FREN 3003. Advanced French. 3 Hours.}

Further intensive practice for the purpose of strengthening written and oral expression. Includes a review of the essentials of French grammar. Prerequisite: FREN 2013 or equivalent. (Typically offered: Fall, Spring and Summer)

FREN 3103. Cultural Readings. 3 Hours.
A course designed to build vocabulary and to strengthen reading skills and oral expression through extensive practice with culturally authentic materials. Prerequisite: FREN 2013. (Typically offered: Spring)

FREN 3113. Introduction to Literature. 3 Hours.
Further development of reading skills and introduction to literacy commentary and analysis. Prerequisite: FREN 3003 or FREN 3103. (Typically offered: Spring)

FREN 3123. French Phonetics. 3 Hours.
Improves students' pronunciation of French while they acquire the basic rules of standardized spoken French. The course takes into account the major contrastive features of the sounds of French and English and addresses the particular challenges the native speaker of American English faces when learning to pronounce French. Prerequisite: FREN 3003. (Typically offered: Fall Even Years)

FREN 399VH. Honors French Course. 1-6 Hour.
Honors French. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

FREN 4003. French Grammar and Composition. 3 Hours.
French grammar and composition. Prerequisite: FREN 3003 or FREN 3103. (Typically offered: Fall)

FREN 4033. French for Oral Proficiency. 3 Hours.
Three hours per week of conversation practice for the advanced undergraduate. Prerequisite: FREN 3003 or FREN 3103. (Typically offered: Fall and Spring)

FREN 4113. Special Themes in French. 3 Hours.
Topics not normally covered in period courses. Sample topics: "The Comic Tradition in French Literature," "French Cinema." Topics announced one semester in advance. Prerequisite: FREN 3113. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

FREN 4213. French Civilization. 3 Hours.
French civilization. Prerequisite: FREN 3113. (Typically offered: Spring)
FREN 4223. Survey of French Literature I. 3 Hours.
A survey of French literature, its forms and themes from the medieval period through the 18th century. Prerequisite: FREN 3113. (Typically offered: Irregular)

FREN 4233. Survey of French Literature II. 3 Hours.
A survey of French literature, its forms and themes from the 19th and 20th centuries. Prerequisite: FREN 3113. (Typically offered: Irregular)
FREN 4243. Studies in Francophone Literature. 3 Hours.
Introduction to seminal writers from Francophone cultures, mainly Quebec, the Maghreb, and West Africa. Exploration of national identity, morality, religion, exile, and socio-political and cultural problems, while discovering recent trends in the globalization of Francophone literature. Prerequisite: FREN 3113. (Typically offered: Irregular)

FREN 4333. Introduction to Business French. 3 Hours.
Introduction and orientation to the French world of business and commerce through the study of vocabulary, forms, and formulas and expression used in commercial correspondence. Prerequisite: FREN 3113 or FREN 3103. (Typically offered: Irregular)

FREN 4433. Business Culture and Practices. 3 Hours.
A practical application of French to the business world focusing on the cultural challenges faced by Americans doing business in France and francophone countries. Case studies and translations of authentic documents from French to English and English to French reinforce the specialized vocabulary of the business world. Prerequisite: FREN 3103 or FREN 3113. (Typically offered: Irregular)

FREN 4663. French Short Story. 3 Hours.
Introduces the genre of the French Short Story, focusing on close readings and providing an overview of the most important literary movements from the Middle Ages to the twentieth century. Prerequisite: FREN 3113. (Typically offered: Irregular)

FREN 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{FREN 5003. French Grammar and Phonetics. 3 Hours.}

Systematic review of principles of French grammar and syntax; comprehensive presentation of French phonetics. (Typically offered: Irregular)

\section*{FREN 5333. Old French Literature. 3 Hours.}

An intensive study of French Medieval Literature from the Chansons de Geste to Villon, including an in-depth analysis of the genres and their evolution, and of the major authors of the times. (Typically offered: Irregular)

\section*{FREN 5353. Survey of French Poetry. 3 Hours.}

A comprehensive study of French poetry from the Middle Ages to the twentieth century, focusing on close readings of individual poems. This course will cover literary movements and trends of the periods and presents the terminology required to do explication de texte. (Typically offered: Irregular)

FREN 5433. French 16th-Century Literature. 3 Hours.
A survey of representative writers of the sixteenth century. (Typically offered: Irregular)

\section*{FREN 5543. French 17th-Century Literature. 3 Hours}

A survey of representative writers of the seventeenth century. (Typically offered: Irregular)

FREN 5673. French 18th-Century Literature. 3 Hours.
French 18th-Century literature. (Typically offered: Irregular)
FREN 5703. Special Topics. 3 Hours.
May be offered in a subject not specifically covered by the courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

FREN 575V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Irregular) May be repeated for degree credit.

FREN 5773. Survey of Francophone Literature. 3 Hours.
A survey of representative texts in the field of sub-Saharan and North African literature concentrating on postcolonial novels using contemporary critical approaches. (Typically offered: Irregular)

FREN 5783. The French Nineteenth-Century Novel. 3 Hours.
The French Nineteenth-Century novel. (Typically offered: Irregular)
FREN 5833. French 20th-Century Novel. 3 Hours.
French 20th-Century novel. (Typically offered: Irregular)

\section*{Gender Studies (GNST)}

\section*{Courses}

GNST 2003. Introduction to Gender Studies. 3 Hours.
This course explores cultural constructions of gender and sexuality using a variety of media, including literature, film, and architecture. (Typically offered: Fall and Spring)

GNST 2003H. Honors Introduction to Gender Studies. 3 Hours.
This course explores cultural constructions of gender and sexuality using a variety of media, including literature, film, and architecture. (Typically offered: Fall and Spring) This course is equivalent to GNST 2003.

GNST 2123. Gender, Bodies, and Technologies. 3 Hours.
Explores the relationship between gendered bodies and technology while engaging with theories of the body and its interactions/intersections with technology. Examines theories of power and technologies of self to better understand the relationship between gender, bodies, and technology. (Typically offered: Fall Odd Years)

\section*{GNST 2223. Race, Gender, and Sport. 3 Hours.}

Addresses the relationship between race, gender and sport by examining how sport gives meaning to racial and gender identity and the ways that sport works as a setting in which political struggles around race and gender are imagined and expressed. (Typically offered: Spring Odd Years)

GNST 2403. Dissecting Gender in Science. 3 Hours.
Examines the role of gender in science. Explores how perceptions of masculinity and femininity have been informed by science and how science's answers to questions of gender have been historically impaired by social understandings of gender. (Typically offered: Fall Odd Years)

GNST 3103. The Queer U.S. South. 3 Hours.
Presents queer perspectives on the U.S. South. Focuses on autobiographical, historical, and critical-qualitative analyses that attest to the innovative or inventive ways LGBTQ+ communities have survived and thrived in southern areas often deemed antithetical to a liberatory gender/sexual political agenda. (Typically offered: Spring Even Years)

\section*{GNST 3203. Gender and the Environment. 3 Hours.}

Explores how "gendered frames" animate public, technical, and private discourse about the environment. Conduct qualitative research about gender, the environment, and popular rhetoric. Emphasizes the application of decolonial theory, critical race theory, and queer theory to gender studies research in the environmental humanities. (Typically offered: Fall Even Years)

GNST 3213. Deflowering: Gender, Sexuality, and Plants in World Culture. 3 Hours.
Discusses the intersection of plants and gender, involving a variety of disciplines, including: literature, art, agriculture, history, anthropology, and botany. Explores connections between gender and plants and considers how our botanical understandings of plant sex/gender affect cultural knowledge of plants worldwide. (Typically offered: Spring Odd Years)
GNST 3303. Gender and Pop Culture. 3 Hours.
Introduces various mediums of popular culture and analyzes the role of gender, race, sexuality, class, and identity in these texts. Explores critical and rhetorical theories related to popular culture. (Typically offered: Fall and Summer)

GNST 3403. Gender, Sexuality, and Animality. 3 Hours.
Explores the long list of language and imagery tying women to animals using examples in marketing, film, art, and comic books. Examining the connections between women, animals, and oppression through an intersectional lens. (Typically offered: Fall Even Years)
GNST 4133. Italian Women from the Middle Ages to the Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with ITAL 4133, MRST 4133.
GNST 4223. Gender and Justice in the U.S.. 3 Hours.
Provide students with a historic and contemporary overview of the laws, policies, and politics surrounding gender, citizenship, and justice in the United States. Explores how law and public policy have affected the lives of marginalized sex and gender groups in the United States as well as the political dynamics surrounding gender and sexuality law. (Typically offered: Spring Even Years)
This course is cross-listed with PLSC 4223.

GNST 4333. Gender, Sexuality, and Archival Research. 3 Hours.
Studies in intersectional feminist, queer, and trans perspectives on archival research. Focuses on employing methodologies in a range of archival contexts, emphasizing the politics of archiving and the implicit gendered, racialized, and classbased biases that permeate archival inquiry. (Typically offered: Fall Odd Years)

GNST 4443. Queer Theor(ies). 3 Hours.
Introduction to the complex history and evolution of Queer Theory into Queer Theor(ies) from Foucault to the Present. (Typically offered: Irregular)
This course is equivalent to WLIT 4443.
GNST 490V. Independent Study. 1-6 Hour.
An exploration of gender studies topics studied independently with the supervision of a faculty member. Credit arranged with instructor. Prerequisite: GNST 2003 or GNST 2003H or instructor consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{GNST 4983. Special Topics in Gender Studies. 3 Hours.}

This course covers gender topics that are not usually offered in-depth in regularly offered courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

GNST 5133. The Power of Women: Representations of \& from Italian Women from Middle Ages to Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with ITAL 5133, MRST 5133.
GNST 5333. Gender, Sexuality, and Archival Research. 3 Hours.
Studies in intersectional feminist, queer, and trans perspectives on archival research. Focuses on employing methodologies in a range of archival contexts, emphasizing the politics of archiving and the implicit gendered, racialized, and classbased biases that permeate archival inquiry. (Typically offered: Fall Odd Years)

\section*{GNST 5443. Queer Theor(ies). 3 Hours.}

Introduction to the complex history and evolution of Queer Theory into Queer Theor(ies) from Foucault to the Present. (Typically offered: Irregular) This course is cross-listed with WLIT 5443.

\section*{GNST 5653. Feminist Texts and Theories. 3 Hours.}

Explores concepts and ideologies that articulate and define principles of feminism. Attention given to critical and creative works that challenge the centrality of gender in feminist analyses through intersections of race, class, nationality, and sexuality. (Typically offered: Fall Odd Years)
This course is cross-listed with COMM 5653.

\section*{General Engineering (GNEG)}

\section*{Courses}

GNEG 1103. Introduction to Engineering. 3 Hours.
This introductory course for first year engineering students introduces them to the fields of engineering and many of the modeling and problem solving techniques used by engineers. It also introduces the students to the engineering profession and some of the computer tools necessary for pursuing a degree in engineering. This course is designed for current and future transfer students. Freshman engineering students on campus should select GNEG 1201 or GNEG 1111 as appropriate. Pre- or Corequisite: MATH 1203 or MATH 1213 or MATH 1284C or MATH 2445 or MATH 2554 or MATH 2564 or MATH 2574 or MATH 2584 or MATH 3083 or MATH 2603. Corequisite: Engineering major. (Typically offered: Fall, Spring and Summer)

GNEG 1111. Introduction to Engineering I. 1 Hour.
Fundamentals of engineering problem-solving including skills from mathematics, science, and computing. Introduction to the engineering design process through team-based activities. Study of the contemporary engineering profession and the disciplines within the College of Engineering. Corequisite: Drill component and MATH 1284C or MATH 2445 or MATH 2554 or MATH 2564 or MATH 2574 or MATH 2584 or MATH 3083 or MATH 2603 or GNEG 1514. Prerequisite: Engineering First-Year, Exploring Engineering, or Engineering Transfer majors only. (Typically offered: Fall and Spring)

\section*{GNEG 1111H. Honors Introduction to Engineering I. 1 Hour.}

Fundamentals of engineering problem-solving including skills from mathematics, science, and computing. Introduction to the engineering design process through team-based activities. Study of the contemporary engineering profession and the disciplines within the College of Engineering. Corequisite: Drill component and MATH 1284C or MATH 2445 or MATH 2554 or MATH 2564 or MATH 2574 or MATH 2584 or MATH 3083 or MATH 2603 or GNEG 1514. Prerequisite: (Engineering First Year or Exploring Engineering majors) and Honors College students only. (Typically offered: Fall and Spring)
This course is equivalent to GNEG 1111.
GNEG 1121. Introduction to Engineering II. 1 Hour.
Further study of engineering problem-solving including skills from mathematics, science, and computing. Experience with the engineering design process through a major, team-based project. Selecting a major within the College of Engineering. Discussion of academic and professional opportunities for engineering students. Corequisite: Drill component and MATH 2445 or MATH 2554 or MATH 2564 or MATH 2574 or MATH 2584 or MATH 3083 or MATH 2603. Prerequisite: GNEG 1111 or GNEG 1111H or GNEG 1514 and Engineering First-Year or Exploring Engineering majors only. (Typically offered: Fall and Spring)

GNEG 1121H. Honors Introduction to Engineering II. 1 Hour.
Further study of engineering problem-solving including skills from mathematics, science, and computing. Experience with the engineering design process through a major, team-based project. Selecting a major within the College of Engineering. Discussion of academic and professional opportunities for engineering students. Corequisite: Drill component and MATH 2445 or MATH 2554 or MATH 2564 or MATH 2574 or MATH 2584 or MATH 3083 or MATH 2603. Prerequisite: (GNEG 1111H or GNEG 1111 or GNEG 1514), ((Engineering First-year or Exploring Engineering majors) and Honors College students only). (Typically offered: Fall and Spring)
This course is equivalent to GNEG 1121.
GNEG 1201. Fundamentals of Success in Engineering Study. 1 Hour.
Assisting Engineering First Year students in developing skills for successful completion of engineering course work. Building a supportive learning community, assisting students in developing positive attitudes and productive behaviors resulting in both academic and personal success, and informing students of the resources available for maintaining their academic and personal wellness. Corequisite: Drill component and MATH 1203 or MATH 1284C. Prerequisite: Engineering First-Year or Exploring Engineering students only. (Typically offered: Fall and Spring)

GNEG 1311H. Honors Research Experience I. 1 Hour.
An initial undergraduate research experience for a select group of Engineering First Year students enrolled in the Honors College. Corequisite: GNEG 1111H and MATH 2564 or MATH 2574 or MATH 2584 or MATH 3083 or MATH 2603. (Typically offered: Fall)

\section*{GNEG 1321H. Honors Research Experience II. 1 Hour.}

Continuation of GNEG 1311H culminating with the annual Freshman Engineering Program Honors Research Symposium. Pre- or Corequisite: MATH 2564.
Prerequisite: GNEG 1311H. (Typically offered: Spring)

GNEG 1411H. Honors Innovation Experience I. 1 Hour.
An initial undergraduate innovation experience for a select group of Engineering First Year students enrolled in the Honors College. Corequisite: GNEG 1111H and MATH 2564 or MATH 2574 or MATH 2584 or MATH 3083 or MATH 2603. (Typically offered: Fall)

GNEG 1421H. Honors Innovation Experience II. 1 Hour.
Continuation of GNEG 1411H. Pre- or Corequisite: MATH 2564. Prerequisite: GNEG 1411H and honors standing. (Typically offered: Spring)

GNEG 1600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)
GNEG 190V. Special Topics. 1-5 Hour.
Consideration of current engineering topics not covered in other courses.
Prerequisite: Instructor's consent. (Typically offered: Irregular)
GNEG 2600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{GNEG 3113. Special Topics-Study Abroad. 3 Hours.}

Students travel abroad to gain a global perspective on a particular facet of the engineering discipline. Students are required to complete pre-travel investigative or background assignments, participate in all activities of the actual trip and will produce a post travel reflective or comparative product relative to the special topic. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{GNEG 3600. Undergraduate Research Assistant. 0 Hours.}

Undergraduate research. (Typically offered: Fall, Spring and Summer)

\section*{GNEG 3712H. Honors Research Experience I. 2 Hours.}

Introduction to the research of the faculty of the College of Engineering for the purpose of matching students with an undergraduate research advisor. Development of skills in using electronic resources to conduct background research on individuals and topics in the engineering academic community. Development of an undergraduate research white paper with a corresponding presentation. Prerequisite: Honors College and ENGR students only, and instructor consent. (Typically offered: Spring)

\section*{GNEG 3801. Parallel Cooperative Education. 1 Hour.}

Part time supervised experience in industry where students apply classroom skills to problems specific to their discipline in in a professional workplace setting. Credit may not be applicable to degree programs in engineering. Prerequisite: Instructor permission. (Typically offered: Fall, Spring and Summer)

GNEG 3811. Alternating Cooperative Education. 1 Hour.
Full time supervised experience in industry where students apply classroom skills to problems specific to their discipline in a professional workplace setting. Application of credit to a degree program is at the discretion of the department owning the degree program. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

GNEG 390V. Special Topics. 1-4 Hour.
Consideration of current engineering topics not covered in other courses.
Prerequisite: Instructor's consent. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

GNEG 390VH. Honors Special Topics. 1-4 Hour.
Consideration of current engineering topics not covered in other courses.
Prerequisite: Instructor's consent. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.
This course is equivalent to GNEG 390V.
GNEG 4600. Undergraduate Research Assistant. 0 Hours.
Undergraduate research. (Typically offered: Fall, Spring and Summer)

GNEG 5801. Parallel Cooperative Education. 1 Hour.
Part time supervised experience in industry where students apply focused, discipline specific, classroom and research skills to problems directly related to their area of study in a professional work place setting. May be repeated for up to 3 hours of nondegree credit. Prerequisite: Instructor permission. (Typically offered: Fall, Spring and Summer)

GNEG 5811. Alternating Cooperative Education. 1 Hour.
Full time supervised experience in industry where students apply focused, discipline specific, classroom and research skills to problems directly related to their area of study in a professional work place setting. May be repeated for up to 3 hours of nondegree credit. Prerequisite: Instructor permission. (Typically offered: Fall, Spring and Summer)

\section*{GNEG 590V. Special Topics. 1-4 Hour.}

Consideration of current engineering topics not covered in other courses
Prerequisite: Instructor's consent. (Typically offered: Irregular) May be repeated for up to 16 hours of degree credit.

\section*{Geosciences (GEOS)}

\section*{Courses}

GEOS 1111L. Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab). 1 Hour.
Laboratory exercises concerning the identification of rocks and minerals, use of aerial photographs and topographic maps, and several field trips. Pre- or Corequisite: GEOS 1113. (Typically offered: Fall, Spring and Summer)

GEOS 1111M. Honors Physical Geology Laboratory. 1 Hour.
Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOS 1113H. (Typically offered: Fall) This course is equivalent to GEOS 1111 L .

GEOS 1113. Physical Geology (ACTS Equivalency = GEOL 1114 Lecture). 3 Hours.
Survey of geological processes and products, and their relationships to landforms, natural resources, living environments and human beings. Corequisite: GEOS 1111L. (Typically offered: Fall, Spring and Summer)

\section*{GEOS 1113H. Honors Physical Geology. 3 Hours.}

Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOS 1111M. (Typically offered: Irregular)
This course is equivalent to GEOS 1113.
GEOS 1123. Human Geography (ACTS Equivalency = GEOG 1113). 3 Hours.
Basic course in human geography stressing the interrelationships between the natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities. (Typically offered: Fall and Spring)

\section*{GEOS 1123H. Honors Human Geography. 3 Hours.}

Basic course in human geography stressing the interrelationships between the natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring) This course is equivalent to GEOS 1123.

GEOS 1131L. Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab). 1 Hour.
Laboratory exercises concerning human interactions with the physical environment including the study of earthquakes, volcanoes, flooding, erosion, mass wasting, water supply and contamination, and waste disposal. (Typically offered: Fall and Spring)

GEOS 1133. Earth Science (ACTS Equivalency = GEOL 1124 Lecture). 3 Hours. The application of earth science principles and knowledge of problems created by human occupancy and exploitation of the physical environment. (Typically offered: Fall and Spring)

\section*{GEOS 1154. Introduction to Geology for Science Majors. 4 Hours.}

Survey of geological processes and materials and their relationships to landforms, natural resources, environments, and human beings. Students will understand the principles of physical geology, Earth's internal structure, plate tectonics, and geologic time. Students may not receive degree credit for both GEOS 1113/GEOS 1111L and GEOS 1154. Corequisite: Lab component. Prerequisite: Freshman or sophomore standing, or by instructor consent. (Typically offered: Fall)

GEOS 2003. World Regional Geography (ACTS Equivalency = GEOG 2103). 3 Hours.
Survey of problems, development potential, and physical and human resources of the developing and developed world. (Typically offered: Fall and Spring)

\section*{GEOS 2003H. Honors World Regional Geography. 3 Hours.}

Survey of problems, development potential, and physical and human resources of the developing and developed world. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to GEOS 2003.
GEOS 2313. Mineralogy. 3 Hours.
General principles of mineralogy, study and identification of common minerals, igneous \& metamorphic rocks using hand samples. Prerequisite: (GEOS 1113 or GEOS 1154) and CHEM 1103. Corequisite: Lab component. (Typically offered: Fall)

\section*{GEOS 2813. Digital Earth. 3 Hours.}

This course introduces the fundamental concepts and practical geospatial techniques of the digital earth initiative. Students will learn how digital geographical information is produced (also referred to as geospatial data) and utilized in a variety of economic, environmental, and scientific applications. The class will concentrate on how digital geospatial data are produced, integrated and applied in daily life and will review a variety of environmental and socioeconomic applications. (Typically offered: Fall)

\section*{GEOS 2813H. Honors Digital Earth. 3 Hours.}

This course introduces the fundamental concepts and practical geospatial techniques of the digital earth initiative. Students will learn how digital geographical information is produced (also referred to as geospatial data) and utilized in a variety of economic, environmental, and scientific applications. The class will concentrate on how digital geospatial data are produced, integrated and applied in daily life and will review a variety of environmental and socioeconomic applications. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to GEOS 2813.

\section*{GEOS 3013. Foundations of Geospatial Data Analysis. 3 Hours.}

Basic mathematical tools applied in geospatial technology, including trigonometry in mapping, linear algebra in remote sensing, optimization in spatial decision support, and graph theory in routing. Course develops the framework for spatial data analysis and decision support. Students may receive credit for the course through testing.
Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)
GEOS 3023. Introduction to Cartography. 3 Hours.
Students learn basic principles of map design, cartographic theory and field surveying to produce a variety of computer-generated maps. An introductory course designed for students in a variety of different disciplines using AutoCad software and various new technologies. Field trips may be required. (Typically offered: Fall)

GEOS 3043. Sustaining Earth. 3 Hours.
Theory and growth of conservation and sustainability, the wise use of the major natural resources of the United States. This course meets the requirement in conservation and sustainability for teachers. Prerequisite: Junior standing. (Typically offered: Fall)

\section*{GEOS 3043H. Honors Sustaining Earth. 3 Hours.}

Theory and growth of conservation and the wise use of the major natural resources of the United States. This course meets the requirement in conservation for teachers. Prerequisite: Junior standing. (Typically offered: Fall)
This course is equivalent to GEOS 3043.
GEOS 3063. Geology of Arkansas. 3 Hours.
A survey of the distribution, genesis, and age of the rocks, fossils, structures, landforms and geological processes of Arkansas. Equivalent to two hours of lecture per week. Field trips required. Prerequisite: (GEOS 1113 or GEOS 1113H or GEOS 1154). (Typically offered: Spring)

GEOS 3103. Geospatial Technologies Computational Toolkit. 3 Hours.
Basic computational tools and processes applied in geospatial software, related computer hardware components, systems and applications software, and spatial database fundamentals. Python, including SciPy and NumPy, geospatial implementations will be emphasized. No programming experience is required. Students may receive credit for the course through testing. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

GEOS 3213. Principles of Remote Sensing. 3 Hours.
Fundamental concepts of remote sensing of the environment. Optical, infrared, microwave, LIDAR, and in situ sensor systems are introduced. Remote sensing of vegetation, water, urban landscapes, soils, minerals, and geomorphology is discussed. The course includes laboratory exercises in GIS software and field spectroscopy. (Typically offered: Fall)

GEOS 3333. Oceanography. 3 Hours.
The sea, its landforms; its winds and currents as related to the atmosphere, world climates, and world trade; its basin as avenues for continental drift; its waters as habitat for plant and animal life; its marine and submarine resources as presently and potentially useful to man. Offered as physical science. Prerequisite: Junior standing. (Typically offered: Fall)

\section*{GEOS 3413. Sedimentary Geology. 3 Hours.}

An introductory study of sedimentary rocks from the standpoint of classification, field and laboratory description, genesis, and preservation. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOS 2313. (Typically offered: Spring)

\section*{GEOS 3514. Structural Geology. 4 Hours.}

Survey of deformational features and their geological significance in the crust of the earth. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: GEOS 1113 or GEOS 1154. (Typically offered: Spring)

GEOS 3543. Geospatial Applications and Information Science. 3 Hours.
An introduction to the methods and theory underlying the full range of geographic information science and collateral areas - including GNSS, remote sensing, cadastral, spatial demographics and others. (Typically offered: Fall and Spring) This course is cross-listed with ANTH 3543.

\section*{GEOS 3553. Spatial Analysis Using ArcGIS. 3 Hours.}

Applications of analysis of spatial data using ArcGIS tools in map design, on-line mapping, creating geodatabases, accessing geospatial data, geo-processing, digitizing, geocoding, spatial analysis including basic spatial statistics, analysis of spatial distributions and patterning and 3D application using ArcGIS 3D Analyst. Prerequisite: GEOS 3543. (Typically offered: Fall and Spring)

GEOS 3563. Geospatial Data Mining. 3 Hours.
Basic tools for analyzing, summarizing and visualizing geospatial data. Exploratory data and spatial data analysis, probability distributions and application, single and multivariate analysis and hypothesis testing, and spatial smoothing and interpolation. Emphasis will be on problem solving in geospatial settings using the R statistical language. Prerequisite: GEOS 3543 and (GEOS 3013 or MATH 2554 or MATH 2043 or DASC 2594) and (GEOS 3103 or DASC 1104 or DASC 2113). (Typically offered: Fall and Spring)

GEOS 3593. Introduction to Geodatabases. 3 Hours.
Fundamental concepts and applications of geospatial databases. Schema development and spatial data models for geodata. Spatial and attribute query and optimization, properties and structures of relational and object-oriented geodatabases. Spatial extensions of SQL, spatial indexing, measurement, and geometry. Prerequisite: GEOS 3543 and (GEOS 3013 or MATH 2554 or MATH 2043 or DASC 2594) and (GEOS 3103 or DASC 1104 or DASC 2113). (Typically offered: Fall and Spring)

GEOS 360V. Undergraduate Special Problems. 1-6 Hour.
Library, laboratory, or field research in different phases of geology. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{GEOS 3733. Geospatial Data Science in Public Health. 3 Hours.}

Introduction to geospatial data science, including geographic information systems (GIS) and related technologies, with an emphasis on their practical applications in the fields of public health, global health, healthcare analytics, healthcare administration, and other health-related fields. (Typically offered: Fall)

GEOS 3873. Geological Data Analysis. 3 Hours.
Quantitative methods and techniques for analysis and interpretation of geological data. Corequisite: Lab component. Pre- or corequisite: MATH 2564. (Typically offered: Spring)

GEOS 3901. Junior Honors Course. 1 Hour.
Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)

GEOS 3911. Junior Honors Course. 1 Hour.
Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer)

GEOS 399VH. Honors Course. 1-6 Hour.
Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

GEOS 4033. Hydrogeology. 3 Hours.
Occurrence, movement, and interaction of water with geologic and cultural features. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 2043 or MATH 2554, and GEOS 3514. (Typically offered: Spring)

GEOS 4043. Geography of the Middle East. 3 Hours.
Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class. Prerequisite: Junior standing. (Typically offered: Fall)

\section*{GEOS 4043H. Honors Geography of the Middle East. 3 Hours.}

Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class. Prerequisite: Junior standing. (Typically offered: Irregular)
This course is equivalent to GEOS 4043.
GEOS 4053. Geomorphology. 3 Hours.
A quantitative, mechanistic overview of surface processes and landscape evolution. Lecture 2 hours, laboratory 3 hours per week. One to two field trips on weekends (2 day total) are required during the semester. Corequisite: Lab component. Prerequisite: GEOS 3873 or instructor consent. (Typically offered: Spring)

\section*{GEOS 4063. Principles of Geochemistry. 3 Hours.}

Introduction to fundamental principles of geochemistry from historic development to modern concepts.Prerequisite: CHEM 1121L, CHEM 1123 and GEOS 2313. (Typically offered: Fall)

\section*{GEOS 4073. Urban Geography. 3 Hours.}

Areal patterns of modern urban regions and the focus shaping these patterns. Emphasis is placed on American urban areas and their evolution and functional areas. Field work. Prerequisite: Junior standing. (Typically offered: Spring)

GEOS 4083. Economic Geology. 3 Hours.
Introduction to mineral deposits used as economic resources. Covers basic geology and geochemistry of mineral deposit formations and the formation of major classes of deposits. Examines the relationship between the distribution of ores, oil, gas, coal, and Plate Tectonics. Explores environmental issues associated with the extraction of earth resources. Prerequisite: GEOS 2313. (Typically offered: Irregular)

GEOS 4093. History and Philosophy of Geography. 3 Hours.
This course familiarizes students with the history of geography, the contributions of geographers to scientific thought and theory, and research techniques that are used in geography. Emphasis is given to the integration of statistical and spatial analysis, and their applications in field research. The course includes short fieldbased projects in and around Northwest Arkansas. (Typically offered: Spring Even Years)

GEOS 410V. Special Problems in Geosciences. 1-6 Hour.
Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

\section*{GEOS 410VH. Honors Special Problems in Geosciences. 1-6 Hour.}

Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.
This course is equivalent to GEOS 410 V .
GEOS 4113. Global Change. 3 Hours.
Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. (Typically offered: Spring)

GEOS 4113H. Honors Global Change. 3 Hours.
Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. Prerequisite: Honors candidacy. (Typically offered: Spring) This course is equivalent to GEOS 4113.

\section*{GEOS 4153. Karst Hydrogeology. 3 Hours.}

Assessment of ground water resources in carbonate rock terrains; relation of ground water and surface water hydrology to karst; quantification of extreme variability in karst environments; data collection rationale. Field trips required. Prerequisite: GEOS 4033. (Typically offered: Irregular)

GEOS 4223. Stratigraphy and Sedimentation. 3 Hours.
Introductory investigation of stratigraphic and sedimentologic factors important to the study of sedimentary rocks. Lecture 2 hours, laboratory 3 hours per week. A required weekend, two-day field trip will be conducted during the semester. Corequisite: Lab component. Prerequisite: GEOS 3413. (Typically offered: Fall)

GEOS 4233. Geography of Religion \& Sacrality. 3 Hours.
Explores the spatial nature of the World's major faiths and religious institutions, focusing on the distribution and origins of these religions. Examines the religious beliefs, rituals, architecture, demographics, and art in different societies, cultures, and countries. Considers the tenets and practices of what is sacred and/or spiritual, held in common by a group or community. Prerequisite: Junior or senior standing. (Typically offered: Irregular)

GEOS 4243. Political Geography. 3 Hours.
Contemporary world political problems in their geographic context. Development of the principles of political geography with emphasis upon the problems of Eastern Europe, Africa, and Southeast Asia. Prerequisite: Junior standing. (Typically offered: Fall Odd Years)

\section*{GEOS 4253. Petroleum Geology. 3 Hours}

Distribution and origin of petroleum. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Geology major and senior standing. (Typically offered: Fall)

GEOS 4263. Geospatial Data Science - Sources and Characteristics. 3 Hours. Covers the wide range of geospatial data sources and characteristics with emphasis on data science applications through hands-on experience recognizing the unique requirements of major sources. Techniques for the integration of disparate heterogeneous data sets will be covered. Corequisite: GEOS 3563. Prerequisite: GEOS 3543. (Typically offered: Fall)

\section*{GEOS 430V. Internship in Physical Geography. 3-6 Hour.}

Supervised experience in municipal, county, state or private natural resource management agency, or any other such organization approved by instructor. (Typically offered: Fall, Spring and Summer)

GEOS 4333. Igneous and Metamorphic Petrology. 3 Hours.
Elementary to advanced study of the origin and evolution of igneous and metamorphic rocks in a variety of plate tectonics settings. Lecture 2 hours, Laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOS 2313. (Typically offered: Spring)

\section*{GEOS 4353. Meteorology. 3 Hours.}

Examination of the atmospheric processes that result in multifarious weather systems. Offered as physical science. Prerequisite: Junior standing. (Typically offered: Fall)

GEOS 4363. Climatology. 3 Hours.
Fundamentals of topical climatology followed by a study of regional climatology. Offered as physical science. Prerequisite: GEOS 1133 or GEOS 4353. (Typically offered: Spring)

\section*{GEOS 437V. Geology Field Trip. 1-2 Hour.}

Camping field trip to areas of geologic interest, usually conducted during Spring Break. (Typically offered: Spring) May be repeated for up to 4 hours of degree credit.

GEOS 4383. Hazard \& Disaster Assessment, Mitigation, Risk \& Policy. 3 Hours.
Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior or senior standing. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{GEOS 4383H. Honors Hazard \& Disaster Assessment, Mitigation, Risk \&} Policy. 3 Hours.
Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is equivalent to GEOS 4383.
GEOS 4393. American Public Lands \& Policy. 3 Hours.
The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Junior or senior standing. (Typically offered: Irregular)

\section*{GEOS 4393H. Honors American Public Lands \& Policy. 3 Hours.}

The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Honors standing and Junior or senior standing. (Typically offered: Irregular)
This course is equivalent to GEOS 4393.

\section*{GEOS 4433. Geophysics. 3 Hours.}

Derivation from physical principles, of the geophysical methods for mapping the Earth. Computational methods of converting gravity, magnetic, radiometric, electrical, and seismic data into geologic information. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MATH 2564 and PHYS 2033 and PHYS 2031L and GEOS 3514. (Typically offered: Irregular)

GEOS 4473. Applied Climatology. 3 Hours.
Applied climatology involves the use of climatic data to solve a variety of social, economic and environmental problems, such as for clients in agriculture, water and energy management. The basic purpose of applied climatology is to help society, at all scales and levels, to achieve a better adjustment to the climatic environment. (Typically offered: Fall)

GEOS 4493. Geography of Political Violence. 3 Hours.
This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextuallyinformed understanding of the international system and how it is shaped by civil war. Prerequisite: Junior or senior standing. (Typically offered: Fall Even Years) This course is cross-listed with INST 4103H.

GEOS 4493H. Honors Geography of Political Violence. 3 Hours.
This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextuallyinformed understanding of the international system and how it is shaped by civil war. Prerequisite: Junior or senior standing and honors standing. (Typically offered: Fall Even Years)
This course is cross-listed with GEOS 4493, INST 4103H.
GEOS 4523. Cartographic Design and Production. 3 Hours.
This course addresses advanced cartographic concepts (i.e. visual hierarchy, aesthetics, image cognition) and production techniques as they relate to computerassisted mapping. Students produce a variety of maps using Adobe Illustrator (CS \(4-6)\) software to build a map portfolio. Field trips may be required. Prerequisite: GEOS 3023. (Typically offered: Spring)

GEOS 4533. Introduction to Petroleum Geophysics. 3 Hours.
Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Prerequisite: MATH 2564, (PHYS 2033 or PHYS 2074), and GEOS 3514 or instructor consent. (Typically offered: Fall)

\section*{GEOS 4533H. Honors Introduction to Petroleum Geophysics. 3 Hours.}

Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Prerequisite: MATH 2564, (PHYS 2033 or PHYS 2074), and GEOS 3514 or instructor consent. (Typically offered: Fall)
This course is equivalent to GEOS 4533.

\section*{GEOS 4553. Introduction to Raster GIS. 3 Hours.}

Theory, data structure, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. Prerequisite: GEOS 3543 or ANTH 3543. (Typically offered: Fall) This course is cross-listed with ANTH 4553.

\section*{GEOS 4563. Geology of Our National Parks. 3 Hours.}

This course examines the underlying geology responsible for selected parks, and explores the interplay of geology, biology, climate, topography, and humans to evaluate the value of the parks, and to anticipate the problems they will face in the near and long-term. Prerequisite: GEOS 1113. (Typically offered: Fall)

\section*{GEOS 4583. Enterprise and Multiuser GIS. 3 Hours.}

GIS practice that's typical of collaborative team-based geospatial organizations. Solve real-world problems through end-to-end GIS design and implementation using ArcGIS Enterprise, extensive federal, state, and local repositories, and high quality software documentation. Includes relevant training in geospatial provenance and metadata, and in enterprise and multiuser GIS administration. (Typically offered: Spring)

\section*{GEOS 4593. Introduction to Global Positioning Systems and Global Navigation Satellite Systems. 3 Hours.}

Fundamentals of navigation, mapping, and high-precision positioning using the Navstar Global Positioning System. Topics include datum definition and transformation, map projections, autonomous and differential positioning using both code and carrier processing, and analysis of errors. Prerequisite: GEOS 3543 or GEOS 5543. (Typically offered: Fall)

\section*{GEOS 4653. GIS Analysis and Modeling. 3 Hours.}

Unlike conventional GIS courses that focus on studying "where", this course will teach students to address beyond "where" using various GIS analysis and modeling techniques to explore "why" and "how". The course will provide theoretical and methodological reviews of the principles of cartographic modeling and multi-criteria decision-making. (Typically offered: Spring)

GEOS 4663. Low-Temperature Geochemistry of Natural Waters. 3 Hours.
Covers the low-temperature geochemistry of waters and their associated minerals at Earth's surface. Examines the controls on the chemical composition of natural waters and the minerals precipitated from them. Topics covered will include water-rock interactions, pH , redox, the carbonate-water system, clay minerals and exchange, heavy metals, and a brief introduction to stable isotopes and geomicrobiology. Prerequisite: CHEM 1121L, CHEM 1123, GEOS 1113, and GEOS 1111L. (Typically offered: Fall)

\section*{GEOS 4686. Geology Field Camp. 6 Hours.}

A professional course taught off campus emphasizing occurrence, description, mapping, and interpretation of major rock types. May not be taken for graduate credit. Prerequisite: GEOS 3413 and GEOS 3514. (Typically offered: Summer)

\section*{GEOS 4693. Environmental Justice. 3 Hours.}

This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. (Typically offered: Spring)

\section*{GEOS 4783. Geography of Europe. 3 Hours.}

Geographic regions of the area with emphasis on their present development.
Prerequisite: Junior standing. (Typically offered: Irregular)

GEOS 4793. Geospatial Unmanned Aircraft Systems. 3 Hours.
Geospatial unmanned aircraft systems (UAS) are becoming key technologies in a number of disciplines. This course will introduce safe and legal operation of UAS in aerial photography, multispectral, thermal and LIDAR applications, geodetic control, photogrammetric and computer vision processing, and the creation of accurate 2D and 3D digital information products. Pre- or Corequisite: GEOS 3213 or GEOS 4593 or equivalent. (Typically offered: Fall)
GEOS 4813. Geography of Eurasia. 3 Hours.
Introduction to the culture, society, and politics of Eurasia using the organizing concept of empire from the moment of its consolidation in 1945 to its dissolution in 1991. Focuses on places that have emerged from this order and emphasizes experience and memory at each of these different times and places. Prerequisite: Junior standing. (Typically offered: Spring Even Years)

GEOS 4924. Earth System History (ACTS Equivalency = PHSC 1104). 4 Hours.
Physical and biological events that form the history of the earth from its formation to the beginning of the historical era. Corequisite: Lab component. Prerequisite: GEOS 3413 and (GEOS 4223 or GEOS 4333) and GEOS 3514. (Typically offered: Spring)

\section*{GEOS 4933. Ancient Forest Science and Sustainability. 3 Hours.}

Ancient forests preserve beautiful habitat with high ecological integrity. This course will examine the development, spatial distribution, and ongoing destruction of ancient forests worldwide, and how science can contribute to the understanding and sustainable management of these valuable resources. (Typically offered: Spring)

\section*{GEOS 4972H. Senior Honors Course I. 2 Hours.}

Special honors research in geology. Two hours of credit each semester.
Prerequisite: Junior honors. (Typically offered: Fall, Spring and Summer)
GEOS 4982H. Senior Honors Course II. 2 Hours.
Special honors research in geology. Two hours of credit each semester.
Prerequisite: Junior honors. (Typically offered: Fall, Spring and Summer)
GEOS 4993. Dynamics of Sediment Transport. 3 Hours.
This is a course focused on how fluids transport sediment and construct stratigraphy. Lectures will develop environmental fluid mechanics and sediment transport from first principles so they can be used to evaluate sedimentological and stratigraphic problems. This framework will be applied to a sedimentological problem using original data and analysis. Pre- or Corequisite: GEOS 4223. Prerequisite: GEOS 3413. (Typically offered: Fall Odd Years)
GEOS 5011. Colloquium. 1 Hour.
Weekly meetings of faculty, graduates, advanced students and guests to discuss research and trends in the field of geography. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{GEOS 5043. Foundations of Geospatial Data Analysis. 3 Hours.}

Basic mathematical tools applied in geospatial technology, including trigonometry in mapping, linear algebra in remote sensing, optimization in spatial decision support, and graph theory in routing. Course develops the framework for spatial data analysis and decision support. Pre- or Corequisite: GEOS 5543. (Typically offered: Fall and Spring)

\section*{GEOS 5053. Quaternary Environments. 3 Hours.}

An interdisciplinary study of the Quaternary Period, including dating methods, deposits, soils, climates, tectonics, and human adaptation. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: Graduate standing. (Typically offered: Fall)
This course is cross-listed with ANTH 5053, ENDY 5053.
GEOS 5073. Geospatial Technologies Computational Toolkit. 3 Hours.
Basic computational tools and processes applied in geospatial software, related computer hardware components, systems and applications software, and spatial database fundamentals. Python, including SciPy and NumPy, geospatial implementations will be emphasized. No programming experience is required. Preor Corequisite: GEOS 5543. (Typically offered: Fall and Spring)

GEOS 5083. Geospatial Data Mining. 3 Hours.
Basic tools for analyzing, summarizing and visualizing geospatial data. Exploratory data and spatial data analysis, probability distributions and application, single and multivariate analysis and hypothesis testing, and spatial smoothing and interpolation. Emphasis will be on problem solving in geospatial settings using the \(R\) statistical language. Prerequisite: GEOS 5043 and GEOS 5073 or equivalent. (Typically offered: Fall and Spring)

\section*{GEOS 5093. History and Philosophy of Geography. 3 Hours.}

This course familiarizes students with the history of geography, the contributions of geographers to scientific thought and theory, and research techniques that are used in geography. Emphasis is given to the integration of statistical and spatial analysis, and their applications in field research. The course includes short fieldbased projects in and around Northwest Arkansas. (Typically offered: Spring Even Years)
GEOS 510V. Special Problems in Physical Geosciences. 1-6 Hour.
Special problems in Geosciences. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{GEOS 5113. Global Change. 3 Hours.}

Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. (Typically offered: Fall)
This course is cross-listed with ENDY 5113.
GEOS 5143. 3D Seismic Exploration. 3 Hours.
Interpretation of 3D seismic data for geological structure, stratigraphy, and pore fluid variations with emphasis on hydrocarbon exploration. Prerequisite: GEOS 4433 or GEOS 5433. (Typically offered: Spring)

\section*{GEOS 5163. Hydrogeologic Modeling. 3 Hours.}

Topics include numerical simulation of ground water flow, solute transport, aqueous geochemistry, theoretical development of equations, hypothesis testing of conceptual models, limitations of specific methods, and error analysis. Emphasis on practical applications and problem solving. Prerequisite: GEOS 4033 or GEOS 5263 (formerly GEOS 4033) and computer literacy. (Typically offered: Irregular)

\section*{GEOS 5173. Urban Geography. 3 Hours.}

Areal patterns of modern urban regions and the focus shaping these patterns. Emphasis is placed on American urban areas and their evolution and functional areas. Field work. Graduate degree credit will not be given for both GEOS 4073 and GEOS 5173. (Typically offered: Irregular)

\section*{GEOS 5183. Geography of the Middle East. 3 Hours.}

Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class. Graduate degree credit will not be given for both GEOS 4043 and GEOS 5183. (Typically offered: Fall)

\section*{GEOS 520V. Special Problems in Human Geography. 1-6 Hour.}

Special problems in human geography. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{GEOS 5213. Principles of Remote Sensing. 3 Hours.}

Fundamental concepts of remote sensing of the environment. Optical, infrared, microwave, LIDAR, and in situ sensor systems are introduced. Remote sensing of vegetation, water, urban landscapes, soils, minerals, and geomorphology is discussed. The course includes laboratory exercises in GIS software and field spectroscopy. (Typically offered: Fall)

\section*{GEOS 5223. Sedimentary Petrology. 3 Hours.}

Sediments and sedimentary rocks. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOS 4223 or GEOS 5323 (formerly GEOS 4223). (Typically offered: Fall)

\section*{GEOS 5243. Political Geography. 3 Hours.}

Contemporary world political problems in their geographic context. Development of the principles of political geography with emphasis upon the problems of Eastern Europe, Africa, and Southeast Asia. Graduate degree credit will not be given for both GEOS 4243 and GEOS 5243. (Typically offered: Fall Odd Years)

GEOS 5253. Geomorphology. 3 Hours.
Mechanics of landform development. Lecture 2 hours, laboratory 3 hours per week. Several local field trips are required during the semester. Graduate degree credit will not be given for both GEOS 4053 and GEOS 5253. (Typically offered: Spring)

\section*{GEOS 5263. Hydrogeology. 3 Hours.}

Occurrence, movement, and interaction of water with geologic and cultural features. Lecture 3 hours per week. Graduate degree credit will not be given for both GEOS 4033 and GEOS 5263. Corequisite: Lab component. Prerequisite: MATH 2043 or MATH 2554, and GEOS 3514. (Typically offered: Spring)

\section*{GEOS 5273. Principles of Geochemistry. 3 Hours.}

Introduction to fundamental principles of geochemistry from historic development to modern concepts. Graduate degree credit will not be given for both GEOS 4063 and GEOS 5273. Prerequisite: CHEM 1121L, CHEM 1123 and GEOS 2313. (Typically offered: Fall)

\section*{GEOS 5283. Economic Geology. 3 Hours.}

Introduction to mineral deposits used as economic resources. Covers basic geology and geochemistry of mineral deposit formations and the formation of major classes of deposits. Examines the relationship between the distribution of ores, oil, gas, coal, and Plate Tectonics. Explores environmental issues associated with the extraction of earth resources. Graduate degree credit will not be given for both GEOS 4083 and GEOS 5283. Prerequisite: GEOS 2313. (Typically offered: Irregular)
GEOS 5293. Introduction to Global Positioning Systems and Global Navigation Satellite Systems. 3 Hours.
Fundamentals of navigation, mapping, and high-precision positioning using the Navstar Global Positioning System. Topics include datum definition and transformation, map projections, autonomous and differential positioning using both code and carrier processing, and analysis of errors. Graduate degree credit will not be given for both GEOS 4593 and GEOS 5293. (Typically offered: Fall)

\section*{GEOS 5323. Stratigraphy and Sedimentation. 3 Hours.}

Introductory investigation of stratigraphic and sedimentologic factors important to the study of sedimentary rocks. Lecture 2 hours, laboratory 3 hours per week. A required weekend, two-day field trip will be conducted during the semester. Graduate degree credit will not be given for both GEOS 4223 and GEOS 5323. Corequisite: Lab component. Prerequisite: GEOS 3413. (Typically offered: Fall)

GEOS 5333. Igneous and Metamorphic Petrology. 3 Hours.
Elementary to advanced study of the origin and evolution of igneous and metamorphic rocks in a variety of plate tectonics settings. Lecture 2 hours, Laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring)

\section*{GEOS 5353. Meteorology. 3 Hours.}

Examination of the atmospheric processes that result in multifarious weather systems. Offered as physical science. Graduate degree credit will not be given for both GEOS 4353 and GEOS 5353. (Typically offered: Fall)

GEOS 5363. Climatology. 3 Hours.
Fundamentals of topical climatology followed by a study of regional climatology.
Offered as physical science. Graduate degree credit will not be given for both
GEOS 4363 and GEOS 5363. (Typically offered: Spring)

\section*{GEOS 537V. Geology Field Trip. 1-2 Hour.}

Camping field trip to areas of geologic interest, usually conducted during Spring Break. Graduate degree credit will not be given for both GEOS 437V and GEOS 537V. (Typically offered: Spring) May be repeated for up to 4 hours of degree credit.

GEOS 5383. Hazard \& Disaster Assessment, Mitigation, Risk \& Policy. 3 Hours.
Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Graduate degree credit will not be given for both GEOS 4383 and GEOS 5383. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{GEOS 5393. Mathematical Modeling of Geological Processes. 3 Hours.}

This course explores a variety of topics in applied mathematics and computational methods within the context of studying geological processes and from the perspective of a modeling practitioner. Programming is conducted in Python. Knowledge of Calculus II is necessary. (Typically offered: Irregular)

GEOS 5403. American Public Lands and Policy. 3 Hours.
The course examines the role of American federal public lands in 19th-21st century geography, history, policy, and art. It investigates the growth of conservation, preservation, and management movements in the US by looking at America's national parks, forests, dams, wildlife refuges, wilderness areas, managed and agricultural lands. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{GEOS 5433. Geophysics. 3 Hours.}

Derivation from physical principles, of the geophysical methods for mapping the Earth. Computational methods of converting gravity, magnetic, radiometric, electrical, and seismic data into geologic information. Lecture 3 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both GEOS 4433 and GEOS 5433. Corequisite: Lab component. Prerequisite: MATH 2564 and PHYS 2033 and PHYS 2031L and GEOS 3514. (Typically offered: Irregular)

GEOS 5453. Introduction to Raster GIS. 3 Hours.
Theory, data structure, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. Graduate degree credit will not be given for both GEOS 4553 and GEOS 5453. (Typically offered: Fall)
This course is cross-listed with ANTH 5553.
GEOS 5463. Microtectonics. 3 Hours.
Focuses on the microstructural evolution of tectonite rocks and the constraints that can be gleaned from optical microscopic evaluation of rocks in petrographic thinsections and hand samples. Results are evaluated in the context of plate tectonic theory and geodynamics. Knowledge of mineralogy and petrology equivalent to GEOS 2313 is required. Pre- or Corequisite: GEOS 5563. Corequisite: Lab component. (Typically offered: Fall)

\section*{GEOS 5473. Applied Climatology. 3 Hours.}

Applied climatology involves the use of climatic data to solve a variety of social, economic and environmental problems, such as for clients in agriculture, water and energy management. The basic purpose of applied climatology is to help society, at all scales and levels, to achieve a better adjustment to the climatic environment. (Typically offered: Fall)

GEOS 550V. Internship in GIS \& Cartography. 3-6 Hour.
Supervised experience in GIS and/or cartographic applications with municipal, county, state, or private enterprises. (Typically offered: Spring and Summer) May be repeated for up to 6 hours of degree credit.

GEOS 5523. Cartographic Design \& Production. 3 Hours.
This course addresses advanced cartographic concepts (i.e. visual hierarchy, aesthetics, image cognition) and production techniques as they relate to computerassisted mapping. Students produce a variety of maps using Adobe Illustrator (CS \(4-6)\) software to build a map portfolio. Field trips may be required. Graduate degree credit will not be given for both GEOS 4523 and GEOS 5523. (Typically offered: Spring)
GEOS 5533. Introduction to Petroleum Geophysics. 3 Hours.
Introduction to seismic wave propagation and petroleum seismology with particular emphasis on seismic events, elastic waves, and seismic survey design. Credit will not be given for both GEOS 4533 and GEOS 5533. Prerequisite: MATH 2564, PHYS 2033, and GEOS 3514 or consent of instructor. (Typically offered: Fall)

GEOS 5543. Geospatial Applications and Information Science. 3 Hours.
An introduction to the methods and theory underlying the full range of geographic information science and collateral areas - including GNSS, remote sensing, cadastral, spatial demographics and others. (Typically offered: Fall and Spring)
GEOS 5553. Spatial Analysis Using ArcGIS. 3 Hours.
Applications of analysis of spatial data using ArcGIS tools in map design, on-line mapping, creating geodatabases, accessing geospatial data, geo-processing, digitizing, geocoding, spatial analysis including basic spatial statistics, analysis of spatial distributions and patterning and 3D application using ArcGIS 3D Analyst. Prerequisite: GEOS 3543 or GEOS 5543. (Typically offered: Fall and Spring)

\section*{GEOS 5563. Tectonics. 3 Hours.}

Development of ramifications of the plate tectonics theory. Analysis of the evolution of mountain belts. Lecture 3 hours per week. Prerequisite: GEOS 3514. (Typically offered: Fall)
GEOS 5583. Enterprise and Multiuser GIS. 3 Hours.
GIS practice that is typical of collaborative team-based geospatial organizations. Solve real-world problems through end-to-end GIS design and implementation using ArcGIS Enterprise, extensive federal, state, and local repositories, and high quality software documentation. Includes relevant training in geospatial provenance and metadata, and in enterprise and multiuser GIS administration. Introductory-level familiarity with GIS is recommended. (Typically offered: Spring)
GEOS 5593. Introduction to Geodatabases. 3 Hours.
Fundamental concepts and applications of geospatial databases. Schema development and spatial data models for geodata. Spatial and attribute query and optimization, properties and structures of relational and object-oriented geodatabases. Spatial extensions of SQL, spatial indexing, measurement, and geometry. Course will use PostGIS, ESRI File Geodatabases, and MS-SQL. Prerequisite: GEOS 3543 and GEOS 3103 or equivalent. (Typically offered: Fall and Spring)

\section*{GEOS 560V. Graduate Special Problems. 2-6 Hour.}

Library, laboratory, or field research in different phases of geology. (Typically offered: Fall, Spring and Summer) May be repeated for up to 4 hours of degree credit.

\section*{GEOS 5612. Research Methods in Geosciences. 2 Hours.}

Survey of research methodologies used in both geology and geography, with an emphasis on quantitative analysis. Preparation of research proposals and presentations in the field of geosciences. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{GEOS 5653. GIS Analysis and Modeling. 3 Hours.}

Unlike conventional GIS courses that focus on studying "where", this course will teach students to address beyond "where" using various GIS analysis and modeling techniques to explore "why" and "how". The course will provide theoretical and methodological reviews of the principles of cartographic modeling and multi-criteria decision-making. Graduate degree credit will not be given for both GEOS 4653 and GEOS 5653. (Typically offered: Spring)
This course is cross-listed with ENDY 5653.

GEOS 5663. Low-Temperature Geochemistry of Natural Waters. 3 Hours.
Covers the low-temperature geochemistry of waters and their associated minerals at Earth's surface. Examines the controls on the chemical composition of natural waters and the minerals precipitated from them. Topics covered will include water-rock interactions, pH , redox, the carbonate-water system, clay minerals and exchange, heavy metals, and a brief introduction to stable isotopes and geomicrobiology. Credit will not be given for both GEOS 4663 and GEOS 5663. Prerequisite: CHEM 1121L, CHEM 1123, GEOS 1113, and GEOS 1111L. (Typically offered: Fall)

\section*{GEOS 5693. Environmental Justice. 3 Hours.}

This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. Credit will not be given for both GEOS 4693 and GEOS 5693. (Typically offered: Spring)

\section*{GEOS 5733. Geospatial Data Science in Public Health. 3 Hours.}

Introduction to geospatial data science, including geographic information systems (GIS) and related technologies, with an emphasis on their practical applications in the fields of public health, global health, healthcare analytics, healthcare administration, and other health-related fields. (Typically offered: Fall)

\section*{GEOS 5743. Petroleum Geology. 3 Hours.}

Distribution and origin of petroleum. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both GEOS 4253 and GEOS 5743. Corequisite: Lab component. Prerequisite: Admission to the Geology graduate program. (Typically offered: Fall)

\section*{GEOS 5753. Karst Hydrogeology. 3 Hours.}

Assessment of ground water resources in carbonate rock terrains; relation of ground water and surface water hydrology to karst; quantification of extreme variability in karst environments; data collection rationale. Field trips required. Graduate degree credit will not be given for both GEOS 4153 and GEOS 5753. Prerequisite: GEOS 4033 or GEOS 5263 (formerly GEOS 4033). (Typically offered: Irregular)

GEOS 5783. Geography of Europe. 3 Hours.
Geographic regions of the area with emphasis on their present development. Graduate degree credit will not be given for both GEOS 4783 and GEOS 5783. (Typically offered: Irregular)
GEOS 5793. Geospatial Unmanned Aircraft Systems. 3 Hours.
Geospatial unmanned aircraft systems (UAS) are becoming key technologies in a number of disciplines. This course will introduce safe and legal operation of UAS in aerial photography, multispectral, thermal and LIDAR applications, geodetic control, photogrammetric and computer vision processing, and the creation of accurate 2D and 3D digital information products. Pre- or Corequisite: (GEOS 3213 or GEOS 5213) and (GEOS 4593 or GEOS 5293) or equivalent. (Typically offered: Fall)
GEOS 5853. Environmental Isotope Geochemistry. 3 Hours.
Introduction to principles of isotope fractionation and distribution in geologic environments, isotopic analytical methods, and extraction of isotope samples; application of isotopes in characterization of geologic processes and interaction with hydrologic, surficial, and biologic attenuation, paleothermometry soil, and biogeochemical processes. (Typically offered: Spring) May be repeated for up to 3 hours of degree credit.
This course is cross-listed with ENDY 5853.
GEOS 5873. Geological Data Analysis. 3 Hours.
Quantitative methods and techniques for analysis and interpretation of geological data. Corequisite: Lab component. Prerequisite: MATH 2564 and GEOS 3514. (Typically offered: Spring)

GEOS 5933. Ancient Forest Science and Sustainability. 3 Hours.
Ancient forests preserve beautiful habitat with high ecological integrity. This course will examine the development, spatial distribution, and ongoing destruction of ancient forests worldwide, and how science can contribute to the understanding and sustainable management of these valuable resources. (Typically offered: Spring)

GEOS 5973. Seminar in GIScience. 3 Hours.
Geographic information science and technology research topics of particular interest to the graduate student class. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

GEOS 5993. Dynamics of Sediment Transport. 3 Hours.
The course will give aspiring geologists and civil engineers tools for solving sedimentological problems in their fields. Starting from a grounding in fluid mechanics, we will learn how sediment is transported and stratigraphy accumulated. This will be applied to problems in sedimentology at all scales. (Typically offered: Fall Odd Years)

GEOS 600V. Master's Thesis. 1-6 Hour.
Master's thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

GEOS 700V. Doctoral Dissertation. 1-9 Hour.
Dissertation research. Prerequisite: Graduate standing and Ph.D. candidacy (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{German (GERM)}

\section*{Courses}

GERM 1003. Elementary German I (ACTS Equivalency = GERM 1013). 3 Hours. Elementary German I. (Typically offered: Fall, Spring and Summer)

GERM 1013. Elementary German II (ACTS Equivalency = GERM 1023). 3 Hours.
Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Fall, Spring and Summer)

GERM 2003. Intermediate German I (ACTS Equivalency = GERM 2013). 3 Hours.
Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall, Spring and Summer)
GERM 2013. Intermediate German II (ACTS Equivalency = GERM 2023). 3 Hours.
Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Fall, Spring and Summer)

\section*{GERM 3003. Advanced German I. 3 Hours.}

Development of reading, writing, listening, and speaking skills. Some grammar review and translation exercises. Emphasis on vocabulary acquisition and the correct use of idiomatic expressions. Prerequisite: GERM 2013. (Typically offered: Fall)

GERM 3013. Introduction to Literature. 3 Hours.
Development of reading skills and introduction to literary analysis. Prerequisite:
GERM 2013 or equivalent. (Typically offered: Fall)
GERM 3033. Conversation. 3 Hours.
Three hours per week of guided conversation practice for the post-intermediate student. Prerequisite: GERM 2013 or instructor consent. (Typically offered: Spring)

GERM 399VH. Honors German Course. 1-6 Hour.
Honors thesis research and writing under the direction of a faculty member in the department. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

\section*{GERM 4003. Advanced German II. 3 Hours.}

Further development of reading, writing, listening, and speaking skills. Some grammar review and translation exercises. Emphasis on vocabulary acquisition and the correct use of idiomatic expressions. Prerequisite: GERM 3003. (Typically offered: Spring)

GERM 4013. Germany and the Holocaust: The Significance of the Holocaust in Differentiated Contexts. 3 Hours.
Taught in English. Topics covering the role of the Holocaust in German history, culture, art, language and German Studies. Equal emphasis will be placed on historical competence and philosophical/theoretical inquiry, addressed from a variety of media and primary and secondary sources. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

GERM 4023. German Migration and National Identity. 3 Hours.
Examines the experiences of Germans who have migrated abroad, migrants in Germany, and those who have felt like migrants in their own country due to isolating historical experiences and are confronted with what it means to be a German. Incorporates traditional literary narrative, autobiography, film, and music. Prerequisite: GERM 3003 or GERM 3013, or instructor consent. (Typically offered: Irregular)

\section*{GERM 4033. Advanced Conversation. 3 Hours.}

Three hours per week of conversation practice for the advanced undergraduate.
Prerequisite: GERM 3033 or instructor consent. (Typically offered: Irregular)
GERM 4043. German Cinema. 3 Hours.
Presents a range of German films in cultural-historical context; vocabulary and structures for discussing film, film history, and film theory in German. Prerequisite:
GERM 3003. (Typically offered: Irregular)

\section*{GERM 4123. The German Novella. 3 Hours.}

An intensive study of the novella as a genre from its origin to the present.
Prerequisite: GERM 3013. (Typically offered: Irregular)

\section*{GERM 4133. The German Drama. 3 Hours.}

A study of the development of the forms and themes of the German drama from the middle ages to the present. Prerequisite: GERM 3013. (Typically offered: Irregular)

\section*{GERM 4143. German Lyric Poetry. 3 Hours.}

A study of the forms and themes of German lyric poetry from the middle ages to the present. Prerequisite: GERM 3013. (Typically offered: Irregular)

\section*{GERM 4213. German Civilization. 3 Hours.}

Explores the politics, cultural developments, and language of German-speaking countries since written evidence of their existence. Readings are drawn from current events and archived material, as well as literary or visual texts; listening practice includes news, informational videos, and archives of recorded events. Prerequisite: GERM 3003 or equivalent. (Typically offered: Spring)

\section*{GERM 4333. Professional German I. 3 Hours.}

Introduces students to the language of German used in the workplace and provides insights into business practices in German-speaking countries. Follows a project based approach and covers aspects of professional presentations, team assignments, business correspondence, resume writing and job application. Open to all majors; no business prerequisites. Prerequisite: GERM 3003 or GERM 3013 or consent of the instructor. (Typically offered: Irregular)
GERM 470V. Special Topics. 1-3 Hour.
May be offered in a topic not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
GERM 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Irregular) May be repeated for degree credit.

GERM 5013. Germany and the Holocaust: The Significance of the Holocaust in Differentiated Contexts. 3 Hours.
Taught in English. Topics covering the role of the Holocaust in German history, culture, art, language and German Studies. Equal emphasis will be placed on historical competence and philosophical/theoretical inquiry, addressed from a variety of media and primary and secondary sources. Graduate degree credit will not be given for both GERM 4013 and GERM 5013. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

GERM 5043. German Cinema. 3 Hours.
Presents a range of German films in cultural-historical context; vocabulary and structures for discussing film, film history, and film theory in German. Graduate degree credit will not be given for both GERM 4043 and GERM 5043. Prerequisite: GERM 3003. (Typically offered: Irregular)

GERM 5123. The German Novella. 3 Hours.
An intensive study of the novella as a genre from its origin to the present. (Typically offered: Irregular)

GERM 5133. The German Drama. 3 Hours.
A study of the development of the forms and themes of the German drama from the middle ages to the present. (Typically offered: Irregular)

GERM 5143. German Lyric Poetry. 3 Hours.
A study of the forms and themes of German lyric poetry from the middle ages to the present. (Typically offered: Irregular)

GERM 5223. Early German Literature: Middle Ages to the Enlightenment. 3 Hours.
Early German literature. (Typically offered: Irregular)
GERM 5273. German Literature: Enlightenment, Storm and Stress, and Classicism. 3 Hours.
German literature. (Typically offered: Irregular)
GERM 5343. Early Modern German Literature: Late 19th and Early 20th Century. 3 Hours.
Early modern German literature. (Typically offered: Irregular)
GERM 5363. German Literature after 1945. 3 Hours.
German literature after 1945. (Typically offered: Irregular)
GERM 5703. Special Topics. 3 Hours.
May be offered in a subject not specifically covered by the courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{Graduate Education Courses (GRSD)}

\section*{Courses}

GRSD 4101. Pathway to Graduate School. 1 Hour.
Designed to assist undergraduate students in making decision to apply to Graduate School and navigate the admissions process (Typically offered: Fall and Spring)
GRSD 5003. The Professoriate: Teaching, Learning and Assessment. 3 Hours. Designed to introduce the future academic professional to the expectations of the faculty teaching role in higher education. Topics include techniques of effective teaching and learning, dealing with a variety of institutional expectations, course management issues, and using models of effective teaching across a broad spectrum of class sizes and levels. (Typically offered: Spring)
GRSD 502V. Special Topics in Graduate Education. 1-3 Hour.
Seminar on selected topics for those anticipating a career teaching in higher education. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

GRSD 5033. Preparing for the Professoriate: Fundamentals. 3 Hours.
Focuses on topics of interest to future academic professionals beyond those related to teaching. Topics include developing a research statement, strategies for securing an academic position the general nature of employment and service expectations in higher education, research ethics, and funding issues, including grant proposal writing. (Typically offered: Fall)

GRSD 5051. Research Reproducibility and Replicability. 1 Hour.
Introduction to the research, tools and strategies used in reproducible and replicable research, as well as the ethics and norms of research transparency. Provides an overview of the concepts and tools necessary to achieve research transparency; to organize data and to report research in a reproducible manner. Explains the benefits of author disambiguation and of protecting intellectual property. (Typically offered: Fall and Spring)

GRSD 5091. Topics in Graduate Education. 1 Hour.
Special topics course on professionalization topics in Graduate Education (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
GRSD 5101. Introduction to Graduate School. 1 Hour.
A small-group, peer-led, extended-orientation program for first-semester graduate students. Designed to promote a positive student experience through social interaction, familiarization with campus resources, and peer mentorship. (Typically offered: Fall and Spring)
GRSD 5113. Introduction and Methods of Interdisciplinary Inquiry. 3 Hours. Serves as an introduction to interdisciplinary inquiry through an analysis of major research trends and methods at the graduate level. Provides tools to create an interdisciplinary research agenda to support transition to the capstone seminar/thesis project and create an integrative program of study. Required of all Interdisciplinary MA students. (Typically offered: Fall)
GRSD 5203. Capstone Seminar in Graduate Interdisciplinary Studies. 3 Hours. Capstone research seminar for graduate students pursuing the non-thesis option in seeking the Interdisciplinary Master of Arts degree. Emphasis on the synthesis, analyzation, and production of original research from knowledge and experience gained from previous coursework in the program as well as creating a final research project. Required for all students not pursuing a thesis project. (Typically offered: Spring)

GRSD 600V. Master's Thesis. 1-6 Hour.
Master's Thesis research. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Graphic Design (GDES)}

\section*{Courses}

GDES 2313. Design Tools and Concepts. 3 Hours.
Introduces Graphic Design students to design concepts with a concentration on professional industry tools. Emphasizes development of visual problem solving while creating well-crafted solutions. Prerequisite: ARTS 1919C and ARTS 1929C. (Typically offered: Fall)

GDES 3313. Typographic Systems 1. 3 Hours.
Examination of letterform construction, including anatomy and architecture. Analysis through a historical lens, exploring technological and cultural contexts. Typographic nuance and connotation. Introduction of the grid as a means to understand layout and organize typography. Prerequisite: ARTS 1919C and ARTS 1929C and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall)

\section*{GDES 3323. Typographic Systems 2. 3 Hours.}

Will introduce the complexity of adding imagery, both photographic and illustrative, into typographic layout. Management of hierarchy in a more advanced way through grid usage. Artifacts will span print to web, exploring how typography must always adapt to new contexts and audiences. Prerequisite: GDES 2313 and GDES 3313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Spring)

\section*{GDES 3383. User Experience. 3 Hours.}

Prepare students to design with usability and function at the forefront of their decision making. Personas, user scenarios and research to guide the design process. Exploration of the field of information architecture in order to clearly structure information and experience. Introduction to HTML, CSS, and other interactive languages. Prerequisite: GDES 2313, GDES 3313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

GDES 3393. Identity Systems 1. 3 Hours.
Beginning identity design course, focusing on theory and application of semiotics, through creation of icon sets and small scale applications. Emphasis placed on connotation, creating messaging and formal development. Prerequisite: GDES 3323 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall)

GDES 4303. Professional Development and Seminar. 3 Hours.
Preparation of students for professional practice and job seeking. Development of online and print portfolio and other collateral. Contemporary design practice through discussions, reading, writing, guest speakers and studio visits. Emphasis on assisting each student in preparing for their unique future. Prerequisite: GDES 3383 and GDES 3393 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Spring)

\section*{GDES 4313. Interactive Language. 3 Hours.}

Advanced course utilizing interactive languages to create responsive experiences for the web, touch screens. Exploration of the intersection of linear and non-linear design experiences in the application of motion to web. Prerequisite: GDES 3323 and GDES 3383 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

\section*{GDES 4323. Technology in Context. 3 Hours.}

Advanced course focusing on speculative explorations in the world of interaction design. Much of the work will be touch and gesture based and dealing with the built environment. Application of knowledge about proper workflow and execution in an advanced way. Prerequisite: GDES 4303 and GDES 4313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall)

\section*{GDES 4333. Special Topics in Graphic Design. 3 Hours.}

Topics dealing with trends, movements, and new elements within the design field, such as entrepreneurship, diversity, sustainability, critical issues, and data. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

\section*{GDES 4343. Identity Systems 2. 3 Hours.}

Advanced identity design course emphasizing creating cohesive messaging systems that cover a wide range of media. Creation of identity systems that are based on research and appropriate to content, context and audience. Media may span environmental, motion, print, web and packaging. Prerequisite: GDES 3393 and GDES 4313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

\section*{GDES 4353. Human Centered Design. 3 Hours.}

Research-based studio introducing design methods that focus on an audience centric process. Exposure to communication theory, modes of persuasion, sustainability, how to design for niche audiences. Prerequisite: GDES 4303 and GDES 4313 and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall)

\section*{GDES 4363. Design for Complexity. 3 Hours.}

Providing opportunity to address problems existing outside of the classroom with the focus shifting between design for good initiatives. Collaboration, research, problem seeking and solving will be addressed. Prerequisite: GDES 4323, GDES 4343, GDES 4353, and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

GDES 4373. Typographic Systems 3. 3 Hours.
Culminating typography course, exploration of typography at an advanced level through a variety of projects. Projects may range from type design to type in motion to complex publication design. Exhibition of the utmost professional ideation, process, execution and craft expected. Prerequisite: GDES 4303, GDES 4343, and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Fall and Spring)

\section*{GDES 4383. Degree Project. 3 Hours.}

Capstone course requiring completion of a self-directed project through in-depth research, writing and making, offering an opportunity to specialize prior to entering the job market. Prerequisite: GDES 4323, GDES 4343, GDES 4353, and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Spring)

\section*{GDES 4383H. Honors Degree Project. 3 Hours.}

Capstone course requiring completion of a self-directed project through indepth research, writing and making, offering an opportunity to specialize prior to entering the job market. Prerequisite: Honors standing, GDES 4323, GDES 4343, GDES 4353, and Bachelor of Fine Arts in Graphic Design majors only. (Typically offered: Spring)
This course is equivalent to GDES 4383.
GDES 439V. Special Problems in Graphic Design. 1-6 Hour.
Advanced individual projects in graphic design. Prerequisite: Any 4000 level GDES visual design course except GDES 4343. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

GDES 490VH. Honors Thesis in Graphic Design. 1-6 Hour.
Thesis hours for honors students completing an honors thesis. Prerequisite: Honors standing. (Typically offered: Fall and Spring)

GDES 494V. Graphic Design Internship. 1-6 Hour.
Credit for practical experience gained through internship in graphic design. Report required form intern and field supervisor on progress and significant accomplishments. 3 credit hours per semester. Prerequisite: Any 4000 level GDES visual design course except GDES 4343. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

GDES 5303. Design Pedagogy and Leadership. 3 Hours.
Explores the history and application of pedagogy related to careers in academia and professional practice. Focuses on methodologies for teaching, assessment, and curriculum writing. (Typically offered: Fall and Spring)
GDES 5313. Interactive Language. 3 Hours.
Advanced course utilizing interactive languages to create responsive experiences for the web, touch screens. Exploration of the intersection of linear and non-linear design experiences in the application of motion to web. Graduate degree credit will not be given for both GDES 4313 and GDES 5313. (Typically offered: Spring)

\section*{GDES 5323. Technology in Context. 3 Hours.}

Advanced course focusing on speculative explorations in the world of interaction design. Much of the work will be touch and gesture based and dealing with the built environment. Application of knowledge about proper workflow and execution in an advanced way. Graduate degree credit will not be given for both GDES 4323 and GDES 5323. Prerequisite: GDES 4303 and GDES 4313 or GDES 5313 (formerly GDES 4313). (Typically offered: Fall)

\section*{GDES 5333. Design Research Methods. 3 Hours.}

Examines research methods from other disciplines to apply those methods to contemporary design practice, focusing on the means of collecting information throughout the creative process, and incorporating the roles of visual research, including imaging, modeling, prototyping, and diagramming. (Typically offered: Fall and Spring)

GDES 5343. Identity Systems. 3 Hours.
Advanced identity design course emphasizing creating cohesive messaging systems that cover a wide range of media. Creation of identity systems that are based on research and appropriate to content, context and audience. Media may span environmental, motion, print, web and packaging. Graduate degree credit will not be given for both GDES 4343 and GDES 5343. Prerequisite: GDES 4303 and GDES 4313 or GDES 5313 (formerly GDES 4313). (Typically offered: Fall)
GDES 5353. Human Centered Design. 3 Hours.
Research-based studio introducing design methods that focus on an audience centric process. Exposure to communication theory, modes of persuasion, sustainability, how to design for niche audiences. Graduate degree credit will not be given for both GDES 4353 and GDES 5353. Prerequisite: GDES 4303 and GDES 4313. (Typically offered: Fall)

GDES 5363. Design Co-op. 3 Hours.
Collaboration with an organization, or design firm, providing opportunity to address problems existing outside of the classroom with the focus shifting between design for good initiatives. Collaboration, research, problem seeking and solving will be addressed. Graduate degree credit will not be given for both GDES 4363 and GDES 5363. Prerequisite: GDES 5323, GDES 5343, and GDES 5353. (Typically offered: Fall and Spring)

GDES 5373. Advanced Typography. 3 Hours.
Culminating typography course, exploration of typography at an advanced level through a variety of projects. Projects may range from type design to type in motion to complex publication design. Exhibition of the utmost professional ideation, process, execution and craft expected. Graduate degree credit will not be given for both GDES 4373 and GDES 5373. Prerequisite: GDES 5323, GDES 5343, and GDES 5353. (Typically offered: Spring)

GDES 5383. Design Writing and Dissemination. 3 Hours.
Explores diverse modes of writing in design, including reviews and the peer-review process, journal articles and abstracts, books, popular culture, grant and funding applications, thesis writing, and other mediums. (Typically offered: Fall and Spring)
GDES 5393. Design Theory: Past, Present, and the Future. 3 Hours.
Explores design theory that is both discipline-specific and interdisciplinary. Examines the application of theory and frameworks within the context of design, including the history of design theory as well as contemporary and future practices. (Typically offered: Fall and Spring)

GDES 594V. Graphic Design Internship. 1-6 Hour.
Credit for practical experience gained through internship in graphic design. Report required form intern and field supervisor on progress and significant accomplishments. 3 credit hours per semester. Graduate degree credit will not be given for both GDES 494V and GDES 594V. Prerequisite: Any 4000 level GDES visual design course except GDES 4343. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

GDES 6306. Design and Communities. 6 Hours.
Community-based design research focusing primarily on people and users, covering topics related to "wicked problems" and complexity in design that require a systemlevel approach. (Typically offered: Fall and Spring)

\section*{GDES 6316. Design and Technology. 6 Hours.}

Explores emerging technologies through the lens of what is plausible, possible, and preferable in the future of design. Examines topics related to data, policy, and the future of making while also considering interdisciplinary approaches and potential design outcomes. (Typically offered: Fall and Spring)

GDES 632V. Graduate Design. 1-6 Hour.
Individual problems in two and three dimensional design. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{GDES 6346. Design and Culture. 6 Hours.}

Examines the culture of the design discipline to further provoke the confines of the discipline, and understand the ways in which practitioners are accountable for design outcomes through interdisciplinary approaches. (Typically offered: Fall and Spring)

\section*{GDES 6353. Special Topics in Communication Design. 3 Hours.}

Topics dealing with trends, movements, and new elements within the design field, such as entrepreneurship, diversity, sustainability, critical issues, and data. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

\section*{GDES 6366. Thesis Preparation. 6 Hours.}

Develops a written thesis project proposal that demonstrates a viable project with a clear research direction. (Typically offered: Fall and Spring)

\section*{GDES 6399. Design Thesis. 9 Hours.}

Students will complete a thesis project that includes a designed system, written research paper, and public presentation. The thesis project should demonstrate the ability to tackle significant design and research challenges. (Typically offered: Fall and Spring)

\section*{Greek (GREK)}

\section*{Courses}

\section*{GREK 1003. Elementary Ancient Greek I. 3 Hours.}

The rudiments of classical Greek, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability. (Typically offered: Fall)

\section*{GREK 1013. Elementary Ancient Greek II. 3 Hours.}

A continuation of the rudiments of classical Greek, with concentration on grammar, vocabulary, and syntax. Short selection from ancient authors lead to basic reading ability. Prerequisite: LATN 1003 or GREK 1003, or equivalent. (Typically offered: Spring)
GREK 2003. Intermediate Ancient Greek I. 3 Hours.
Ancient Greek grammar and syntax, with readings in Greek prose. Prerequisite: GREK 1013 or equivalent. (Typically offered: Fall)

\section*{GREK 2013. Homer. 3 Hours.}

Selections from the lliad or the Odyssey: a survey of Greek epic poetry. Prerequisite: GREK 2003 or equivalent. (Typically offered: Spring)

\section*{GREK 4003. Greek Lyric Poetry. 3 Hours.}

Readings from selected Greek lyric poems, to be chosen from several appropriate authors from the 7th through the 5th centuries BCE: Archilochus, Hipponax, Sappho, Alcaeus, Tyrtaeus, Mimnermus, Semonides, Solon, Xenophanes, Theognis, Pindar, Bacchylides. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)
GREK 4013. Greek Epic Poetry. 3 Hours.
Study of the primary works of Greek hexameter poetry, including Homer, Hesiod, and/or the Homeric Hymns, with special attention to issues of oral composition and performance. Prerequisite: GREK 2013. (Typically offered: Irregular)

GREK 4023. Greek Philosophy. 3 Hours.
Study of representative works of Greek philosophy, including those of the PreSocratics, Plato, and/or Aristotle. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)
GREK 4033. Herodotus or Thucydides. 3 Hours.
Readings of Herodotus, Book VII, and Thucydides, Book VI; collateral readings on the Persian and Peloponnesian Wars. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

\section*{GREK 4043. Greek Drama. 3 Hours.}

Readings of 2 tragedies and one comedy; a study of the Greek theatre. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 4053. Greek Syntax and Composition. 3 Hours.
Greek syntax and composition. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 4063. Hellenistic Poetry. 3 Hours.
Selections from significant post-classical authors, including Callimachus, Theocritus, Bion, Moschus, Herondas, Apollonios of Rhodes, and/or poets of the Greek Anthology. Special attention to archaic and classical influences, contemporary Hellenistic culture, and Roman responses. Prerequisite: GREK 2013. (Typically offered: Irregular)

GREK 4073. Ancient Greek Novel. 3 Hours.
Study of the development of the Greek novel including the works of Lucian, Longus, Heliodorus, and/or Achilles Tatius. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

\section*{GREK 4083. Greek Epigraphy. 3 Hours.}

Study of inscriptions, especially Attic, in their historical and social contexts, from the 8th century BCE to the Hellenistic/Roman period. Training in epigraphical conventions and symbols. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 4093. Biblical and Patristic Greek. 3 Hours.
Selected readings from appropriate texts, varying by semester, including the Septuagint, New Testament, Apostolic Fathers, and other patristic literature to the 5th century CE. Reading and discussion of selected texts in major genres. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)
GREK 4103. Greek Oratory. 3 Hours.
Readings from selected speeches, to be chosen from one or more appropriate authors: Lysias, Antiphon, Demosthenes, Isocrates, Andocides. Study of sophism and rhetoric of Athens in the 5th and 4th centuries BCE. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

GREK 5003. Greek Lyric Poetry. 3 Hours.
Readings from selected Greek lyric poems, to be chosen from several appropriate authors from the 7th through the 5th centuries BCE: Archilochus, Hipponax, Sappho, Alcaeus, Tyrtaeus, Mimnermus, Semonides, Solon, Xenophanes, Theognis, Pindar, Bacchylides. Graduate degree credit will not be given for both GREK 4003 and GREK 5003. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 5013. Greek Epic Poetry. 3 Hours.
Study of the primary works of Greek hexameter poetry, including Homer, Hesiod, and/or the Homeric Hymns, with special attention to issues of oral composition and performance. Graduate degree credit will not be given for both GREK 4013 and GREK 5013. Prerequisite: GREK 2013. (Typically offered: Irregular)
GREK 5023. Greek Philosophy. 3 Hours.
Study of representative works of Greek philosophy, including those of the PreSocratics, Plato, and/or Aristotle. Graduate degree credit will not be given for both GREK 4023 and GREK 5023. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 5033. Herodotus or Thucydides. 3 Hours.
Readings of Herodotus, Book VII, and Thucydides, Book VI; collateral readings on the Persian and Peloponnesian Wars. Graduate degree credit will not be given for both GREK 4033 and GREK 5033. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

\section*{GREK 5043. Greek Drama. 3 Hours.}

Readings of two tragedies and one comedy; a study of the Greek theatre. Graduate degree credit will not be given for both GREK 4043 and GREK 5043. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 5053. Greek Syntax and Composition. 3 Hours.
Greek syntax and composition. Graduate degree credit will not be given for both GREK 4053 and GREK 5053. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

\section*{GREK 5063. Hellenistic Poetry. 3 Hours.}

Selections from significant post-classical authors, including Callimachus, Theocritus, Bion, Moschus, Herondas, Apollonios of Rhodes, and/or poets of the Greek Anthology. Special attention to archaic and classical influences, contemporary Hellenistic culture, and Roman responses. Graduate degree credit will not be given for both GREK 4063 and GREK 5063. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

\section*{GREK 5073. Ancient Greek Novel. 3 Hours.}

Study of the development of the Greek novel including the works of Lucian, Longus, Heliodorus, and/or Achilles Tatius. Graduate degree credit will not be given for both GREK 4073 and GREK 5073. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 5083. Greek Epigraphy. 3 Hours.
Study of inscriptions, especially Attic, in their historical and social contexts, from the 8th century BCE to the Hellenistic/Roman period. Training in epigraphical conventions and symbols. Graduate degree credit will not be given for both GREK 4083 and GREK 5083. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)

GREK 5093. Biblical and Patristic Greek. 3 Hours.
Selected readings from appropriate texts, varying by semester, including the Septuagint, New Testament, Apostolic Fathers, and other patristic literature to the 5th century CE. Reading and discussion of selected texts in major genres. Graduate degree credit will not be given for both GREK 4093 and GREK 5093. Prerequisite:
GREK 2013 or equivalent. (Typically offered: Irregular)
GREK 5103. Greek Oratory. 3 Hours.
Readings from selected speeches, to be chosen from one or more appropriate authors: Lysias, Antiphon, Demosthenes, Isocrates, Andocides. Study of sophism and rhetoric of Athens in the 5 th and 4 th centuries BCE. Graduate degree credit will not be given for both GREK 4103 and GREK 5103. Prerequisite: GREK 2013 or equivalent. (Typically offered: Irregular)
GREK 575V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{Health, Human Performance and Recreation (HHPR)}

\section*{Courses}

HHPR 5001. Health, Human Performance and Recreation Seminar. 1 Hour. This course exposes Department of Health, Human Performance and Recreation (HHPR) students to the research and scholarly activity that is happening by fellow students, faculty, and related constituents. Other activities include professional development and exposure to topics of interest that aid in career enhancement. The course will be graded on a Credit/Fail basis. Prerequisite: Admission into one of the following: Ph.D. in Health, Sport and Exercise Science (HSESPH), M.S. in Exercise Science (EXSCMS), Master of Public Health (PBHLMPH), Master of Athletic Training (ATTRMA), M.Ed. in Physical Education (PHEDME), or M.Ed. in Recreation and Sport Management (RESMME) programs. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

HHPR 5353. Research in Health, Human Performance and Recreation. 3 Hours. Methods and techniques of research in health, human performance and recreation including an analysis of examples of their use and practice in their application to problems of interest to the student. (Typically offered: Fall, Spring and Summer)

\section*{HHPR 6233. Management in HHPR. 3 Hours}

The course is designed to develop student understanding of the principles, procedures, relationships, problems, and current practices in the supervision of recreation, sport, health education and kinesiology in higher education. In addition, students also learn about accreditation, certification, decision making, and tenure systems. (Typically offered: Spring Odd Years)

HHPR 6333. Measurement in HHPR. 3 Hours.
This interdisciplinary course is designed to develop students' understanding of the data collection process from study conception through publication. We will emphasize aspects important to measurements, such as instrumentation, study design, reading and writing, and ethics. Students will apply these concepts to their area of research interest. (Typically offered: Irregular)

\section*{HHPR 6483. Grant Writing. 3 Hours.}

This course is designed to develop student understanding of the research grants process including identifying funding sources, preparation of grants and the grants review process. The course will be focused on the NIH platform which is the base model used for most biomedical research proposals. We will discuss and have guests to elaborate on other common funding sources and types of funding including: NSF, USDA, Corporate Funds and Research Contracts, Foundations (such as ACSM, AHA, etc.) (Typically offered: Spring Odd Years)

HHPR 689V. Directed Research. 1-6 Hour.
Laboratory investigations, in basic and applied research. (Typically offered: Fall, Spring and Summer)

HHPR 699V. Seminar. 1-3 Hour.
Seminar. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.
HHPR 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Higher Education (HIED) \\ Courses}

HIED 5003. Overview-American Higher Education. 3 Hours.
A basic course in the study of higher education open to all students seeking careers in colleges and universities. Serves as an introduction to the programs, problems, issues, and trends in higher education. (Typically offered: Fall)
HIED 5033. Student Affairs in Higher Education. 3 Hours.
Study of origins, functions, and policies in student personnel services in
contemporary 2-and 4-year colleges and universities with emphasis on the student and student development. (Typically offered: Fall)

HIED 5043. Student Development in Higher Education. 3 Hours.
Provides those who work or plan to work in post secondary educational institutions with an understanding of the student population in contemporary colleges and universities. (Typically offered: Spring)

HIED 504V. Practicum in Higher Education. 1-6 Hour.
Students are assigned to a department or agency within or outside the university for professional experience under the joint supervision of on-site personnel and university faculty. Periodic meetings are scheduled for evaluation, discussion, and examination of techniques. (Typically offered: Fall, Spring and Summer)

\section*{HIED 5053. The Community College. 3 Hours.}

An overview of the community college. Topics include the history and philosophy of the community college movement, students, curriculum, state and local campus governance, teaching, student personnel work, finance and issues, problems, and trends. (Typically offered: Irregular)

HIED 5063. Diversity in Higher Education. 3 Hours.
Broadly explores how sociocultural contexts influence diversity at colleges and universities. Focuses on the responsibilities of higher education leaders to be multiculturally competent professionals who foster inclusive practices for diverse student populations. (Typically offered: Irregular)

HIED 5073. Management of Higher Education Institutions. 3 Hours.
Principles and concepts of management and their application in college and university settings. (Typically offered: Fall and Summer)

HIED 5083. History and Philosophy of Higher Education. 3 Hours.
An examination of the history and development of higher education including the study of the philosophy, objectives, and functions of various types of institutions. (Typically offered: Spring)
HIED 5093. Research in Higher Education and Student Affairs. 3 Hours.
This course provides master's students an overview of research and literature applicable to the discipline; teaches students how to understand academic literature and use empirical evidence to inform practices and policies at colleges and universities. Prerequisite: MEd students in the Higher Education Program. (Typically offered: Fall, Spring and Summer)

HIED 5303. Non-Profit Fundraising. 3 Hours.
Non-Profit Fundraising examines the theory and practice of the professional field of fundraising and development, which is dedicated to attracting philanthropic support from constituents for colleges, universities, health organizations, hospitals, nonprofit organizations, museums and other philanthropic endeavors. (Typically offered: Irregular)

\section*{HIED 5643. Reflective Practice in Higher Education and Student Affairs. 3} Hours.
Provides students an opportunity to work in a functional area of higher education, reflect on how their experiences inform their career goals as higher education professionals, and learn job search strategies in higher education. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.
HIED 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{HIED 6013. The Professoriate: Problems and Issues. 3 Hours.}

An examination of the vital issues and trends affecting college faculty personnel with emphasis upon institutional practices and policies. (Typically offered: Irregular)

HIED 6023. Introduction to the Study of Higher Education. 3 Hours.
A requirement for all new doctoral and specialist students. Familiarization with writing requirements, library search procedures, library resources, and program requirements. Prerequisite: Admission to Higher Education Ed.D program. (Typically offered: Irregular)
HIED 605V. Independent Study. 1-6 Hour.
Provides students with an opportunity to pursue special study in higher education. (Typically offered: Fall, Spring and Summer)
HIED 6093. Leading Change. 3 Hours.
An in-depth examination of leadership, change, and culture in postsecondary education. (Typically offered: Irregular)

\section*{HIED 6303. Advancement in Higher Education. 3 Hours.}

Advancement in Higher Education examines the theory and practice of the professional field and function referred to as "institutional advancement", which is dedicated to attracting philanthropic support as well as building attitudinal and behavioral support among key constituents for colleges and universities. (Typically offered: Irregular)

HIED 6343. Teaching and Learning in Higher Education. 3 Hours.
An examination of teaching and learning in colleges and universities. (Typically offered: Irregular)

HIED 6353. The College and University Presidency. 3 Hours.
The course explores the basic elements of the presidency of an academic institution and examines the critical issues facing the college and university presidents/ chancellors. (Typically offered: Irregular)

HIED 6423. Trends, Issues and Problems in Higher Education. 3 Hours. A study of the current problems and trends related to the field of higher education. (Typically offered: Irregular)

\section*{HIED 6483. Strategic Enrollment Management. 3 Hours.}

An examination of admissions marketing strategies, communications plans, branding, and forecasting as well as how other areas (financial aid, honors, scholarships, and student affairs) contribute to successful recruitment efforts. Other key enrollment management areas of focus for the class include academic records, registration, degree audits, FERPA, student support, and most importantly, retention. Major state and federal legislation that underscores any of these activities will be discussed as well. (Typically offered: Irregular)

HIED 6533. Assessment of Institutional Effectiveness in Higher Education. 3 Hours.
The course examines the fundamentals of assessment of learning outcomes and institutional effectiveness and introduces assessment as a tool to inform strategic planning and data-driven decision-making in higher education. (Typically offered: Irregular)

\section*{HIED 6643. College Students in the United States. 3 Hours.}

Students will engage with the leading theoretical and empirical scholarship related to college students and use this information to engage in class discussion, complete course assignments, consider implications for practice, and contemplate opportunities for new scholarship. Prerequisite: Doctoral student in the Higher Education Program or instructor consent. (Typically offered: Irregular)

\section*{HIED 6653. Legal Aspects of Higher Education. 3 Hours.}

An examination of the legal status of higher education in the United States; the rights and responsibilities of educators and students including fair employment; due process; torts liability and contracts; student rights landmark court decisions; federal and state legislation having an impact on education. (Typically offered: Fall and Spring)

HIED 6663. Finance and Fiscal Management. 3 Hours.
Higher education finance and budgeting practices: problems, issues, trends, and policy issues in higher education. (Typically offered: Irregular)
HIED 6683. Governance and Policy Making in Higher Education. 3 Hours. An analysis of governance and policy making affecting the control of colleges and universities. Attention is given to policy generation, governing board supervision, and the impact of institutional, professional, and regional groups as well as community, state, and federal pressures. (Typically offered: Irregular)

HIED 6693. Research Techniques in Higher Education. 3 Hours.
Techniques of research applicable to Higher Education. (Typically offered: Irregular)

\section*{HIED 674V. Internship. 1-6 Hour.}

Supervised field experiences in student personnel services, college administration, college teaching, institutional research, development, or other areas of college and university work. (Typically offered: Fall, Spring and Summer)

HIED 699V. Seminar. 1-6 Hour.
A series of seminar for specialized study into areas of current significance in postsecondary education, such as leadership and planning; organization, development, and change; human resource development and appraisal; the student in higher education; etc. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

HIED 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{History (HIST)}

\section*{Courses}

HIST 1001. Perspectives in History. 1 Hour.
Introduction to the history major and to college life, emphasizing essential collegiate academic skills and the methods and techniques of the professional historian. Designed for history majors, history minors, and those with an interest in learning skills relevant to history, other humanities, or other social sciences. (Typically offered: Irregular)

HIST 1001H. Honors Perspectives in History. 1 Hour.
Introduction to the history major and to college life, emphasizing essential collegiate academic skills and the methods and techniques of the professional historian. Designed for history majors, history minors, and those with an interest in learning skills relevant to history, other humanities, or other social sciences. Prerequisite: Honors standing. (Typically offered: Irregular)
This course is equivalent to HIST 1001.
HIST 1113. Institutions and Ideas of World Civilizations I (ACTS Equivalency = HIST 1113). 3 Hours.
Introduces the major civilizations of the world in their historical context to 1500. (Typically offered: Fall and Spring)

HIST 1113H. Honors Institutions and Ideas of World Civilizations I. 3 Hours.
Study of Western and non-Western civilizations. (Typically offered: Irregular) This course is equivalent to HIST 1113.

HIST 1123. Institutions and Ideas of World Civilizations II (ACTS Equivalency = HIST 1123). 3 Hours.
Introduces the major civilizations of the world in their historical context, since 1500. (Typically offered: Fall and Spring)

HIST 1123H. Honors Institutions and Ideas of World Civilizations II. 3 Hours.
Study of Western and non-Western civilizations. (Typically offered: Irregular)
This course is equivalent to HIST 1123.
HIST 1203. History of Football. 3 Hours.
Explores the history of football in America from its invention in the nineteenth century, through its meteoric growth in the twentieth century, to the most recent developments. Examines the ways that the game has both reflected broader social and economic trends in America, and catalyzed them. (Typically offered: Irregular)

HIST 1223. History of Business in America. 3 Hours.
Surveys the evolution of American business enterprises, with emphases on entrepreneurs, technology and corporate structures, the role of governments and markets, and the challenges these businesses faced. (Typically offered: Fall Odd Years)
HIST 1233. History of Race and Medicine. 3 Hours.
Examines history of western biomedicine on the intersection of science, medicine, and race to trace origins of current racial disparities. Examples from the United States and other international developments. (Typically offered: Irregular) This course is cross-listed with AAST 1233.

HIST 2003. History of the American People to 1877 (ACTS Equivalency = HIST 2113). 3 Hours.

A history of American life encompassing constitutional, political, social, intellectual and economic development from prior to European colonization to 1877. (Typically offered: Fall, Spring and Summer)

HIST 2013. History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123). 3 Hours.
A history of American life encompassing constitutional, political, social, intellectual and economic development from Reconstruction to the present. (Typically offered: Fall, Spring and Summer)

\section*{HIST 2093. Animals in World History. 3 Hours.}

Survey of the interrelationship between human and nonhuman animals in comparative historical settings. The course is interdisciplinary by design and draws from social history, cultural studies, religious history, literature, film, and visual culture to gain a deeper sense of how animals have been integral to human societies. (Typically offered: Fall and Spring)

HIST 2203. History of Tomorrow: Global Visions of the Future. 3 Hours.
Survey of cultural visions of the distant future in the modern era as represented in architecture, art, literature, popular culture, and religious practice. Emphasis on the articulation of future vision in the context of cross-cultural encounters, conflict and war, globalization, modernization, and technological development. (Typically offered: Irregular)

\section*{HIST 3003. History of Christianity. 3 Hours.}

This course surveys the theological, political, and cultural history of Mediterranean Christianity, c. 30-600 CE. Special topics include patristics, Christianity and Empire, and the formation of Christian sacred space. (Typically offered: Irregular)

HIST 3013. Ancient Historians. 3 Hours.
Survey of ancient historiography from Herodotus (5th c BCE) to Ammianus Marcellinus (4th c CE). Topics covered include the development of ancient history, historical causality, rhetoric and history, military history, historical biography, use of polemic, Roman adaptations of Greek models, and the portrayal of the "other" in history. (Typically offered: Fall)

\section*{HIST 3033. Islamic Civilization. 3 Hours.}

A survey of the foundation, evolution, and distinctive character of Islam, with attention to religion, literature, art, architecture, science, and political society. Particular attention given to the development of Islamic doctrines, sectarian movements, and systematic theology. Concludes with a look at Islamic resurgence movements and their place in the contemporary world. (Typically offered: Irregular)

\section*{HIST 3043. History of the Modern Middle East. 3 Hours.}

Examines the history of the Islamic Middle East from the rise of the Ottoman and Safavid Persian empires up to World War I and then concludes with the issues and patterns of 20th century Middle Eastern political and socio-economic life. Topics include Islam and politics, Arab nationalism, Western imperialism, the Arab-Zionist conflict, petroleum politics, and modernization vs. traditionalism. (Typically offered: Irregular)

\section*{HIST 3063. Military History. 3 Hours.}

Survey of the basic principles and problems of strategy, tactics, and military organization from Alexander the Great to the present. Special attention will be given to the operation of these factors in the American Revolution, the Napoleonic Wars, the American Civil War, and World War II. (Typically offered: Irregular)

HIST 3093. Women in U.S. History. 3 Hours.
Examines women in U.S. History from the early encounters of North American colonization to the gendered experiences of American women in the present day. (Typically offered: Irregular)

\section*{HIST 3103. European Integration and Globalization. 3 Hours.}

Interdisciplinary study of the cultural, economic, and political processes of modern European integration in the context of a changing relationship between Europe and the wider world during the 20th and 21st centuries. (Typically offered: Fall Even Years)
This course is cross-listed with INST 3303

\section*{HIST 3133. History of Sports in Africa. 3 Hours.}

This course considers the ways that Africans have strategically employed sports to confront and overcome both domestic and external challenges and how these approaches and the range of constituent strategies have changed over time. (Typically offered: Irregular)
This course is cross-listed with AAST 3133.

HIST 3193. The Making of the Modern Caribbean. 3 Hours.
History of the Caribbean from pre-Columbian to present times focusing in particular on indigenous origins, colonialism, slavery, rebellion, independence, nationalism, and political integration in the making of the modern Caribbean region. (Typically offered: Fall)
This course is cross-listed with AAST 3193.
HIST 3203. Colonial Latin America. 3 Hours.
An introduction to the social, cultural, political and economic formation of Latin America, during the period from 1492 to the movements for independence. (Typically offered: Fall Odd Years)
This course is cross-listed with LALS 3203.

\section*{HIST 3213. Modern Latin America. 3 Hours.}

An investigation of the varying courses of modernization in Latin America, covering popular revolution, urban populism and military dictatorship. (Typically offered: Spring Even Years)
This course is cross-listed with LALS 3213.
HIST 3233. African American History to 1877. 3 Hours.
History of the African American experience in North America emphasizing economic, social, and cultural perspectives. Topics include the African slave trade, the creation of race and racism, the institution of slavery, free community formation in North, and the impact of the Civil War and Reconstruction on African Americans. (Typically offered: Fall and Spring)
This course is cross-listed with AAST 3233.
HIST 3243. African American History Since 1877. 3 Hours.
The course will study the major social, political, and economical issues relating to the African American experience beginning with the late post-Reconstruction period and will include, all of the major personalities and influences in the Civil Rights Movement, from 1877 to the present. (Typically offered: Fall and Spring)
This course is cross-listed with AAST 3243.

\section*{HIST 3253. The History of Sub-Saharan Africa. 3 Hours.}

Sub-Saharan African history from the 18th century to the present, with emphasis on the impact of the slave trade, colonization, Independence, and contemporary issues of the post-colonial period. Examination of the ways Africans experienced change in terms of culture, society, economics, gender, religion, politics, and labor. (Typically offered: Fall)
This course is cross-listed with AAST 3253.

\section*{HIST 3263. History of the American Indian. 3 Hours.}

Survey of North American Indian history from their arrival include pre-Columbian Indian history, the interaction of Indian and white societies, U.S. Government policy, and the role of Indians in modern American culture. (Typically offered: Fall)

HIST 3273. Agricultural and Rural History of the United States. 3 Hours. The history of U.S. agriculture from the pre-Columbian period through the twentyfirst century. Focuses on the social and economic implications of agricultural development and the changing nature of rural life in the late twentieth century. (Typically offered: Irregular)

HIST 3283. U.S. Latinos and Latinas through Film. 3 Hours.
This course will examine the portrayal of U.S. Latinos and Latinas in Hollywood films and how those images have changed over time. While coverage will extend to the early years of the twentieth century, the chosen films will place particular emphasis on the century's second half, from the Cold War to the modern day. (Typically offered: Spring)
This course is cross-listed with COMM 3283, LALS 3283.
HIST 3293. History of Popular Culture. 3 Hours.
Historical survey of the popular arts in American with emphasis upon 20th century. Principal topics are the history of bestsellers, the theatre, popular music, movies, radio, television, and sports. (Typically offered: Irregular)

HIST 3303. U.S. Immigration History. 3 Hours.
Examines the migration of ethnic groups into the United States from geographical areas that include Europe, Asia, Africa, and Latin America. Special emphasis will be given to cultural history, and will trace the impact of industrialization, urbanization, class formation, and popular culture on various ethnic groups. (Typically offered: Irregular)
This course is cross-listed with LALS 3303.
HIST 3313. Latinos and Latinas in the U.S.. 3 Hours.
Examines the emergence and growth of the Latino population of the United States. A broad survey of the Latino experience will complement more specific case studies focusing on cultural identity and the generational process of acculturation into the American mainstream. (Typically offered: Fall)
This course is cross-listed with LALS 3313.
HIST 3323. The West of the Imagination. 3 Hours.
The changing image of the American West from the colonial period to the present and how popular impressions have reflected national attitudes and values. Special attention given to the West's portrayal in folklore, literature, art, films, and television. (Typically offered: Irregular)

\section*{HIST 3333. LGBTQ+ Histories. 3 Hours.}

How have gender and sexuality conceptions changed from the sixteenth century to the present? Who defined which sexual practices were deviant, when and why did those ideas transform? When and why did the terms lesbian, gay, bisexual, transgender, queer, and intersex arise, and become linked? (Typically offered: Irregular)

\section*{HIST 3363. The Atlantic World, 1400-1850. 3 Hours.}

Explores the political, economic, cultural, and social engagement of Africans, Europeans, and Native Americans across the Atlantic from 1400 to 1850. It uses a comparative lens to understand how interactions between Europe, Africa, and the Americas created enduring ties throughout the Atlantic Basin. (Typically offered: Irregular)

HIST 3373. Rise of the American Empire: War, Migration and Expansion, 1789-1917. 3 Hours.
Explores the history of U.S. expansion and imperialism from the nation's founding to the start of World War I. It proceeds both chronologically and thematically, considering the evolution of U.S. imperialism and its various manifestations territorial, political, economic, and cultural. (Typically offered: Irregular)
This course is cross-listed with LALS 3373.
HIST 3383. Arkansas and the Southwest. 3 Hours.
Political, economic, social, and cultural development of Arkansas from the coming of the Indian to the 20th century, with special emphasis on Arkansas as a national and regional component. (Typically offered: Fall, Spring and Summer)

HIST 3393. The Ozarks: People, Place, and Time. 3 Hours.
Study of the histories, cultures, literature, and economics of the Ozark region of the United States from the late 18th century until the present. (Typically offered: Irregular)

\section*{HIST 3423. British History, 1688-Present. 3 Hours.}

A survey of British history from the Glorious Revolution of 1688 to the Present, covering the political, social, cultural, and military history of Britain during those years. (Typically offered: Irregular)

HIST 3433. Twentieth Century Britain through Film. 3 Hours.
Explores 20th Century British History through the medium of film, analyzing how 20th Century British history has been represented/misrepresented in film, and investigating what these portrayals of Britain in the twentieth century reveal about British history. (Typically offered: Irregular)

\section*{HIST 3443. Modern Imperialism. 3 Hours.}

Examines the causes, nature, and consequences of modern imperialism. The histories of five different empires are studied and compared to give an overview of the phenomenon. (Typically offered: Irregular)

HIST 3453. Modern Terrorism. 3 Hours.
Examines the historical foundations and course of modern terrorism, from the French Revolution to the present. Special attention is given to the Irish Republican Army, Baader Meinhoff Gang (Red Army Faction), the American militia movement, and al-Qaeda. (Typically offered: Irregular)

\section*{HIST 3473. Palestine and Israel in Modern Times. 3 Hours.}

History of 19th-20th Century Palestine, Zionism and the founding of modern Israel, and the Palestine-Israel conflict in local and regional perspective. (Typically offered: Irregular)

\section*{HIST 3523. Modern China. 3 Hours.}

Survey of Chinese culture, society, government and diplomacy between1644 and the present. (Typically offered: Spring)

HIST 3533. World War II. 3 Hours.
Study of the causes, conduct and consequences of the Second World War.
(Typically offered: Spring)
This course is cross-listed with AIST 3533.
HIST 3543. Russia to 1861. 3 Hours.
Study of the political, social and cultural development of Russia from the Kievan era through the Napoleonic invasion. (Typically offered: Fall)

\section*{HIST 3553. Russia Since 1861. 3 Hours.}

Survey of political, cultural and intellectual trends in modern Russia with emphasis upon the Revolutions of 1917, the Soviet Union, and its successor states. (Typically offered: Spring)

\section*{HIST 3573. World War I. 3 Hours.}

Explores the Great War's origins, major and minor battles, the role of technology, and the experience of soldiers. Examines the internal conflicts the war created, the ideologies it spawned, and the social relationships it permanently altered. (Typically offered: Irregular)

\section*{HIST 3583. The United States and Vietnam, 1945-1975. 3 Hours.}

A survey and analysis of the Vietnam War with special emphasis on its impact on American and Indochinese society. (Typically offered: Fall)
HIST 3593. The 1960s: A World Transformed. 3 Hours.
The tumultuous decade of the 1960s witnessed global political, social and cultural upheavals. We will study movements for change in the United States, as well as in Europe, China, Vietnam, and Latin American. Topics will include the New Left, the counterculture, and the student, civil rights, antiwar and women's movements. (Typically offered: Spring Odd Years)
HIST 3603. Colonial and Revolutionary America, 1600-1789. 3 Hours.
Survey of colonial and revolutionary American history, emphasizing economic, social, and cultural perspectives. Topics include historical interpretations of Native American, French, Spanish, English, Dutch, and Russian interactions in North America as well as the causes of the American Revolution and formation of the new national government. (Typically offered: Irregular)

HIST 3613. Early National and Antebellum America, 1789-1850. 3 Hours. Survey of early national and antebellum America emphasizing economic, social, and cultural perspectives. Topics include the impact of westward expansion, slavery, religion, gender, the market economy, and political developments on the new nation. (Typically offered: Irregular)

\section*{HIST 3623. Black Movements and Messiahs. 3 Hours.}

This course will focus on global African history since the Age of Revolutions to the present with special attention to the movements and leaders in various fields who proposed strategies and led movements to advance Africa, Africans and the diaspora. (Typically offered: Irregular)

\section*{HIST 3633. Modern Japan. 3 Hours.}

Examines the dramatic changes in Japan from the nineteenth century to the twentyfirst century in a global, historical perspective. Through the lenses of imperialism and war, society and gender, and technology and environment, students will develop an understanding of Japan's place in our modern world. (Typically offered: Fall Odd Years)
This course is cross-listed with AIST 3633.

\section*{HIST 3683. Europe in the 19th Century. 3 Hours.}

Examines the political, social, and cultural history of Europe during the "long" nineteenth century from the French Revolution of 1789 to the outbreak of the First World War in 1914. (Typically offered: Irregular)
HIST 3693. Europe in the 20th Century. 3 Hours.
Examines the political, social, and cultural history of Europe during the twentieth century from the outbreak of the First World War to the collapse of Communist states in Eastern Europe in 1989. (Typically offered: Irregular)

\section*{HIST 3713. Issues in Public History. 3 Hours.}

Contemporary theory and practice of public history. Discussion of the historian's role in the public sphere, the relationship between history and memory, and the professional opportunities in the field. (Typically offered: Irregular)

\section*{HIST 3763. History of Central Asia. 3 Hours.}

History of Central Asia from antiquity to modern age, including Alexander's conquests, the formation of the Silk Road, the rise of the pre-Islamic Turkic politics, the coming of Islam, the steppe empires of the Chinggisids and the Timurids, and modern age of Russian/Soviet and Chinese imperial and communist-era dominance. (Typically offered: Irregular)

\section*{HIST 3883. Modern Italy and the World, 1861-Present. 3 Hours.}

A survey analyzing Italy from unification (Risorgimento of the 1800s) to the present. While focusing on the history of the country in its multifaceted aspects, the course also offers a comparative approach, helping students analyze Italy in the context of European integration and major international developments. (Typically offered: Irregular)

\section*{HIST 3923H. Honors Colloquium. 3 Hours.}

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in history). (Typically offered: Irregular) May be repeated for degree credit.

\section*{HIST 3973. Historical Methods. 3 Hours.}

Practical introduction to historical research and writing. Examines research methods and current theories of interpreting and evaluating the past. Prepares students for thesis development and writing. Prerequisite: Students must be a history major. (Typically offered: Fall)

\section*{HIST 3973H. Honors Historical Methods. 3 Hours.}

Practical introduction to historical research and writing. Examines research methods and current theories of interpreting and evaluating the past. Prepares students for honors thesis development and writing. Prerequisite: Honors standing and a history major. (Typically offered: Fall)
This course is equivalent to HIST 3973.

\section*{HIST 398V. Special Topics. 1-6 Hour.}

Historical topics which are not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{HIST 398VH. Honors Special Topics. 1-3 Hour.}

Historical topics which are not usually presented in depth in regular courses.
Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to HIST 398V.

HIST 4003. Democratic Athens. 3 Hours.
History of the Athens from the sixth century BCE to the end of the fourth. Topics include origins and evolution of democracy, the Persian wars, the rise and fall of the Athenian Empire, and the development of historiography, literature, art, and philosophy during the period. (Typically offered: Irregular)

HIST 4013. Alexander the Great and the Hellenistic World. 3 Hours.
A survey of the achievements of Alexander and the culture of the new world he created. The personality and career of Alexander are examined as well as the rich diversity of the Hellenistic world: trade with India, religious syncretism, and the development of Hellenistic science and philosophy. (Typically offered: Irregular)

HIST 4023. Roman Republic. 3 Hours.
History of Rome from its origins in the eighth century BCE to the fall of the Republic in the first century BCE. Topics include the sources for Roman history, the development, functioning, and ultimate failure of republican government, the Roman army, and Roman imperialism in Italy and the Mediterranean. (Typically offered: Irregular)

\section*{HIST 4033. Roman Empire. 3 Hours.}

History of Rome from the Emperor Augustus to Constantine, ca. 30 BCE - 337 CE. Topics include the sources for imperial Rome, the organization of imperial government, the provinces of Rome and provincial government, art and literature under the empire, the rise of Christianity, and the conversion of the Empire. (Typically offered: Irregular)

\section*{HIST 4043. Late Antiquity and the Early Middle Ages. 3 Hours.}

This course examines the political, spiritual, intellectual, and social-economic developments of European history, c. 300-1000 CE. Special topics include the Christianization of the late Roman Empire and Byzantium, as well as the formation of Celtic and Germanic Kingdoms in the West. (Typically offered: Fall Even Years)
HIST 4053. Late Middle Ages. 3 Hours.
This course examines the political, social-economic, intellectual, and spiritual developments of European history, c. 1000-1400 CE. Special topics include monasticism, sacral kingship, the crusades, and the medieval university. (Typically offered: Spring Odd Years)

\section*{HIST 406V. Independent Study. 1-6 Hour.}

Study Abroad project; other special topics for independent study. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HIST 4073. Renaissance and Reformation, 1300-1600. 3 Hours.
Examines the history of Europe from the end of the Middle Ages through the Renaissance to the Reformation and Counter-Reformation. Special attention is paid to changes in popular piety, political thought, religious representation, and the discovery of the New World. (Typically offered: Fall Odd Years)

\section*{HIST 4083. Early Modern Europe, 1600-1800. 3 Hours.}

Begins with the upheaval of the reformation, moves through the crisis of the 17th century and culminates with the democratic revolution of the 18th century. Examines the consolidation of the European state system, the propagation of modern science, discovery of overseas worlds, and the advent of the Industrial Revolution. (Typically offered: Spring Even Years)

\section*{HIST 4103. Byzantine Empire. 3 Hours.}

Examines the history and culture of the Byzantine Empire from the reign of Constantine I to the fall of Constantinople in 1453. Topics include the development of Christianity and the schism with the western church, the crusades, and Byzantine influence on Islam, Russia, the Ottomans, and the Renaissance. (Typically offered: Irregular)

\section*{HIST 4113. Archaic Greece. 3 Hours}

History of Greece from the late Bronze Age to the end of the Persian Wars. This class will focus particularly on the sources involved with reconstructing early Greek history, especially Herodotus and Homer, on the development of the Greek city-state or polis, and on the interaction between the Greeks and Near-eastern civilizations during this period, culminating in the wars between the Greeks and the Persian Empire. (Typically offered: Irregular)

HIST 4123. Africa and the Trans-Atlantic Slave Trade. 3 Hours.
Examines the trans-Atlantic slave trade with a primary focus on the role of Africa and Africans in creating the unique economy and culture of the trans-Atlantic world. (Typically offered: Irregular)
This course is cross-listed with AAST 4123.
HIST 4133. Society and Gender in Modern Europe. 3 Hours.
Changing values and attitudes toward childhood, family life, sexuality, and gender roles in Europe from the Renaissance to the present. The social impact of the Industrial Revolution, urbanization, demographic change, and the two world wars. (Typically offered: Spring Odd Years)

HIST 4143. Intellectual History of Europe Since the Enlightenment. 3 Hours. A survey of the major developments in European thought and culture since the emergence of Romanticism. Topics include Romanticism, Darwinism, Marxism, and Modernism. (Typically offered: Fall Even Years)

\section*{HIST 4163. Tudor-Stuart England, 1485-1714. 3 Hours.}

Examines the history of the British Isles from the ascension of Henry VII and the Tudor dynasty until the close of the Stuart Era in 1714. Special attention is given to the English Reformation, the Elizabethan years, the 17th Century Revolutions, and the birth of an overseas Empire. (Typically offered: Fall Odd Years)

HIST 4173. The Latin American City. 3 Hours.
This course examines the social, political, and cultural aspects of the modern Latin American city from an interdisciplinary perspective. The course includes an introduction to urban studies concepts, and each semester is organized around a specific set of case studies. (Typically offered: Irregular)

\section*{HIST 4183. Great Britain, 1707-1901. 3 Hours.}

Examines the history of the British Isles from the 1707 Act of Union between Scotland and England until the death of Queen Victoria in 1901. Special attention is given to the spread of Empire, industrialization, and the political, social, and cultural aspects of the Georgian and Victorian Eras. (Typically offered: Fall Even Years)

HIST 4193. Great Britain,1901-2001. 3 Hours.
Examines the history of the British Isles from the death of Queen Victoria in 1901 to the reelection of Prime Minister Tony Blair in 2001. Special attention is given to the collapse of the British Empire, the birth of the welfare state, and the challenges inherent in the decline of British world power. (Typically offered: Spring Odd Years)

\section*{HIST 4203. History of the Holocaust. 3 Hours.}

Examines the origins, history, and legacies of the European Holocaust. Traces the origins of anti-Semitism in Europe, the rise of Nazism in Germany, the path to genocide during World War II, and the role of victims, perpetrators, rescuers, and bystanders. Considers issues of memory and justice in the postwar era. (Typically offered: Irregular)

\section*{HIST 4213. The Era of the French Revolution. 3 Hours.}

France from the salons of the Enlightenment to the Napoleonic Wars. The French Revolution will be explored in terms of politics and personalities, ideas and symbols, class and gender relations, and violence and terror. (Typically offered: Fall Odd Years)

HIST 4223. France Since 1815. 3 Hours.
Survey of French history from the overthrow of Napoleon to the 5th Republic, with emphasis on French politics, society, and culture. (Typically offered: Spring Even Years)

HIST 4253. Germany, 1918-1945. 3 Hours.
Study of German history from advent of the Weimar Republic to the end of the Third Reich with emphasis upon the failure of democratic government in the 1920s and the rise and fall of the National Socialist dictatorship. (Typically offered: Irregular)

\section*{HIST 4263. Modern Africa. 3 Hours.}

Examines the last half-century of Africa's history, focusing on the last few decades. Introduction of Africa's colonial past, revolutions and struggles for independence. Review of African development in the post-colonial and contemporary era, successes and failures of independent Africa, and the challenges the continent faces today. (Typically offered: Irregular)
This course is cross-listed with AAST 4263.

\section*{HIST 4303. Transatlantic Relations, 1919-Present. 3 Hours.}

US-Western European Relations, from the Wilsonian era to the present, covering strategic, economic, and cultural aspects. (Typically offered: Irregular)

HIST 4323. Wars of Religion: From the Crusades to \(9 / 11\). 3 Hours.
Examines the place of religion in combat across the centuries. A case study approach is used to explore different conflicts from the twelfth century crusades against Muslim forces to \(9 / 11\). Investigates how religious motivations may or may not be related to other political, social, cultural, economic concerns. (Typically offered: Irregular)

\section*{HIST 4333. Modern Islamic Thought. 3 Hours.}

Main currents in Islamic theology and political philosophy from the Ottoman Empire to the end of the twentieth century. (Typically offered: Irregular)

\section*{HIST 4343. Golden Age Portugal and Spain. 3 Hours.}

This course will examine the diverging and converging paths of Portugal and Spain during the early modern period (15th-17th centuries). We will chart their rise as global imperial powers and their initial declines. We'll explore the political, social, and religious contexts in which Golden Age Iberia flourished. (Typically offered: Spring Even Years)

HIST 4363. The Middle East since 1914. 3 Hours.
Middle East since 1914 addresses European colonialism, the rise of new social elites, independence, revolution, globalization, economic self-determination, persistent regional conflicts and ongoing battles over "cultural authenticity".
(Typically offered: Irregular)

\section*{HIST 4383. The American Civil Rights Movement. 3 Hours.}

Introduction to the history and development of the civil rights movement in the United States. (Typically offered: Irregular)
This course is cross-listed with AAST 4383.
HIST 4393. Early Modern Islamic Empires, 1300-1750. 3 Hours.
An examination of the historical development of the three great Islamic empires in the early modern period- the Ottomans, the Safavids of Iran, and the Mughals of India. Special attention given to imperial expansion, administrative structures, religious-legal establishment, and the formation of distinct traditions in political ideology, historiography, and the arts and sciences. (Typically offered: Spring Even Years)

HIST 4403. Islam in Asia. 3 Hours.
Introduces students to the history of Islam in East and Southeast Asia over the past 1,200 years. It focuses on the 18th-21st centuries when Muslims were part of everyday life in Asia and participated in the formation of majority and minority identities in the region. (Typically offered: Irregular)
This course is cross-listed with AIST 4403.
HIST 4413. New Women in the Middle East. 3 Hours.
This course covers the transformation of social and cultural roles of women in the Middle East since the 19th Century. Emphases include political emancipation, religious reformation, artistic representation, and gendered re-definition. (Typically offered: Irregular)

HIST 4433. Social and Cultural History of the Modern Middle East. 3 Hours. An analysis of Middle East history in the 17th-20th centuries which focuses on the social transformation of urban and rural life. Particular emphasis is given to the roles of economics, genealogy, art, and popular culture. (Typically offered: Irregular)

HIST 4443. Frontiers and Borderlands in Colonial Latin America. 3 Hours. This course examines frontiers and borderlands in colonial Latin America and focuses on the regions of California, New Mexico, Texas, Brazil, and the Río de la Plata. It demonstrates that frontiers and borderlands are defined by the absence of a hegemonic European power and associated with the prevalence of Indigenous norms. (Typically offered: Irregular)
This course is cross-listed with LALS 4443.

\section*{HIST 4463. The American Frontier. 3 Hours.}

American westward expansion and its influence on national institutions and character. Emphasis on the pioneer family and the frontier's role in shaping American society, culture, economy, and politics. Topics include exploration, the fur trade, the cattle kingdom and the mining, farming, and military frontiers. (Typically offered: Fall Odd Years)

HIST 4493. Religion in America to 1860. 3 Hours.
History of religion in early America, primarily from a social and cultural perspective. Topics will include region, social class, growth of institutions, slavery, print culture, and social reform in traditions including Protestantism, West African religion, Catholicism, Native American religion, and Judaism. (Typically offered: Irregular)

HIST 4503. History of Political Parties in the United States, 1789-1896. 3 Hours. Origin and development of the American party system from the implementation of the constitution to the election of McKinley. (Typically offered: Fall Even Years) This course is cross-listed with PLSC 4303.

HIST 4513. History of Political Parties in the United States Since 1896. 3 Hours.
Response of the party system to America's emergence as an industrial nation and world power from the election of 1896 to present. (Typically offered: Spring Odd Years)

This course is cross-listed with PLSC 4313.
HIST 4563. The Old South, 1607-1865. 3 Hours.
Survey of the political, social, and economic development of the antebellum South. (Typically offered: Irregular)
This course is cross-listed with AAST 4563.
HIST 4573. The New South, 1860 to the Present. 3 Hours
Survey of the development of the Civil War and postwar South to the present.
(Typically offered: Irregular)
This course is cross-listed with AAST 4573.
HIST 4583. Arkansas in the Nation. 3 Hours.
Designed to provide advanced undergraduate and graduate students with a comprehensive understanding of the full sweep of Arkansas history. The focus will be on social, economic and political history, and historiography. (Typically offered: Irregular)

HIST 4593. The Colonial French in the Mississippi Valley. 3 Hours.
This course focuses on the French Colonial Mississippi Valley from 1698 until 1763. Activities for both French and non-French speaking students provide a rich environment to discuss encounters, subsistence strategies, and warfare faced by native peoples, missionaries, explorers, and colonists alike. Students will examine primary handwritten, transcribed, or translated sources. (Typically offered: Spring)

\section*{HIST 4603. U.S. Labor History to 1877. 3 Hours.}

Examines the changing nature of work in U.S. history from 1607 until 1877 including the ways that workers--individually and collectively-- understand the meanings of their labor and to the ways that notions of class, gender, ethnicity, and race inform these understandings. (Typically offered: Irregular)

HIST 4613. Colonial America 1600-1763. 3 Hours.
History of colonial America from 1600 to the end of the Seven Years War emphasizing economic, social, and cultural perspectives. Topics include Native American, French, Spanish, English, Dutch, and Russian interactions in North America and the larger Atlantic World. (Typically offered: Irregular)

HIST 4623. Revolutionary America, 1763 to 1789. 3 Hours.
History of revolutionary America emphasizing economic, social, and cultural perspectives. Topics include historical interpretations of the causes of the war, the impact of war on African Americans, women, loyalists, elite, and poor Americans The course also examines the formation of the new national government. (Typically offered: Irregular)

HIST 4643. Early American Republic, 1789-1828. 3 Hours.
History of the early United States emphasizing social and cultural perspectives. Topics addressed will include westward expansion, slavery, religion, and economic change. (Typically offered: Irregular)

HIST 4653. Antebellum America, 1828-1850. 3 Hours.
History of antebellum U.S. emphasizing social and cultural perspectives. Topics addressed will include slavery, religion, gender, the market economy, regionalism, and political developments. (Typically offered: Irregular)

HIST 4663. Rebellion to Reconstruction, 1850-1877. 3 Hours.
A survey of political, social, and economic issues from the late antebellum period through Reconstruction. Emphasis is placed on the causes of the Civil War and the problems of postwar America. A brief examination of the Civil War is included. (Typically offered: Irregular)

\section*{HIST 4673. The American Civil War. 3 Hours.}

An intensive study of the political, social, military, and economic aspects of the American Civil War period. (Typically offered: Fall)

HIST 4693. Approaching Global History. 3 Hours
Explores theoretical perspectives on global history through a treatment of the historiographical development of the field, readings of landmark texts, and selected case studies of global themes. (Typically offered: Irregular)
This course is cross-listed with INST 4693.
HIST 4703. Emergence of Modern America, 1876-1917. 3 Hours.
A survey of the impact of the Industrial Revolution, Imperialism, and progressivism upon American life and institutions. (Typically offered: Fall Odd Years)

HIST 4713. Women, Gender, and Sexuality in Colonial Latin America. 3 Hours. This course examines women, gender, and sexuality in colonial Latin America. It explores the lives of indigenous, Spanish, African, and mixed-race women from all social ranks. A central question is: does the current status of women in Latin America stem from a colonial legacy of gender oppression and sexual repression? (Typically offered: Irregular)
This course is cross-listed with LALS 4713.

\section*{HIST 4723. America Between the Wars, 1917-1941. 3 Hours.}

The impact of World War I, the 1920s, and the Great Depression upon American society and culture. (Typically offered: Spring Even Years)

\section*{HIST 4733. Recent America, 1941 to the Present. 3 Hours.}

A general survey of American history since World War II with emphasis upon the presidency, reform movements, the Cold War, and cultural developments. (Typically offered: Irregular)

HIST 4743. The Cold War in Latin America: Revolutions, Violence, and Politics. 3 Hours.

This course will trace the rise of the ideological and political struggles over social and economic development and the security regimes designed to thwart socialist revolution and political mobilization. The influence of the United States in Latin American security regimes and "containment" activities will receive special attention. (Typically offered: Irregular)
This course is cross-listed with LALS 4743.

HIST 4763. Diplomatic History of the United States, 1900-1945. 3 Hours.
America's development as a world power. The course examines U.S. relations with Europe, Latin America, and East Asia, plus America's first approach to the Middle East. Particular emphasis is placed on America's involvement in World War I and World War II. (Typically offered: Spring Odd Years)

HIST 4773. Diplomatic History of the US, 1945 to Present. 3 Hours.
U.S. involvement in world affairs since WWII. The Cold War from an international perspective, including strategies, nuclear deterrence, conflicts, economic developments, cultural relations among allies and adversaries. Post-Cold War scenarios, including war on terrorism. (Typically offered: Irregular)

\section*{HIST 4783. History of Modern Mexico. 3 Hours.}

This course examines the history of Mexico from the wars of independence to the present. Emphasis will be placed on the turbulent nineteenth century and the Mexican Revolution. Themes covered include colonial legacies, national identities, popular culture, emigration, and relations with the United States. (Typically offered: Irregular)

\section*{HIST 4793. Colonial India, 1758-1948. 3 Hours.}

Examines the course of Indian history from the 1758 Battle of Plassey to eventual independence from Great Britain in 1948. Special attention is given to India's place within the British Empire, particularly the East Indian Company, the Indian Mutiny, the Raj, the rise of Gandhi, and India's independence movement. (Typically offered: Irregular)

\section*{HIST 4803. Modern Scandinavia. 3 Hours.}

Examines the history of the Nordic lands, including Denmark, Finland, Iceland, Norway, and Sweden, from 1500 to the present. (Typically offered: Irregular)

HIST 4813. Africans and Slavery in Colonial Latin America. 3 Hours.
Explores the diverse experiences of slaves and free Blacks in colonial Spanish and Portuguese America from 1500 to around 1888, demonstrating that bondage and the practice of African slavery was a pillar of political authority in colonial Latin America.

\section*{(Typically offered: Irregular)}

This course is cross-listed with AAST 4813, LALS 4813.

\section*{HIST 4823. Black Freedom in the Age of Emancipation. 3 Hours.}

This course centers on the comparative study of Atlantic World freedom movements from the perspective of the African Diaspora. It focuses on the histories, meanings, legacies of the various types of black emancipation in the Atlantic World and the cultural technologies that enabled them. (Typically offered: Spring) This course is cross-listed with AAST 4823.

\section*{HIST 4843. Global History of Soccer. 3 Hours.}

Prompts students to explore the various historical processes related to the global diffusion of and engagement with soccer. Examines the ways soccer has reflected the broader, ongoing process of globalization, with players, ideas, tactics, and wealth circulating throughout the globe. (Typically offered: Irregular)

HIST 4863. From Hiroshima to Fukushima: Nuclear Security in Asia. 3 Hours. History of nuclear security in Asia from the end of World War II to the nuclear meltdown at Fukushima. Analyzes environmental and human aspects involved in the production and testing of nuclear weapons, the building of nuclear facilities, and the impact of nuclear disasters on the region. (Typically offered: Irregular)

\section*{HIST 4873. Germany since 1945. 3 Hours.}

Examines the history of Germany since the end of the Second World War including political division and economic recovery, dissident movements in East Germany and alternative cultures in West Germany, reunification in 1990, and the legacy of Nazism and the Holocaust. (Typically offered: Irregular)

HIST 4883. Health and Disease: 1500 to the Present. 3 Hours.
Explores the emergence of epidemics against the backdrop of the nation state and anxieties over women, the lower classes, and other marginalized groups. The rise of modern health programs illuminates the cultural construction of medicine, the biases of scientific inquiry, and the tensions among paternalism, liberty, and prejudice. (Typically offered: Irregular)

HIST 4893. History Seminar. 3 Hours.
Advanced study of selected historical topics, with emphasis on the application of historical research methods and writing skills to produce a substantial research paper or thesis. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{HIST 4893H. Honors History Seminar. 3 Hours.}

Advanced study of selected historical topics, with emphasis on the application of historical research methods and writing skills to produce a substantial research paper or thesis. Prerequisite: Honors Standing. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HIST 4893.

\section*{HIST 4901. Applying History. 1 Hour.}

Study of the ways in which historians apply knowledge in their discipline to advance research, preserve the past, and address contemporary issues. Reflection on student learning in history and possibilities for post-baccalaureate study and employment. (Typically offered: Fall and Spring)

HIST 4901H. Honors Applying History. 1 Hour.
Study of the ways in which historians apply knowledge in their discipline to advance research, preserve the past, and address contemporary issues. Reflection on student learning in history and possibilities for post-baccalaureate study and employment. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to HIST 4901.

\section*{HIST 491V. Internship in History. 1-3 Hour.}

Work experience related to history arranged by the student under the guidance of a faculty member. Paper required. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
HIST 4943. U.S. Labor History, from 1877-present. 3 Hours.
This course will examine the changing nature of work in U.S. history from 1877 until the present. It will pay particular attention to the ways that workers--individually and collectively--understand the meanings of their labor and to the ways that notions of class, gender, ethnicity, and race inform these understandings. (Typically offered: Irregular)

\section*{HIST 4953. The Global 1860s. 3 Hours.}

Explores the pivotal decade of the 1860s, from its roots in the events revolving around the 1848 Revolutions in Europe to its developments up to the end of the 1870s. Shows the connections between the Americas, Europe, South Asia and parts of the Caribbean and the Pacific. (Typically offered: Irregular)
HIST 4963. Third World Underdevelopment and Modernization. 3 Hours. Examines key issues related to societal change in the Third World, including various views and theories of international development and modernization. Other major issues explored include social inequalities, food and hunger, population, environment, trade and globalization, international aid, and the roles of state, market, and civil society. (Typically offered: Irregular)
This course is cross-listed with AAST 4963.

\section*{HIST 4973. The Civilization of the Renaissance in Italy. 3 Hours.}

Important trends in Italian culture between the 14th and 16th centuries, including the birth of humanism, new understandings of the past, "new" political ideologies, scientific innovation, and famous art produced in the Western tradition. (Typically offered: Irregular)

\section*{HIST 498V. History Thesis. 1-6 Hour.}

Advanced research and writing supporting the development of a substantive research thesis in history. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
HIST 498VH. Honors History Thesis. 1-6 Hour.
Honors history thesis. Prerequisite: Junior standing and honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HIST 498V.

HIST 4993. History of the Ottoman Empire, 1300-1923. 3 Hours.
History of the Ottoman Empire from its emergence as frontier principality in Anatolia ca. 1300, through its heyday as a major imperial power on three continents in the fifteenth through the eighteenth centuries, ending with its encounter with western imperialism and nationalism in the nineteenth and early twentieth centuries. (Typically offered: Irregular)

HIST 5003. Democratic Athens. 3 Hours.
History of the Athens from the sixth century BCE to the end of the fourth. Topics include origins and evolution of democracy, the Persian wars, the rise and fall of the Athenian Empire, and the development of historiography, literature, art, and philosophy during the period. Graduate degree credit will not be given for both HIST 4003 and HIST 5003. (Typically offered: Irregular)

\section*{HIST 5013. Alexander the Great and the Hellenistic World. 3 Hours.}

A survey of the achievements of Alexander and the culture of the new world he created. The personality and career of Alexander are examined as well as the rich diversity of the Hellenistic world: trade with India, religious syncretism, and the development of Hellenistic science and philosophy. Graduate degree credit will not be given for both HIST 4013 and HIST 5013. (Typically offered: Irregular)

\section*{HIST 5033. Roman Empire. 3 Hours.}

History of Rome from the Emperor Augustus to Constantine, ca. 30 BCE - 337 CE. Topics include the sources for imperial Rome, the organization of imperial government, the provinces of Rome and provincial government, art and literature under the empire, the rise of Christianity, and the conversion of the Empire. Graduate degree credit will not be given for both HIST 4033 and HIST 5033. (Typically offered: Irregular)

\section*{HIST 506V. Readings in European History. 1-6 Hour.}

Directed readings in the field of European history. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

HIST 507V. Readings in American History. 1-6 Hour.
Readings. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

HIST 517V. Readings in Asian History. 1-6 Hour.
Readings. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{HIST 5193. Great Britain,1901-2001. 3 Hours.}

Examines the history of the British Isles from the death of Queen Victoria in 1901 to the reelection of Prime Minister Tony Blair in 2001. Special attention is given to the collapse of the British Empire, the birth of the welfare state, and the challenges inherent in the decline of British world power. Graduate degree credit will not be given for both HIST 4193 and HIST 5193. (Typically offered: Spring Odd Years)

\section*{HIST 5203. History of the Holocaust. 3 Hours.}

Examines the origins, history, and legacies of the European Holocaust. Traces the origins of anti-Semitism in Europe, the rise of Nazism in Germany, the path to genocide during World War II, and the role of victims, perpetrators, rescuers, and bystanders. Considers issues of memory and justice in the postwar era. Graduate degree credit will not be given for both HIST 4203 and HIST 5203. (Typically offered: Irregular)

\section*{HIST 524V. Readings in African History. 1-6 Hour.}

Readings in African history. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{HIST 526V. Readings in Middle Eastern History. 1-6 Hour.}

Readings in Middle Eastern history. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{HIST 527V. Readings in Medieval History. 1-6 Hour.}

Readings in Medieval history. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

HIST 528V. Research Problems in Middle Eastern History. 1-6 Hour.
Research problems in Middle Eastern history. (Typically offered: Irregular)
HIST 533V. Readings in Ancient History. 1-6 Hour.
Readings in Ancient history. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

HIST 5393. Early Modern Islamic Empires, 1300-1750. 3 Hours.
An examination of the historical development of the three great Islamic empires in the early modern period- the Ottomans, the Safavids of Iran, and the Mughals of India. Special attention given to imperial expansion, administrative structures, religious-legal establishment, and the formation of distinct traditions in political ideology, historiography, and the arts and sciences. Graduate degree credit will not be given for both HIST 4393 and HIST 5393. (Typically offered: Spring Odd Years)

HIST 5403. Islam in Asia. 3 Hours.
Introduces students to the history of Islam in East and Southeast Asia over the past 1,200 years. It focuses on the 18th-21st centuries when Muslims were part of everyday life in Asia and participated in the formation of majority and minority identities in the region. Graduate degree credit will not be given for both HIST 4403 and HIST 5403. (Typically offered: Irregular)

HIST 545V. Readings in Caribbean History. 1-6 Hour.
Graduate readings in Caribbean history. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

HIST 5493. Religion in America to 1860. 3 Hours.
History of religion in early America, primarily from a social and cultural perspective. Topics will include region, social class, growth of institutions, slavery, print culture, and social reform in traditions including Protestantism, West African religion, Catholicism, Native American religion, and Judaism. Graduate degree credit will not be given for both HIST 4493 and HIST 5493. (Typically offered: Irregular)

HIST 5503. History of Political Parties in the United States, 1789-1896. 3 Hours.
Origin and development of the American party system from the implementation of the constitution to the election of McKinley. Graduate degree credit will not be given for both HIST 4503 and HIST 5503. (Typically offered: Fall Even Years)

HIST 5513. History of Political Parties in the United States Since 1896. 3 Hours. Response of the party system to America's emergence as an industrial nation and world power from the election of 1896 to present. Graduate degree credit will not be given for both HIST 4513 and HIST 5513. (Typically offered: Spring Odd Years)

\section*{HIST 5523. Roman Republic. 3 Hours.}

History of Rome from its origins in the eighth century BCE to the fall of the Republic in the first century BCE. Topics include the sources for Roman history, the development, functioning, and ultimate failure of republican government, the Roman army, and Roman imperialism in Italy and the Mediterranean. Graduate degree credit will not be given for both HIST 4023 and HIST 5523. (Typically offered: Irregular)

\section*{HIST 5563. The Old South, 1607-1865. 3 Hours.}

Survey of the political, social, and economic development of the antebellum South. Graduate degree credit will not be given for both HIST 4563 and HIST 5563. (Typically offered: Fall Odd Years)

\section*{HIST 5573. The New South, 1860 to the Present. 3 Hours.}

Survey of the development of the Civil War and postwar South to the present. Graduate degree credit will not be given for both HIST 4573 and HIST 5573. (Typically offered: Fall Even Years)

\section*{HIST 5583. Arkansas in the Nation. 3 Hours.}

Designed to provide advanced undergraduate and graduate students with a comprehensive understanding of the full sweep of Arkansas history. The focus will be on social, economic and political history, and historiography. Graduate degree credit will not be given for both HIST 4583 and HIST 5583. (Typically offered: Irregular)

\section*{HIST 5603. U.S. Labor History to 1877. 3 Hours.}

Examines the changing nature of work in U.S. history from 1607 until 1877 including the ways that workers--individually and collectively-- understand the meanings of their labor and to the ways that notions of class, gender, ethnicity, and race inform these understandings. Graduate degree credit will not be given for both HIST 4603 and HIST 5603. (Typically offered: Fall Odd Years)

HIST 5623. Revolutionary America, 1763 to 1789. 3 Hours.
History of revolutionary America emphasizing economic, social, and cultural perspectives. Topics include historical interpretations of the causes of the war, the impact of war on African Americans, women, loyalists, elite, and poor Americans.
The course also examines the formation of the new national government. Graduate degree credit will not be given for both HIST 4623 and HIST 5623. (Typically offered: Irregular)

HIST 5643. Early American Republic, 1789-1828. 3 Hours.
History of the early United States emphasizing social and cultural perspectives. Topics addressed will include westward expansion, slavery, religion, and economic change. Graduate degree credit will not be given for both HIST 4643 and HIST 5643. (Typically offered: Irregular)
HIST 5653. Antebellum America, 1828-1850. 3 Hours.
History of antebellum U.S. emphasizing social and cultural perspectives. Topics addressed will include slavery, religion, gender, the market economy, regionalism, and political developments. Graduate degree credit will not be given for both HIST 4653 and HIST 5653. (Typically offered: Irregular)

HIST 5673. The American Civil War. 3 Hours.
An intensive study of the political, social, military, and economic aspects of the American Civil War period. Graduate degree credit will not be given for both HIST 4673 and HIST 5673. (Typically offered: Fall)

\section*{HIST 5693. Late Middle Ages. 3 Hours.}

This course examines the political, social-economic, intellectual, and spiritual developments of European history, c. 1000-1400 CE. Special topics include monasticism, sacral kingship, the crusades, and the medieval university. Graduate degree credit will not be given for both HIST 4053 and HIST 5693. (Typically offered: Spring Odd Years)

\section*{HIST 570V. Special Topics. 1-6 Hour.}

Special topics. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
HIST 5713. Women, Gender, and Sexuality in Colonial Latin America. 3 Hours. Examines women, gender, and sexuality in colonial Latin America. Explores the lives of indigenous, Spanish, African, and mixed-race women from all social ranks. Addresses the current status of Latin American women considering a colonial legacy of gender oppression and sexual repression. (Typically offered: Irregular)

HIST 5723. America Between the Wars, 1917-1941. 3 Hours.
The impact of World War I, the 1920s, and the Great Depression upon American society and culture. Graduate degree credit will not be given for both HIST 4723 and HIST 5723. (Typically offered: Irregular)

HIST 5763. Diplomatic History of the United States, 1900-1945. 3 Hours.
America's development as a world power. The course examines U.S. relations with Europe, Latin America, and East Asia, plus America's first approach to the Middle East. Particular emphasis is placed on America's involvement in World War I and World War II. Graduate degree credit will not be given for both HIST 4763 and HIST 5763. (Typically offered: Spring Odd Years)

\section*{HIST 5773. Diplomatic History of the US, 1945 to Present. 3 Hours.}
U.S. involvement in world affairs since WWII. The Cold War from an international perspective, including strategies, nuclear deterrence, conflicts, economic developments, cultural relations among allies and adversaries. Post-Cold War scenarios, including war on terrorism. Graduate degree credit will not be given for both HIST 4773 and HIST 5773. (Typically offered: Fall Odd Years)

\section*{HIST 5783. History of Modern Mexico. 3 Hours.}

This course examines the history of Mexico from the wars of independence to the present. Emphasis will be placed on the turbulent nineteenth century and the Mexican Revolution. Themes covered include colonial legacies, national identities, popular culture, emigration, and relations with the United States. Graduate degree credit will not be given for both HIST 4783 and HIST 5783. (Typically offered: Irregular)

HIST 5793. Colonial India, 1758-1948. 3 Hours.
Examines the course of Indian history from the 1758 Battle of Plassey to eventual independence from Great Britain in 1948. Special attention is given to India's place within the British Empire, particularly the East Indian Company, the Indian Mutiny, the Raj, the rise of Gandhi, and India's independence movement. Graduate degree credit will not be given for both HIST 4793 and HIST 5793. (Typically offered: Irregular)

HIST 5803. Modern Scandinavia. 3 Hours.
Examines the history of the Nordic lands, including Denmark, Finland, Iceland, Norway, and Sweden, from 1500 to the present. Graduate degree credit will not be given for both HIST 4803 and HIST 5803. (Typically offered: Irregular)

HIST 5813. Africans and Slavery in Colonial Latin America. 3 Hours.
Explores the diverse experiences of slaves and free Blacks in colonial Spanish and Portuguese America from 1500 to around 1888, demonstrating that bondage and the practice of African slavery was a pillar of political authority in colonial Latin America. Graduate degree credit will not be given for both HIST 4813 and HIST 5813. (Typically offered: Irregular)

\section*{HIST 5823. Black Freedom in the Age of Emancipation. 3 Hours.}

This course centers on the comparative study of Atlantic World freedom movements from the perspective of the African Diaspora. It focuses on the histories, meanings, legacies of the various types of black emancipation in the Atlantic World and the cultural technologies that enabled them. Graduate degree credit will not be given for both HIST 4823 and HIST 5823. (Typically offered: Spring)

HIST 5833. Social and Cultural History of the Modern Middle East. 3 Hours. An analysis of Middle East history in the 17th-20th centuries which focuses on the social transformation of urban and rural life. Particular emphasis is given to the roles of economics, genealogy, art, and popular culture. Graduate degree credit will not be given for both HIST 4433 and HIST 5833. (Typically offered: Irregular)

HIST 5863. From Hiroshima to Fukushima: Nuclear Security in Asia. 3 Hours. History of nuclear security in Asia from the end of World War II to the nuclear meltdown at Fukushima. Analyzes environmental and human aspects involved in the production and testing of nuclear weapons, the building of nuclear facilities, and the impact of nuclear disasters on the region. (Typically offered: Irregular)

HIST 5883. Health and Disease: 1500 to the Present. 3 Hours.
Explores the emergence of epidemics against the backdrop of the nation state and anxieties over women, the lower classes, and other marginalized groups. The rise of modern health programs illuminates the cultural construction of medicine, the biases of scientific inquiry, and the tensions among paternalism, liberty, and prejudice. Graduate degree credit will not be given for both HIST 4883 and HIST 5883.
(Typically offered: Irregular)
HIST 5893. Germany, 1918-1945. 3 Hours.
Study of German history from advent of the Weimar Republic to the end of the Third Reich with emphasis upon the failure of democratic government in the 1920s and the rise and fall of the National Socialist dictatorship. Graduate degree credit will not be given for both HIST 4253 and HIST 5893. (Typically offered: Irregular)

\section*{HIST 5943. U.S. Labor History, from 1877-present. 3 Hours.}

This course will examine the changing nature of work in U.S. history from 1877 until the present. It will pay particular attention to the ways that workers-individually and collectively--understand the meanings of their labor and to the ways that notions of class, gender, ethnicity, and race inform these understandings. Graduate degree credit will not be given for both HIST 4943 and HIST 5943. (Typically offered: Spring Even Years)

HIST 5973. The Civilization of the Renaissance in Italy. 3 Hours.
Important trends in Italian culture between the 14th and 16th centuries, including the birth of humanism, new understandings of the past, "new" political ideologies, scientific innovation, and famous art produced in the Western tradition. (Typically offered: Irregular)

HIST 5983. Intellectual History of Europe Since the Enlightenment. 3 Hours. A survey of the major developments in European thought and culture since the emergence of Romanticism. Topics include Romanticism, Darwinism, Marxism, and Modernism. Graduate degree credit will not be given for both HIST 4143 and HIST 5983. (Typically offered: Fall Even Years)

HIST 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{HIST 6013. The Era of the French Revolution. 3 Hours.}

France from the salons of the Enlightenment to the Napoleonic Wars. The French Revolution will be explored in terms of politics and personalities, ideas and symbols, class and gender relations, and violence and terror. Graduate degree credit will not be given for both HIST 4213 and HIST 6013. (Typically offered: Fall Odd Years)

HIST 6033. Society and Gender in Modern Europe. 3 Hours.
Changing values and attitudes toward childhood, family life, sexuality, and gender roles in Europe from the Renaissance to the present. The social impact of the Industrial Revolution, urbanization, demographic change, and the two world wars. Graduate degree credit will not be given for both HIST 4133 and HIST 6033.
(Typically offered: Spring Odd Years)

\section*{HIST 6073. Renaissance and Reformation, 1300-1600. 3 Hours.}

Examines the history of Europe from the end of the Middle Ages through the Renaissance to the Reformation and Counter-Reformation. Special attention is paid to changes in popular piety, political thought, religious representation, and the discovery of the New World. Graduate degree credit will not be given for both HIST 4073 and HIST 6073. (Typically offered: Fall Even Years)

\section*{HIST 6083. Early Modern Europe, 1600-1800. 3 Hours}

Begins with the upheaval of the reformation, moves through the crisis of the 17th century and culminates with the democratic revolution of the 18th century. Examines the consolidation of the European state system, the propagation of modern science, discovery of overseas worlds, and the advent of the Industrial Revolution. Graduate degree credit will not be given for both HIST 4083 and HIST 6083. (Typically offered: Spring Odd Years)

\section*{HIST 6113. Archaic Greece. 3 Hours}

History of Greece from the late Bronze Age to the end of the Persian Wars. This class will focus particularly on the sources involved with reconstructing early Greek history, especially Herodotus and Homer, on the development of the Greek city-state or polis, and on the interaction between the Greeks and Near-eastern civilizations during this period, culminating in the wars between the Greeks and the Persian Empire. Graduate degree credit will not be given for both HIST 4113 and HIST 6113. (Typically offered: Irregular)

\section*{HIST 6173. The Latin American City. 3 Hours.}

This course examines the social, political, and cultural aspects of the modern Latin American city from an interdisciplinary perspective. The course includes an introduction to urban studies concepts, and each semester is organized around a specific set of case studies. Graduate degree credit will not be given for both HIST 4173 and HIST 6173. (Typically offered: Irregular)

HIST 6183. Great Britain 1707-1901. 3 Hours.
Examines the history of the British Isles from the 1707 Act of Union between Scotland and England until the death of Queen Victoria in 1901. Special attention is given to the spread of Empire, industrialization, and the political, social, and cultural aspects of the Georgian and Victorian Eras. Graduate degree credit will not be given for both HIST 4183 and HIST 6183. (Typically offered: Fall Even Years)

\section*{HIST 6203. Byzantine Empire. 3 Hours.}

Examines the history and culture of the Byzantine Empire from the reign of Constantine I to the fall of Constantinople in 1453. Topics include the development of Christianity and the schism with the western church, the crusades, and Byzantine influence on Islam, Russia, the Ottomans, and the Renaissance. Graduate degree credit will not be given for both HIST 4103 and HIST 6203. (Typically offered: Irregular)

\section*{HIST 6223. France Since 1815. 3 Hours.}

Survey of French history from the overthrow of Napoleon to the 5th Republic, with emphasis on French politics, society, and culture. Graduate degree credit will not be given for both HIST 4223 and HIST 6223. (Typically offered: Spring Even Years)

HIST 6293. Latin American Environmental History. 3 Hours.
Explores the challenges, debates, and ecologies of Latin America in order to understand the historical roots of current environmental crises. It engages a historiography on ecosystems found in the region. Uses environmental history texts and scholarly articles to build a layered and transnational approach. (Typically offered: Irregular)

HIST 6303. Transatlantic Relations, 1919-Present. 3 Hours.
US-Western European Relations, from the Wilsonian era to the present, covering strategic, economic, and cultural aspects. Graduate degree credit will not be given for both HIST 4303 and HIST 6303. (Typically offered: Irregular)

\section*{HIST 6343. Golden Age Portugal and Spain. 3 Hours.}

This course will examine the diverging and converging paths of Portugal and Spain during the early modern period (15th-17th centuries). We will chart their rise as global imperial powers and their initial declines. We'll explore the political, social, and religious contexts in which Golden Age Iberia flourished. Graduate degree credit will not be given for both HIST 4343 and HIST 6343. (Typically offered: Irregular)

HIST 6463. The American Frontier. 3 Hours.
American westward expansion and its influence on national institutions and character. Emphasis on the pioneer family and the frontier's role in shaping American society, culture, economy, and politics. Topics include exploration, the fur trade, the cattle kingdom and the mining, farming, and military frontiers. Graduate degree credit will not be given for both HIST 4463 and HIST 6463. (Typically offered: Fall Odd Years)

HIST 6513. New Women in the Middle East. 3 Hours.
This course covers the transformation of social and cultural roles of women in the Middle East since the 19th Century. Emphases include political emancipation, religious reformation, artistic representation, and gendered re-definition. Graduate degree credit will not be given for both HIST 4413 and HIST 6513. (Typically offered: Irregular)

\section*{HIST 6523. Wars of Religion: From the Crusades to 9/11. 3 Hours}

Examines the place of religion in combat across the centuries. A case study approach is used to explore different conflicts from the twelfth century crusades against Muslim forces to \(9 / 11\). Investigates how religious motivations may or may not be related to other political, social, cultural, economic concerns. Graduate degree credit will not be given for both HIST 4323 and HIST 6523. (Typically offered: Irregular)

HIST 6543. Late Antiquity and the Early Middle Ages. 3 Hours.
This course examines the political, spiritual, intellectual, and social-economic developments of European history, c. 300-1000 CE. Special topics include the Christianization of the late Roman Empire and Byzantium, as well as the formation of Celtic and Germanic Kingdoms in the West. Graduate degree credit will not be given for both HIST 4043 and HIST 6543. (Typically offered: Fall Even Years)

HIST 6563. The Middle East since 1914. 3 Hours.
Middle East since 1914 addresses European colonialism, the rise of new social elites, independence, revolution, globalization, economic self-determination, persistent regional conflicts and ongoing battles over "cultural authenticity". Graduate degree credit will not be given for both HIST 4363 and HIST 6563. (Typically offered: Irregular)

HIST 6643. Frontiers and Borderlands in Colonial Latin America. 3 Hours. This course examines frontiers and borderlands in colonial Latin America and focuses on the regions of California, New Mexico, Texas, Brazil, and the Río de la Plata. It demonstrates that frontiers and borderlands are defined by the absence of a hegemonic European power and associated with the prevalence of Indigenous norms. Graduate degree credit will not be given for both HIST 4443 and HIST 6643. (Typically offered: Irregular)

\section*{HIST 6703. Emergence of Modern America, 1876-1917. 3 Hours.}

A survey of the impact of the Industrial Revolution, Imperialism, and progressivism upon American life and institutions. Graduate degree credit will not be given for both HIST 4703 and HIST 6703. (Typically offered: Fall Odd Years)

HIST 6733. Recent America, 1941 to the Present. 3 Hours.
A general survey of American history since World War II with emphasis upon the presidency, reform movements, the Cold War, and cultural developments. Graduate degree credit will not be given for both HIST 4733 and HIST 6733. (Typically offered: Irregular)

HIST 6743. The Cold War in Latin America: Revolutions, Violence, and Politics. 3 Hours.

This course will trace the rise of the ideological and political struggles over social and economic development and the security regimes designed to thwart socialist revolution and political mobilization. The influence of the United States in Latin American security regimes and "containment" activities will receive special attention. Graduate degree credit will not be given for both HIST 4743 and HIST 6743. (Typically offered: Irregular)

\section*{HIST 6843. Global History of Soccer. 3 Hours.}

Prompts students to explore the various historical processes related to the global diffusion of and engagement with soccer. Examines the ways soccer has reflected the broader, ongoing process of globalization, with players, ideas, tactics, and wealth circulating throughout the globe. (Typically offered: Irregular)

\section*{HIST 6953. The Global 1860s. 3 Hours.}

Explores the pivotal decade of the 1860s, from its roots in the events revolving around the 1848 Revolutions in Europe to its developments up to the end of the 1870s. Shows the connections between the Americas, Europe, South Asia and parts of the Caribbean and the Pacific. (Typically offered: Irregular)

HIST 6993. History of the Ottoman Empire, 1300-1923. 3 Hours.
History of the Ottoman Empire from its emergence as frontier principality in Anatolia ca. 1300, through its heyday as a major imperial power on three continents in the fifteenth through the eighteenth centuries, ending with its encounter with western imperialism and nationalism in the nineteenth and early twentieth centuries. (Typically offered: Irregular)

\section*{HIST 700V. Doctoral Dissertation. 1-18 Hour.}

Independent research and writing leading to the completion of a doctoral dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

HIST 7023. Historical Methods. 3 Hours
Practical introduction to historical research and writing. Consists of lecture, library reading, and class criticism of research papers. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{HIST 7043. Historiography. 3 Hours.}

Survey of the history of historical writing and a study of the important schools and historical interpretation. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{HIST 7103. Reading Seminar in American History. 3 Hours.}

Historiographical and bibliographical study of special areas of U.S. history, such as Antebellum America, the Civil War, etc. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 30 hours of degree credit.

\section*{HIST 7123. Research Seminar in History. 3 Hours.}

Research projects in selected fields of history, such as political history, gender history, history of race, etc. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 30 hours of degree credit.

HIST 7133. Reading Seminar in European History. 3 Hours.
Historiographical and bibliographical study of special periods in European history, such as the Roman Empire, the late Middle Ages, the French Revolution, etc. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 30 hours of degree credit.

HIST 7213. Reading Seminar in Middle Eastern History. 3 Hours.
Historiographical and bibliographical study of special areas of Middle Eastern history. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 30 hours of degree credit.

HIST 7373. Reading Seminar in Ancient History. 3 Hours.
Historiographical and bibliographical study of special areas in ancient history. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 30 hours of degree credit

HIST 7413. Reading Seminar in African History. 3 Hours.
Historiographical and bibliographical study of selected periods and/or topics in African history. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 30 hours of degree credit.

HIST 7453. Reading Seminar in Global History. 3 Hours.
Graduate seminar adopting global perspectives on Europe, US, Asia, Africa, Latin America. Decentering narratives focusing on regional approaches, the course examines the global implications of various historical developments. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{Honors College (HNRS) \\ Courses}

HNRS 102VH. Honors College Introduction to Research. 1-6 Hour.
The Honors College Introduction to Research functions as part of a bridge program between secondary education and the university. The main purpose is to introduce students to the full range of research activities available at an R-1 institution and to do so under the guidance of both STEM and non-STEM honors faculty members. Prerequisite: Departmental consent. Pre- or Corequisite: Honors standing or membership in the Honors College Path Program. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HNRS 204VH. Honors International Research Internship Foundations. 1-6 Hour.
The Honors College International Research Internship Foundations hours are intended for undergraduates who undertake an international research internship, usually with funding from the Honors College. An on-campus faculty mentor will supervise the preparatory work in advance of the time spent abroad. Pre- or Corequisite: Honors standing. Prerequisite: Departmental consent. (Typically offered: Irregular) May be repeated for degree credit.

HNRS 205VH. Honors Domestic Internship Foundations. 1-6 Hour.
The Honors College Domestic Internship Foundations hours are intended for undergraduates who undertake a domestic internship, usually with funding from the Honors College. An on-campus faculty mentor will approve any needed preparatory work in advance of the internship. Prerequisite: Departmental consent. Pre- or Corequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.

HNRS 3001H. Honors College Forum. 1 Hour.
The Honors College Forum centers on contemporary issues sparking intense national and international media scrutiny. Faculty experts partner with honors students in a seminar-style, discussion format. Topics vary by semester. Pre- or Corequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

HNRS 3011H. Honors College Retro Readings. 1 Hour.
Honors College Retro Readings centers on classic authors read through a contemporary lens. Faculty experts partner with honors students from all undergraduate colleges in a seminar-style discussion format. Topics vary by semester. Pre- or Corequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{HNRS 3501H. Honors Trajectory Exploration. 1 Hour.}

Introduces students to areas of professional life with a special emphasis on emerging and competitive fields or areas of competency. Courses mix theoretical bases of an area with cutting-edge application by practitioners. Prerequisite: Departmental consent. Pre- or corequisite: Honors standing. (Typically offered: Fall and Spring)

\section*{HNRS 3513H. Honors College Special Topics. 3 Hours.}

Honors College Special Topics center on either issues of contemporary interest or on a fresh approach to a well-established area of study. In either case, these courses are marked by their interdisciplinary approach, seminar-style discussion format, and students delivering one or more academic products showing both their understanding of the topic and of interdisciplinary approaches. Topics vary by semester. May be repeated for degree credit. Pre- or corequisite: Honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{HNRS 3801H. Honors College Catapult. 1 Hour.}

This course is designed to place ambitious, high-achieving students on a trajectory toward nationally competitive awards and/or graduate and professional programs of study. Students in the course will prepare their academic resume, construct a personal statement, and answer essay prompts as each component may relate to nationally competitive awards and graduate or professional school admission. Additional topics include studying for advanced tests such as the Graduate Record Exam (GRE), building a graduate or professional school timeline, and preparing for interviews. Learning outcomes will be achieved through active engagement in writing and compilation exercises, research, and discussion. Prerequisite: Honors standing. (Typically offered: Spring)

\section*{HNRS 3901H. Honors Med School. 1 Hour.}

Introduces students to the process of applying to medical school while dispelling several common myths about the practice of medicine. Seminar participants also explore pressing issues facing doctors these days, including the opioid crisis, the increasing elderly population, and the rise of corporate healthcare. Prerequisite: Departmental consent. Pre- or Corequisite: Honors standing. (Typically offered: Spring)

\section*{HNRS 3911H. Honors Law School. 1 Hour}

Introduces students to the process of applying to law school while dispelling several common myths about the practice of law. Seminar participants also explore pressing issues facing lawyers and the variety of careers open to them, including criminal and civil and governmental and public interest practice. Prerequisite: Departmental consent. Pre- or corequisite: Honors standing. (Typically offered: Spring)

HNRS 4013H. Honors College Signature Seminar. 3 Hours.
The Honors College Signature Seminar Series features leading scholars who will offer courses bridging multiple colleges and having broad appeal. These signature seminars will develop from the current research of the faculty who offer them, thereby inviting honors students into their scholarly world at a very high level. The goal of the signature seminar series is to spark undergraduate research projects and to stimulate career trajectories, including nationally competitive fellowships and/or admittance to graduate and professional programs. Topics vary by semester. Eligible students must be in good standing in the Honors College. Pre- or Corequisite: Honors standing. Prerequisite: Departmental consent. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

HNRS 402VH. Honors College Research. 1-6 Hour.
The Honors College Research hours are intended for undergraduates who have already begun their research on campus and will travel domestically for a significant period of time to enhance and extend this research. An on-campus faculty mentor and a research mentor on-site are required. Prerequisite: Departmental consent. Pre- or Corequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HNRS 403VH. Honors College International Research. 1-6 Hour.
The Honors College International Research hours are intended for undergraduates who have already begun their research on campus and will travel abroad for a significant period of time to enhance and extend this research. An on-campus faculty mentor and a research mentor on-site are required. Prerequisite: Departmental consent. Pre or corequisite: Honors standing. (Typically offered: Irregular)

HNRS 404VH. Honors International Research Internship. 1-6 Hour
The Honors College International Research Internships are intended for upperlevel undergraduates who undertake an international research internship, usually with funding from the Honors College. An on-campus faculty mentor and a research mentor on-site are required. Prerequisite: Departmental consent. Pre- or corequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{HNRS 405VH. Honors Domestic Internship. 1-6 Hour}

The Honors College Domestic Internship hours are intended for upper-level undergraduates who undertake a domestic internship, usually with funding from the Honors College. An on-campus faculty mentor will approve any needed preparatory work in advance of the internship. (Typically offered: Irregular) May be repeated for degree credit.

\section*{Horticulture (HORT)}

\section*{Courses}

HORT 1103. Plants, People and You. 3 Hours.
Plants, People and You is a course designed to introduce students to the world of horticulture, with an emphasis on how plants can be used for food, fun, health economic value or environmental contribution. (Typically offered: Fall)

\section*{HORT 1303. Introduction to Floral Design. 3 Hours}

Students in this introductory class in Floral Design will learn basic design elements such as line, form, mass, balance, texture and color as used in floral art. Students will gain an appreciation of the various types and species of flowers and foliage used in various floral arrangements such as bouquets and centerpieces. In addition, students will learn common post-harvest handling techniques of fresh cut floral plant material to prolong vase-life from the purchasing stage to the final design. Corequisite: Lab component. (Typically offered: Spring)

\section*{HORT 2003. Principles of Horticulture. 3 Hours.}

A course introducing students to the biological and technologies underlying the propagation, production, handling and use of horticultural crops, turf and landscape plants. Students will be introduced to the various disciplines and commodities of horticulture. The use of plants for the benefit of humankind because of their aesthetic and nutritional value will be explored. Previous instruction in Plant Science, Plant Biology, or general Botany is strongly encouraged. Corequisite: Lab component. (Typically offered: Spring)

\section*{HORT 2101. Horticultural Career Development. 1 Hour.}

A course which presents concepts necessary for developing a career and becoming a professional in horticulture industries or businesses. Concepts of goal setting, effective communication and interpersonal skills, behaviors and performance, portfolio and resume, development and job hunting skills will be presented. (Typically offered: Spring)

\section*{HORT 2303. Introduction to Turfgrass Management. 3 Hours.}

An introductory course in turfgrass management emphasizing turfgrass growth, adaptation, and management. Methods for establishment, fertilization, mowing, cultivation, irrigation, and pest management are presented, and their impact on culture of lawns, golf courses, athletic fields, and other managed turf areas discussed. (Typically offered: Fall)

HORT 3103. Woody Landscape Plants. 3 Hours.
Identification, climatic adaptation and landscape design values of woody ornamental trees, shrubs and vines. Lecture 2 hours per week. Corequisite: Lab component. (Typically offered: Fall)

\section*{HORT 3113. Herbaceous and Indoor Plant Materials. 3 Hours.}

Identification, culture, and use of annuals, perennials in landscapes and foliage plants in interiors. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring Odd Years)

\section*{HORT 3123. International Horticulture. 3 Hours.}

Considerable globalization of agriculture has occurred over the past several decades, especially in the area of horticultural crops. This course provides a base of knowledge of the international horticulture industry focusing on principles and practices of development and trade of horticultural crops. (Typically offered: Spring)

\section*{HORT 3303. Vegetable Crops. 3 Hours.}

General course in vegetable crops with attention to the principles underlying methods of production and handling related to yields and quality of the products. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: HORT 2003 and CSES 2203. (Typically offered: Fall Odd Years)

\section*{HORT 3403. Turfgrass Management. 3 Hours.}

Cultural and management practices of commercial and residential lawns. Principles and practices of mowing, fertilizing, irrigating, and control of weed, disease, and insects. Identification of turfgrass; equipment selection. Corequisite: Lab component. Prerequisite: HORT 2303. (Typically offered: Spring Even Years)

\section*{HORT 3503. Sustainable and Organic Horticulture. 3 Hours.}

This course will provide a base of knowledge of the principles and practices of sustainable, organic, and alternative horticulture management systems. The class will review and evaluate topics including soil biological processes (compost, humus and fertility), pest management, alternative farming systems, and organic agriculture. After this foundation information is studied, the class will study applications of sustainable agriculture principles to production systems such as greenhouse vegetable production, ornamental production, fruit production, and landscape and turf management. (Typically offered: Fall Even Years)

\section*{HORT 400V. Special Problems. 1-6 Hour.}

Original investigations on assigned problems in horticulture. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HORT 401V. Special Topics in Horticulture, Turf or Landscape. 1-6 Hour.
Topics related to horticulture, turfgrass or landscape science or management not covered in other courses or a more intensive study of a specific topic. (Typically offered: Irregular) May be repeated for degree credit.

\section*{HORT 402V. Horticulture Judging and Competition Activity. 1-6 Hour.}

Training for and participation on horticultural identification, judging and competitive teams. Prerequisite: HORT 2003. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HORT 4033. Professional Landscape Installation and Construction. 3 Hours. Principles and practices involved in landscape installation and construction. Topics covered include sequencing construction activities, protecting existing trees, landscape soils, selecting plants, planting and transplanting plant materials, wood construction, cement and masonry construction, and low-voltage lighting. Lecture 3 hours per week. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003. (Typically offered: Fall Even Years)

\section*{HORT 4043. Professional Landscape Management. 3 Hours.}

Principles and practices of landscape management and maintenance. Topics include low maintenance and seasonal color design, pruning and hazard tree management, water and fertilizer management, pesticide use, and other maintenance activities. Basic elements of marketing, specifications and contracts, estimating, personnel management, and equipment selection and acquisition relevant for landscape services will be introduced. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003 and HORT 3103. (Typically offered: Fall Odd Years)

\section*{HORT 4103. Fruit Production Science and Technology. 3 Hours.}

The management technologies and cultural practices of fruit crops including (but not limited to) blueberries, blackberries, raspberries, strawberries, grapes, peaches, and apples will be presented. The underlying scientific principles of crop genetics, nutrition, and physiology will be presented as a basis for making management decisions in fruit crop productions. Corequisite: Lab component. Prerequisite: HORT 2003. (Typically offered: Spring Odd Years)

\section*{HORT 4153. Sustainable Techniques in Urban Horticulture. 3 Hours.}

Sustainable Techniques in Urban Horticulture is a practicum based course where the student will learn basic techniques in sustainable production of horticultural crops in an urban or small-scale environment. Crops may include vegetables, cut flowers, or small fruits. This course is intended for students who do not have an agricultural production background or for those students wanting to learn more about the production of high-value horticultural crops under sustainable production systems. (Typically offered: Summer)

\section*{HORT 4403. Plant Propagation. 3 Hours.}

Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: HORT 2003. (Typically offered: Spring)

\section*{HORT 4403H. Honors Plant Propagation. 3 Hours.}

Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: HORT 2003 and honors standing. (Typically offered: Spring)
This course is equivalent to HORT 4403.

\section*{HORT 4413. Horticulture Physiology. 3 Hours.}

This course provides students with a background into the physiological processes of plants with an emphasis on horticultural crops and how the processes relate to horticultural crop production practices. Among the topics covered are photosynthesis, respiration, water relations and morphogenesis. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Spring)

\section*{HORT 4503. Sustainable Nursery Production. 3 Hours.}

This course addresses issues and practices involved in production of quality woody nursery crops (e.g. trees and shrubs produced in open filed and containerized systems). (Typically offered: Spring Even Years)

\section*{HORT 4603. Practical Landscape Planning. 3 Hours.}

Ornamental planting design and landscape planning concepts. Preparing planting plans, materials sheets, and cost estimates for residential properties. Prerequisite: HORT 3103. (Typically offered: Spring Even Years)

HORT 462V. Horticulture, Landscape, Turf Sciences Internship Experience. 1-6 Hour.
A supervised practical work experience in a horticulture, landscape design, or turf business or research program to gain professional competence and insight into employment opportunities. Prerequisite: COMM 1313 and HORT 2101. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HORT 4701L. Greenhouse Management and Controlled Environment Horticulture Laboratory. 1 Hour.
Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Corequisite: HORT 4703. (Typically offered: Fall Odd Years)
HORT 4703. Greenhouse Management and Controlled Environment Horticulture. 3 Hours.
Operation and management of greenhouses and other controlled environments used in horticultural production. Emphasis on system design and construction, control of light intensity and photoperiod, heating and cooling systems, substrates, mineral nutrition, water quality and irrigation systems. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Fall)

\section*{HORT 472V. Horticulture, Landscape, Turf Sciences Internship Assessment.} 1-6 Hour.
The objective of the HORT 472V Internship Assessment is for the student to gain mastery in written and oral communication skills and critical thinking skills by reflection and analysis of ideas, artifacts, and events gained from a prior internship experience. The student is expected to master specific skills in the context, content development, syntax and mechanics and purpose of writing in a visual presentation relating to the internship experience. The student will also master skills in the organization, central message, language, and delivery of an oral presentation related to the internship experience. The student will master critical thinking skills through the explanation of issues, personal perspective, evidence presentation, and conclusions and outcomes related to the internship experience. Prerequisite: HORT 462V. (Typically offered: Fall, Spring and Summer)

\section*{HORT 4903. Golf and Sports Turf Management. 3 Hours.}

Turf management techniques for golf courses, and athletic fields including species selection, root-zone construction and modification, fertilization, mowing, irrigation and pest control. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L and (HORT 2303 or HORT 3403). (Typically offered: Fall Odd Years)

\section*{HORT 5001. Seminar. 1 Hour.}

Review of scientific literature and oral reports on current research in horticulture. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

HORT 501V. Special Topics in Horticulture, Turf or Landscape. 1-6 Hour. Topics related to horticulture, turfgrass or landscape science or management not covered in other courses or a more intensive study of a specific topic. Graduate degree credit will not be given for both HORT 401V and HORT 501V. (Typically offered: Irregular) May be repeated for degree credit.

\section*{HORT 503V. Special Problems Research. 1-6 Hour.}

Original investigations on assigned problems in horticulture. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HORT 5043. Advanced Plant Breeding. 3 Hours.
Application of genetic principles to the improvement of crop plants. Presentation of conventional plant breeding methods and special techniques such as polyploidy, interspecific hybridization and induced mutation. Lecture 3 hours per week. Prerequisite: BIOL 2323 and BIOL 2321L or (ANSC 3123 and CSES 4103). (Typically offered: Spring Odd Years)

\section*{HORT 5103. Plant Growth and Development. 3 Hours.}

This course will focus on environmental and developmental processes of plant growth and development. A student completing this course should have an understanding of the developmental processes of plant growth and how environmental factors interact to affect and control plant growth and development. (Typically offered: Fall)
HORT 5113. Fruit Production Science and Technology. 3 Hours.
The management technologies and cultural practices of fruit crops including (but not limited to) blueberries, blackberries, raspberries, strawberries, grapes, peaches, and apples will be presented. The underlying scientific principles of crop genetics, nutrition, and physiology will be presented as a basis for making management decisions in fruit crop productions. Graduate degree credit will not be given for both HORT 4103 and HORT 5113. Corequisite: Lab component. Prerequisite: HORT 2003. (Typically offered: Spring Odd Years)

\section*{HORT 5143. Professional Landscape Management. 3 Hours.}

Principles and practices of landscape management and maintenance. Topics include low maintenance and seasonal color design, pruning and hazard tree management, water and fertilizer management, pesticide use, and other maintenance activities. Basic elements of marketing, specifications and contracts, estimating, personnel management, and equipment selection and acquisition relevant for landscape services will be introduced. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003 and HORT 3103. (Typically offered: Fall Odd Years)

\section*{HORT 5153. Sustainable Techniques in Urban Horticulture. 3 Hours.}

Student will learn basic techniques in sustainable production of horticultural crops in an urban or small-scale environment. Crops may include vegetables, cut flowers, or small fruits. This course is intended for students who do not have an agricultural production background or for those students wanting to learn more about the production of high-value horticultural crops under sustainable production systems. For graduate credit, students will be expected to design a four-year crop rotation scheme using sustainable techniques. The student will also develop a plan addressing issues such as post-harvest handling and or food safety issues. (Typically offered: Summer)

\section*{HORT 5203. Temperature Stress Physiology. 3 Hours.}

This course will teach students how to apply biological, chemical and physical principles to models of how plants are damaged by temperature extremes and how they change to increase resistance. Student will apply these principles to better understand plant responses to other environmental challenges, including both biotic and abiotic stresses. (Typically offered: Spring)

\section*{HORT 530V. Special Problems. 1-6 Hour.}

Original investigations on assigned problems in horticulture. Graduate degree credit will not be given for both HORT 400V and HORT 530V. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{HORT 5333. Professional Landscape Installation and Construction. 3 Hours.}

Principles and practices involved in landscape installation and construction. Topics covered include sequencing construction activities, protecting existing trees, landscape soils, selecting plants, planting and transplanting plant materials, wood construction, cement and masonry construction, and low-voltage lighting. Lecture 3 hours per week. Preparatory training in agribusiness or business is suggested. Graduate degree credit will not be given for both HORT 4033 and HORT 5333. Prerequisite: HORT 2003. (Typically offered: Fall Even Years)

\section*{HORT 5403. Plant Propagation. 3 Hours.}

Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both HORT 4403 and HORT 5403. Corequisite: Lab component. Prerequisite: BIOL 1613 and BIOL 1611L. (Typically offered: Spring)

HORT 5413. Horticulture Physiology. 3 Hours.
This course provides students with a background into the physiological processes of plants with an emphasis on horticultural crops and how the processes relate to horticultural crop production practices. Among the topics covered are photosynthesis, respiration, water relations and morphogenesis. Graduate degree credit will not be given for both HORT 4413 and HORT 5413. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Spring)

HORT 5503. Sustainable Nursery Production. 3 Hours.
This course addresses issues and practices involved in production of quality woody nursery crops (e.g. trees and shrubs produced in open filed and containerized systems). Graduate degree credit will not be given for both HORT 4503 and HORT 5503. (Typically offered: Spring Even Years)

HORT 5701L. Greenhouse Management and Controlled Environment Horticulture Laboratory. 1 Hour.
Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Graduate degree credit will not be given for both HORT 4701L and HORT 5701L. Corequisite: HORT 5703. (Typically offered: Fall Odd Years)

\section*{HORT 5703. Greenhouse Management and Controlled Environment Horticulture. 3 Hours}

Operation and management of greenhouses and other controlled environments used in horticultural production. Emphasis on system design and construction, control of light intensity and photoperiod, heating and cooling systems, substrates, mineral nutrition, water quality and irrigation systems. Graduate degree credit will not be given for both HORT 4703 and HORT 5703. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Fall)

\section*{HORT 5801L. Greenhouse Crops Production Laboratory. 1 Hour}

Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Corequisite: HORT 5803. (Typically offered: Spring Even Years)

HORT 5803. Greenhouse Crops Production. 3 Hours.
Principles and practices of production and marketing of crops commonly grown in controlled environments including flowering containerized herbaceous species, geophytes, annual and perennial bedding plants, hydroponic vegetables and herbs. Prerequisite: HORT 4703 or HORT 5703 (formerly HORT 4703). (Typically offered: Spring Even Years)

HORT 5993. Global Horticulture and Human Nutrition to Enhance Community Resilience and Food Security. 3 Hours.
This course covers three broad areas (Global Horticulture, Sustainable International Development, Human Health and Nutrition) and experts on three campuses created the instruction. The course is intended to be multi-disciplinary, and students should use their contextual knowledge to add to weekly discussions. Prerequisite: Graduate standing. (Typically offered: Spring Even Years)
This course is cross-listed with AGED 5993, FDSC 5993
HORT 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

HORT 602V. Special Topics in Horticulture. 1-3 Hour.
Discussion and advanced studies on selected topics in genetics, plant breeding, physiology and culture of horticultural crops. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

HORT 6033. Molecular Plant Breeding. 3 Hours.
In-depth study of genetic improvement and techniques. Covers both current and classical literature. Topics to be discussed: haploidy, genetic control of pairing, somatic instability, tissue culture and protoplast fusion, and male sterility. Lecture discussion 3 hours per week. Prerequisite: BIOL 2323 and BIOL 2321L (or ANSC 3123 and CSES 4103 or equivalent). (Typically offered: Fall)

HORT 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. May be repeated for degree credit. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

\section*{Hospitality Management (HOSP) Courses}

HOSP 1603. Introduction to Hospitality Management. 3 Hours.
Study of the hospitality industry from a global perspective. Emphasizes an introduction to the different sectors of the hospitality industry: food service, lodging, travel \& tourism, and marketing of the sectors. Exposes students to experienced practitioners who provide real life case studies and perspectives on management in the hospitality environment. Provides career development perspectives and instruction as well as management roles and techniques. (Typically offered: Fall and Spring)

\section*{HOSP 2603. Purchasing and Cost Control. 3 Hours.}

Food purchasing with emphasis on specifications. Relationship of food purchasing to available equipment. Receiving, storage, distribution, and inventory control. Meal quality control and costing. Food and nonfood materials, management of the purchasing process, and communication. Specification writing, menu analysis, and costing. Prerequisite: Must be a HESC, HNAD, FNAH, HOSP or IDST with EVMG track major or a EVMG-M student. (Typically offered: Fall and Spring)

HOSP 2611. Foodservice Sanitation. 1 Hour.
Principles and theory of food safety and sanitation in the hospitality and foodservice industries, focused on prevention of food borne illnesses and ensuring public health and consumer safety. Prerequisite: HNAD, FNAH, or HOSP major, NUTR-M students or CATEBS-FCSE students. (Typically offered: Fall and Spring)

\section*{HOSP 2633. Lodging Property Management. 3 Hours.}

Examines the organization, duties and administration of the hotel. Includes: the rooms division, convention/meeting spaces, and general business operations. Preor Corequisite: HOSP 1603. (Typically offered: Fall and Spring)

\section*{HOSP 2643. Intro to Casino Management. 3 Hours.}

This course provides an overview of casino operations including the economics of the casino and its interface with hotels and other organizations and the practices and problems associated with the casino management such as staffing, security, controls, taxation and entertainment. Prerequisite: HOSP 1603 and (Hospitality Management Bachelor of Science (HOSPBS) or Hospitality Management Minor (HOSP-M) or Event Management Minor (EVMG-M) students). (Typically offered: Spring)

\section*{HOSP 2653. Introduction to Hospitality Finance. 3 Hours.}

Accounting principles, procedures and transactions used for the compilation of financial reports in hospitality industries. Prerequisite: HOSP 1603. (Typically offered: Fall and Spring)

\section*{HOSP 3301. Hospitality Pre-Internship. 1 Hour.}

A study of job descriptions, responsibilities at the management level, structural operations, work procedures, job performance evaluations, job application, the resume and portfolio development in preparation for HOSP 4693 Hospitality Management Internship. Prerequisite: HOSP 1603, HOSP majors only, and junior standing. (Typically offered: Fall and Spring)

HOSP 3623. Introduction to Meetings and Events Management. 3 Hours.
Focuses on the planning and management of meetings and events in the hospitality industry. Includes developing event goals and objectives, site planning and management, event set up, risk management, food and beverage planning and management, budgeting, working with event services vendors, and marketing and promotion of events and meetings. Prerequisite: HOSP 1603, HOSP 2603, and (Hospitality majors (HOSPBS), Event Management Minor (EVMG-M) students or IDSTBA majors with EVMG track). (Typically offered: Fall)

HOSP 3653. Hospitality, Dietetic Management and Human Resources. 3 Hours.
Function and methods of management as related to the hospitality, nutrition and dietetic industries. Topics include: recruitment, placement, talent management, training and development, and compensation. Prerequisite: HOSP 1603 or NUTR 1201, and junior standing. (Typically offered: Fall, Spring and Summer)

\section*{HOSP 3673. Event Safety and Venue Management. 3 Hours.}

This course will provide students with the information, skills, and tools necessary to help provide a safe environment, reduce liability, and guide individual and group behavior at events. Students will learn how to develop a risk management and safety plan for an event and/or venue, how to identify and plan to avoid potential problems, and how to implement safety and crowd management plans to ensure a safe event. The primary focus of the course will be on live event and venue safety planning. Prerequisite: HOSP 1603, HOSP 2603, HOSP 3623 and (Event Management Minor (EVMG-M) students or IDST major with EVMG track). (Typically offered: Spring)

\section*{HOSP 3713. Beverage Management. 3 Hours.}

This course introduces students to the concepts of the beverage industry with an emphasis on management. Standards of hospitality operation are explored as well as a brief overview of the products of the alcohol industry: wine, beer, and spirits. Also included is an overview of non-alcoholic products such as coffee, tea, water, and carbonated beverages. History, cultural relationships, production methods, service and sanitation, and concepts of sales are examined. Prerequisite: HOSP 1603, HOSP 2603, and students must be Hospitality (HOSP) majors; Student must be at least 21 years of age at start of term. (Typically offered: Fall)
HOSP 4602L. Culture and Cuisines of the World Practicum. 2 Hours. Development of service management skills for the hospitality industry through preparation and service of food, staffing, professionalism, recipe standardization, menu planning, cost control, sanitation, safety, and overall quality assurance. Instruction for planning food flow from receiving to service of meals, including choosing proper equipment for the flow plan and service items. Student must have a current Food Managers Certificate which is achieved upon successful completion of HOSP 2611. Laboratory 7 hrs per week. Pre- or Corequisite: HOSP 4603. Prerequisite: NUTR 1213, HOSP 2603, HOSP 2611, Junior standing, Hospitality Management Bachelor of Science in Human Environmental Science (HOSPBS) majors only, and instructor consent required. (Typically offered: Fall and Spring)

HOSP 4603. Culture and Cuisines of the World. 3 Hours.
Explores foods and food ways of various cultural/ethnic groups. Considers origin and migration of foods and customs throughout the world. Studies food's relationship to cultural groups, geographical location, social practices and economic wellbeing. Analyzes impact of multiple cultures on foods, food preparation, and food ways in the U.S. Students must have a current Food Managers Certification, which is achieved upon successful completion of HOSP 2611. Pre- or corequisite: HOSP 4602L. Prerequisite: HOSP 1603, HOSP 2603, HOSP 2611, junior standing, HOSP majors only and instructor consent required. (Typically offered: Fall and Spring)

\section*{HOSP 4613. Festival Management and Analysis. 3 Hours.}

This course provides students both knowledge and practical experiences of festival management and analysis. Lectures based on the selected textbook will systematically offer students the understanding of multiple aspects of a festival, such as alignment with the target attendees, connect to community and place, festival media platforms, and monitoring and evaluating festivals. Prerequisite: HOSP 1603, HOSP 2603, and HOSP 3623. (Typically offered: Fall)

HOSP 4643. Special Events Management. 3 Hours.
Hands-on study of special events. Planning activities include conception, planning, implementation, execution of the hospitality program's annual fundraising event and evaluation. The interaction between staff, customers, guests, vendors, and others necessary to implement a successful special event. Topics including marketing, public relations and volunteer coordination are implemented. Additional focus on catering through, hotels, restaurants, and private companies. Prerequisite: HOSP 1603, HOSP 2603, HOSP 3623 and HOSP majors only. (Typically offered: Spring)
HOSP 4653. Global Travel and Tourism Management. 3 Hours.
Course recounts the history of travel, explores the future, and discusses the components of tourism from a global perspective. An overview of tourism planning at the global level will be presented. A variety of planning theories, procedures and tourism guidelines to meet the diverse needs of travelers, destination communities, hospitality organizations, public, non-governmental organizations, and the private sector will be introduced in this class. Prerequisite: HOSP 1603, (HOSP 2633 or HOSP 2643), Junior Standing and (Hospitality Management Minor (HOSP-M) students or IDST major with HOSP track). (Typically offered: Spring)
HOSP 4663. Hospitality Management Capstone. 3 Hours.
Integration of previous classroom, laboratory, and practical experiences through development of a comprehensive project. Additional focus on application of critical thinking, demonstration of leadership principles, interaction with industry professionals and development of an awareness of societal and ethical issues and their application to the hospitality industries. Prerequisite: Senior standing. Pre- or corequisite: HOSP 4603, HOSP 4602L, and HOSP 3653. (Typically offered: Spring)
HOSP 4673. Destination Marketing \& Operations. 3 Hours.
This course is designed to provide students with a basic understanding of the tasks and processes involved in running a successful destination management organization (DMO). The course places heavy emphasis on destination marketing. Prerequisite: HOSP 1603 and junior standing. (Typically offered: Fall)
HOSP 4693. Hospitality Management Internship. 3 Hours.
Supervised experience in an instructor approved work/learning situation relating to the hospitality industry in multiple aspects of a hospitality organization. Emphasis on application of knowledge and skills to actual job roles and responsibilities related to a future career in the hospitality industry. Requires employment in a hospitality setting for a minimum of 250 clock hours that must be completed in the semester of enrollment. Prerequisite: HOSP 3301, HOSP 2611, HOSP 2633, HOSP 2653, HOSP 3623, HOSP 3653, Junior standing, restricted to HOSP students, 500 hours of documented work-related hospitality industry experience and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{HOSP 5653. Global Travel and Tourism Management. 3 Hours.}

The course recounts the history of travel, explores the future, and discusses the components of tourism from a global perspective. (Typically offered: Spring)

HOSP 5663. Critical Issues and Trends in Hospitality and Tourism. 3 Hours. The hospitality industry is arguably one of the most important sources of income and foreign exchange and is growing rapidly. However, national and international crises have huge negative economic consequences. This course explores change in the world and applies this to forecasting change in the hospitality and tourism industries. This course examines the current state of the industry and makes educated predictions to the future of the lodging, cruise, restaurant, technology, and travel and tourism industries. (Typically offered: Spring)

\section*{HOSP 5673. Destination Marketing and Operations. 3 Hours.}

This course is designed to provide students with a basic understanding of the tasks and processes involved in running a successful destination of management organization (DMO). This course places heavy emphasis on destination marketing. Prerequisite: HOSP 1603. (Typically offered: Fall)

\section*{HOSP 5693. Hospitality Management Internship. 3 Hours.}

Supervised experience in an instructor approved work /learning situation relating to the hospitality industry in multiple aspects of a hospitality organization. Emphasis on application of knowledge and skills to actual job roles and responsibilities. Requires employment in a hospitality setting for a minimum of 250 clock hours. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer)

\section*{Human Development and Family Sciences (HDFS)}

\section*{Courses}

\section*{HDFS 1403. Life Span Development. 3 Hours.}

A broad overview of the physical, psychological, and social development of the individual from conception until death. Emphasis is on individual development in a family context. Lecture 3 hours per week. (Typically offered: Fall and Spring)

HDFS 1403H. Honors Life Span Development. 3 Hours.
A broad overview of the physical, psychological, and social development of the individual from conception until death. Emphasis is on individual development in a family context. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to HDFS 1403.
HDFS 1423. Observation and Foundations for Teaching Young Children. 3 Hours.
Designed to acquaint students with the historical importance of early childhood education, the recognized standards for practice, the variety of program models, and career opportunities available. Emphasis will be placed on theories, evidencebased practice, ethics, diversity, and professional preparation for this knowledgebased, skill-driven field. Students will also obtain knowledge of state and federal laws pertaining to the care and education of young children. (Typically offered: Fall)

HDFS 2401L. Infant and Toddler Development Laboratory. 1 Hour.
Introduction to infant and toddler development. Focus on observation and applied experience with children 0-3 documenting cognitive, emotional, language, physical, and social development, and demonstrating developmentally appropriate practice.
Corequisite: HDFS 2403. Prerequisite: HDFS majors or BRKD majors or HDFS minors or CATEBS-FCSE majors or instructor consent. (Typically offered: Fall and Spring)

\section*{HDFS 2403. Infant and Toddler Development. 3 Hours.}

Infant and toddler development from conception through toddlerhood with emphasis on physical, emotional, social, language, and cognitive domains. Theoretical and research-based information will be applied to developmentally appropriate practice. Historical and future perspectives will be explored as will the expanding opportunities for professional work with infants and toddlers. Observations in care centers will be assigned. Corequisite: HDFS 2401L. Prerequisite: HDFS majors or BRKD majors or HDFS minors or CATEBS-FCSE majors or by instructor consent. (Typically offered: Fall and Spring)

\section*{HDFS 2413. Family Relations. 3 Hours.}

Courtship, marriage, and parenthood in the United States, with attention to cultural and psychological factors which affect relations among family members. Lecture 3 hours per week. (Typically offered: Fall and Spring)

HDFS 2413H. Honors Family Relations. 3 Hours.
Courtship, marriage, and parenthood in the United States, with attention to cultural and psychological factors which affect relations among family members. Lecture 3 hours per week. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to HDFS 2413.

HDFS 2433. Child Development. 3 Hours.
Theory, research, and application in physical, cognitive, social, and emotional development of the child, studied in the biocultural context. Begins with prenatal development and continues through adolescence, with special emphasis on early and middle childhood. (Typically offered: Fall and Spring)

HDFS 2433H. Honors Child Development. 3 Hours.
Theory, research, and application in physical, cognitive, social, and emotional development of the child, studied in the biocultural context. Begins with prenatal development and continues through adolescence, with special emphasis on early and middle childhood. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to HDFS 2433.
HDFS 2463. Introduction to Leadership and Administration in the Helping Professions. 3 Hours.

The class is a basic introduction of leadership and emotional intelligence as it relates to becoming a successful administrator in the helping professions-based careers. Emphasis will be on administrators' roles as leaders in organizations. Topics include facilities, budget, staff development, and policy manuals. Prerequisite: Human Environmental Science (HESCBS) majors, Human Development \& Family Science (HDFSBS) majors, Birth through Kindergarten (BRKDBS) majors, Human Development \& Family Science (HDFS-M) minors, or departmental consent. (Typically offered: Fall)

\section*{HDFS 2471L. Child Guidance Laboratory. 1 Hour.}

Introduction to the guidance system. Focus on discipline techniques that are positive and age/stage appropriate for children ages 3-8. Corequisite: HDFS 2473. Prerequisite: HDFS 2433. (Typically offered: Fall and Spring)

HDFS 2473. Child Guidance. 3 Hours.
Introduction to the guidance system. Focus on discipline techniques that are positive and age/stage appropriate for children ages 3-8. Lecture 3 hours per week plus 1 hour demonstration. Corequisite: HDFS 2471L. Prerequisite: HDFS 2433. (Typically offered: Fall and Spring)

HDFS 2483. Family Financial Management. 3 Hours.
Economic considerations of the family in a rapidly changing society. Family finance and consumer problems are emphasized. Prerequisite: HDFS 2413 or HDFS 2413H. (Typically offered: Fall and Spring)

\section*{HDFS 2493. Introduction to Cultural Competence. 3 Hours.}

Basic introduction to definitions of intercultural competence, diversity, cultural values and beliefs, attitudes and verbal and non-verbal behavior, are examined to identify basic differences among individuals from diverse cultural backgrounds and across populations. (Typically offered: Fall, Spring and Summer)

HDFS 2603. Rural Families and Communities. 3 Hours
Meaning of sociology and sociological concepts with reference to rural society, families and communities; interdependence of rural and urban population in ecological areas; institutions; social change and adjustment. (Typically offered: Fall and Spring)

\section*{HDFS 2603H. Honors Rural Families and Communities. 3 Hours.}

Meaning of sociology and sociological concepts with reference to rural society, families and communities; interdependence of rural and urban population in ecological areas; institutions; social change and adjustment. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to HDFS 2603.

HDFS 3333. Language and Literacy Pedagogy for Birth through Kindergarten Educators. 3 Hours.
This course combines theory on emergent language and literacy development with research-based pedagogy for birth through kindergarten classrooms. Topics include: language and literacy development and exceptionalities, English Language Learners, environmental influences, best practice pedagogy, identifying language and literacy delays, and intervention strategies. This course includes a service learning component. Prerequisite: HDFS 2433, HDFS 2403 and HDFS 2401L. (Typically offered: Fall)

\section*{HDFS 3423. Adolescent Development. 3 Hours.}

Physiological and psychological development of the older child and youth, from pre-adolescence to adulthood. Theories of adolescent development. Crosscultural studies. Peer group influences. Some attention to pathological behaviors. Prerequisite: HDFS 1403 or PSYC 2003. (Typically offered: Fall and Spring)

\section*{HDFS 3423H. Honors Adolescent Development. 3 Hours.}

Physiological and psychological development of the older child and youth, from pre-adolescence to adulthood. Theories of adolescent development. Crosscultural studies. Peer group influences. Some attention to pathological behaviors. Prerequisite: HDFS 1403 or PSYC 2003 and honors standing. (Typically offered: Spring Odd Years)
This course is equivalent to HDFS 3423.
HDFS 3443. Families in Crisis. 3 Hours.
An interdisciplinary perspective on internal and external crises faced by contemporary families, including substance abuse, natural disasters and other crisis events. Students will explore the family processes during such experiences and develop strategies for stress management, coping, and recovery. Lecture 3 hours per week. Prerequisite: HDFS 2413 or HDFS 2413H. (Typically offered: Fall)

HDFS 3443H. Honors Families in Crisis. 3 Hours.
An interdisciplinary perspective on internal and external crises faced by contemporary families, including substance abuse, natural disasters and other crisis events. Students will explore the family processes during such experiences and develop strategies for stress management, coping, and recovery. Lecture 3 hours per week. Prerequisite: Honors standing and HDFS 2413 or HDFS 2413H. (Typically offered: Fall)
This course is equivalent to HDFS 3443.

\section*{HDFS 3453. Parenting and Family Dynamics. 3 Hours.}

Focus is on influence of parenting and family dynamics on individual development, especially factors in family life which contribute to normal psychological development. Topics include family values, the psychology of sex and pregnancy, the transition to parenthood, childbearing techniques, family influences on cognitive and social development, and changes in family relationships during the life cycle. Prerequisite: (HDFS majors, HDFS minors, BRKD majors, CATEBS-FCSE majors, or IDST majors with HDFS track) and (HDFS 1403 or PSYC 2003). (Typically offered: Fall and Spring)

\section*{HDFS 3463. The Hospitalized Child: Child Life Programming. 3 Hours.}

Introduces child life programming in health care settings. Topics include: roles and expectations of a Child Life Specialist, importance of play, coping techniques, family advocacy, administration and professionalism. Lecture 3 hours per week. Prerequisite: HDFS 2433 and (HDFS or BRKD majors, HDFS or CDSV minors, or IDST major with a CDSV or HDFS track). (Typically offered: Fall and Spring)

HDFS 3481. Pre-Internship in Human Development and Family Sciences. 1 Hour.
This course prepares students for their internship experience (HDFS 4483) in Human Development and Family Sciences. Topics covered include professional and ethical behavior when working with people, families and communities. The course will also cover professional and career development topics. By the end of the course, students are expected to have secured an internship position suitable for HDFS 4483. Students should enroll in this course no earlier than the semester before they anticipate enrolling in HDFS 4483. Prerequisite: Junior standing and HDFS majors only. (Typically offered: Fall and Spring)

HDFS 4212L. Math and Science for Young Children Lab. 2 Hours.
Students will plan curriculum for young children ages 0-5 in the areas of math and science. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4213. (Typically offered: Fall)

\section*{HDFS 4213. Math and Science for Young Children. 3 Hours.}

Students will plan curriculum for young children ages 0-5 in the areas of math and science. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will design lesson plans for young children and will learn about effective implementation of curriculum. Corequisite: HDFS 4212L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Fall)
HDFS 4222L. Creative and Social Experiences for Young Children Lab. 2 Hours.
Students will plan curriculum for young children ages 0-5 in the areas of the arts and social emotional learning. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4223. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Spring)
HDFS 4223. Creative and Social Experience for Young Children. 3 Hours. Students will plan curriculum for young children ages 0-5 in the areas of the arts and social emotional learning. Emphasis will be placed on theories of learning, developmentally appropriate practice (DAP), professionalism, philosophy, and ethical conduct. Students will design lesson plans for young children and will learn about effective implementation of curriculum. Corequisite: HDFS 4222L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Spring)
HDFS 4233. Developmental Assessment in Early Childhood. 3 Hours. Students will learn about developmentally appropriate observation, assessment, and documentation techniques and how to use these in high quality early childhood classrooms. Advantages and limitations of various assessment techniques, considerations used when interpreting findings, and the and making referrals will be discussed. Additional emphasis will be on anti-biased and culturally competent assessment, giving students methods to recognize and support learning and development in all young children. (Typically offered: Fall)

\section*{HDFS 4313. Building Family and Community Relationships. 3 Hours.}

This course will help students interested in early childhood to value the role parents play in schools and the role schools play in a community. Various models of parent involvement will be explored. Students will plan a school-community collaborative which values diverse cultures. Prerequisite: (HDFS 2413 or HDFS 2603) and (HDFS or BRKD majors, HDFS or CDSV minors, or IDST major with CDSV track or IDST major with HDFS track). (Typically offered: Spring)

HDFS 4332. Curriculum and Assessment: Birth to Three Years. 2 Hours.
The course will introduce students to curriculum planning and assessment in programs serving children from birth to three years of age. Emphasis will be on responsive relationships and curriculum focused on routines and activities. Corequisite: HDFS 4332L. Prerequisite: HDFS 2403 and HDFS 2401L. (Typically offered: Spring)

HDFS 4332L. Curriculum and Assessment: Birth to Three Years Laboratory. 2 Hours.
Laboratory. Corequisite: HDFS 4332. Prerequisite: HDFS 2403 and HDFS 2401L. (Typically offered: Spring)
HDFS 4342. Curriculum and Assessment: Three Years through Kindergarten. 2 Hours.
Students will plan curriculum and assessment for children three years of age through kindergarten. Emphasis will be on professionalism, philosophy and a code of ethics. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Corequisite: HDFS 4342L. Prerequisite: HDFS 2473 and HDFS 2471L. (Typically offered: Fall)
HDFS 4342L. Curriculum and Assessment: Three Years through Kindergarten. 2 Hours.
Laboratory. Corequisite: HDFS 4342. (Typically offered: Fall)
HDFS 4353. Play as Development in Childhood. 3 Hours.
This course will examine the contribution of play to cognitive, social, and emotional development of children. It will provide an overview of play theories and practices in indoor and outdoor settings, with an emphasis on nature-based learning and diversity and inclusion. Prerequisite: HDFS 2433, junior standing and HDFS, BRKD, or IDSTBA major or HDFS or CDSV minor. (Typically offered: Fall and Spring)

\section*{HDFS 4363. Play as Development in Adulthood. 3 Hours.}

This course will examine play as it pertains to development throughout life with a particular focus on adulthood. The modes of adult play will be examined, along with the benefits of play across adulthood. Emphasis will be on play, not as opposition to work, but as a part of a full life. Prerequisite: HDFS 1403. (Typically offered: Fall and Spring)

HDFS 4373. Internship: Infant, Toddler, and Preschool Programs. 3 Hours.
This course provides the student with interactive and observational experiences with young children in community-based early childhood programs. Some on-campus meetings will be required. Prerequisite: HDFS 4213, HDFS 4212L, HDFS 4223, and HDFS 4222L. (Typically offered: Spring)

\section*{HDFS 4383. Internship: Kindergarten Programs. 3 Hours.}

This course provides the student with interactive and observational experiences with young children in community-based kindergarten programs. Some on-campus meetings will be required. Prerequisite: HDFS 4213, HDFS 4212L, HDFS 4223, and HDFS 4222L. (Typically offered: Spring)
HDFS 4413. Infancy: Brain, Learning and Social Cognition. 3 Hours.
Investigation into how brain mechanisms interact with experience to provide the basis for learning and social cognition. Topics include face perception, motor cognition, imitation, joint attention and shared experience, empathy and altruism, theory of mind, social and moral cognition, language, memory, number, geometry and navigation, object representation, and executive function. Prerequisite: HDFS 2433 or PSYC 3093. (Typically offered: Spring)
HDFS 4413H. Honors Infancy: Brain, Learning and Social Cognition. 3 Hours. Investigation into how brain mechanisms interact with experience to provide the basis for learning and social cognition. Topics include face perception, motor cognition, imitation, joint attention and shared experience, empathy and altruism, theory of mind, social and moral cognition, language, memory, number, geometry and navigation, object representation, and executive function. Prerequisite: Honors standing and HDFS 2433 or PSYC 3093. (Typically offered: Spring) This course is equivalent to HDFS 4413.

HDFS 4423. Adult Development. 3 Hours.
This course examines the social, psychological, and biological development that occurs throughout adulthood, with an emphasis on middle and later adulthood. Taking a life course perspective, this course particularly focuses on life course trajectories and variabilities across cultural contexts. Prerequisite: HDFS 1403 and Junior Standing. (Typically offered: Fall and Spring)

\section*{HDFS 4443. Gerontology. 3 Hours.}

Physiological and psychological development of the aging individual, extended family relations, service networks for the elderly, and retirement activities. Some attention to housing and care needs of persons in advanced years. Lecture 3 hours per week. Seminar. Prerequisite: HDFS 1403 (or HDFS 2413 or PSYC 2003 or SCWK 2133) and junior standing. (Typically offered: Spring)

\section*{HDFS 4473. Multicultural Families. 3 Hours.}

The course provides students with opportunities to gain awareness of their own cultures and families, reflect on families from a diverse array of cultures, and develop critical thinking skills needed to effectively engage with people and families from cultures different than their own. Prerequisite: HDFS 2493 and Junior or Senior Standing. (Typically offered: Fall)
HDFS 4483. Internship in Human Development and Family Studies. 3 Hours.
The internship experience provides practical experience for students in settings that are designed to serve the needs of individuals and/or families across the life span. Students must work a minimum of 150 hours in the setting. May be repeated for up to 6 hours of degree credit. Prerequisite: Grade of B or higher in HDFS 3481, junior standing, and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{HDFS 4493. Public Policy Advocacy for Children and Families. 3 Hours.}

Public policy advocacy as related to children and family issues. Strategies for advocacy will be emphasized. Lecture three hours per week. Prerequisite: Junior standing and (HDFS majors or IDST majors with HDFS track). (Typically offered: Fall)
HDFS 4493H. Honors Public Policy Advocacy for Children and Families. 3 Hours.
Public policy advocacy as related to children and family issues. Strategies for advocacy will be emphasized. Lecture three hours per week. Prerequisite: Honors and Junior standing, and (HDFS major or IDST major with HDFS track). (Typically offered: Fall)
This course is equivalent to HDFS 4493.

\section*{HDFS 4603. Environmental Sociology. 3 Hours.}

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. (Typically offered: Irregular)
This course is cross-listed with SOCI 4603, SUST 4603.
HDFS 4763. Research in HDFS: Methodological Approaches. 3 Hours. This class introduces the methodology of HDFS and other social sciences in the social world. It covers research design, sampling, measurement, and other topics that underlie the social science conclusions presented to you in other classes. The class begins with an introduction to the goals of social science research, then focuses on the understanding of the 3 validities with which social scientists, and consumer of social science, must concern themselves: Internal, Measurement, and External. Each of these three validities is used as the focus of a course section. The class concludes with a fourth section that integrates these topics and other social science methods. It is recommended that HDFS students complete Rural Families and Communities (HDFS 2603) prior to enrolling in this course. Prerequisite: HDFS major and Junior Standing. (Typically offered: Fall)

\section*{HDFS 4773. Research in HDFS: Statistical Approaches. 3 Hours.}

This course is an introduction to analytical approaches to research in human development and family sciences and will examine the principles and practices underlying the development of knowledge in the field. Emphases in this course will be on conducting and evaluating data analyses relevant to human environmental sciences majors. Students will become critical consumers of data and develop basic skills to analyze and interpret their own data. Prerequisite: HDFS 4763, STAT 2303, and HDFS major. (Typically offered: Spring)

\section*{HDFS 5403. Family Theories and Methods. 3 Hours.}
this course is an introduction to graduate study in families. The course focuses on historical and contemporary family theories and research methods that have influenced research on families. Prerequisite: Graduate standing. (Typically offered: Spring)

HDFS 5413. Adult Development. 3 Hours.
The course covers physical, cognitive, social, and personal dimensions of adult development. The information is presented from a lifespan developmental framework which encompasses (a) a multidisciplinary perspective, (b) consideration of the impact of prior development on late life as well as socio-historical influences (c) recognition of individual differences among older persons, and (d) concern for promoting optimal functioning. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{HDFS 5423. Theories of Human Development. 3 Hours.}

Classic and contemporary theories and theoretical issues concerning human development across the life span. Prerequisite: Graduate standing. (Typically offered: Fall Even Years)

\section*{HDFS 5433. Advanced Studies in Child Development. 3 Hours.}

An in-depth examination of issues in development during infancy, early, and middle childhood. Developmental theory and accomplishments/milestones are studied in the biocultural context. Emphasis is on review and analysis of classic and recent research literature and on evaluation of theoretical perspectives based on research evidence. Prerequisite: Graduate standing. (Typically offered: Spring)
HDFS 5453. Aging in the Family. 3 Hours.
This course considers theories and research on personal and family transitions and experiences in mid to late life that impact individuals and their family relationships. Applied assignments address these same issues. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{HDFS 5463. Administration and Leadership in the Helping Professions. 3} Hours.
Planning, developing, operating, and evaluating programs in the helping professions, including child care and family-related agencies. Emphasis will be on administrators' roles as leaders in organizations. Topics include facilities, budget, staff development, and policy manuals. (Typically offered: Fall)

HDFS 5473. Cognitive Health. 3 Hours.
Cognitive skills form the foundation for functioning in everyday life and these skills take on added importance in older adulthood. This course focuses on selected theoretical approaches and current research related to cognitive aging. We will review normative and non-normative cognitive changes, assessment techniques, and prevention/intervention efforts. Throughout the course we will keep the role of environment and lifespan implications in the forefront of our discussion. Prerequisite: Graduate standing. (Typically offered: Summer Odd Years)

HDFS 5483. Creativity and Aging. 3 Hours.
What happens to creativity as a person ages? This unique class will help students to understand developmental and pathological changes in the brain that can lead to changes in creative output over time. Through hands-on experiences and direct association with older adults, students will grow an appreciation for creativity produced and inspired by older people. This course is intended to provide experiences that will help the student to be able to create art programs for older adults. Prerequisite: Graduate standing. (Typically offered: Summer)

HDFS 5493. Environments and Aging. 3 Hours.
Designing for aging is big business. The older population of the U.S. is increasing in numbers, and lives in more varied kinds of housing, from single family homes to specially designed residential units for people experiencing dementia. This course uses interdisciplinary perspectives in an on-line web-based format to explore the preferences and needs of older adults and the attributes of various physical environments that enhance their lives. Students apply this knowledge to the design and management of housing, institutional facilities, neighborhoods, and communities. Prerequisite: Graduate standing. (Typically offered: Spring)

HDFS 5593. Public Policy Advocacy for Children and Families. 3 Hours. Public policy advocacy as related to children and family issues. Strategies for advocacy will be emphasized. Lecture three hours per week. Graduate degree credit will not be given for both HDFS 4493 and HDFS 5593. (Typically offered: Fall)

\section*{HDFS 5603. Environmental Sociology. 3 Hours.}

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. Graduate degree credit will not be given for both HDFS 4603 and HDFS 5603. (Typically offered: Fall)
This course is cross-listed with SOCI 5603.

\section*{HDFS 5773. Advanced Studies in Family Science. 3 Hours.}

An in-depth examination of patterns and trends in families; adaptive responses in families in light of environmental, economic, political, social and technological changes. Emphasis is on the evaluation of classic, recent and emergent research literature. Prerequisite: Graduate Standing. (Typically offered: Fall)

\section*{HDFS 5823. Mental Health and Aging. 3 Hours.}

This is an advanced level course in Mental Health and Aging. The student will be introduced to the range of issues involved in this subject utilizing several theoretical perspectives within an overall systems framework. The major emotional, mental, and psychiatric problems encountered in old age will be examined along with the normal processes of the aging individual's personality, mental and brain functions. Common interventions and treatments available will be explored, as well as the consequences of no or inappropriate services. Challenges and barriers on the macro and micro systems levels will be presented with implications for the future of this field. Prerequisite: Graduate standing. (Typically offered: Spring)

HDFS 5843. Physical Health and Nutrition in Aging. 3 Hours.
This course identifies the basic physiological changes during aging and their impacts in health and disease. The focus will be on successful aging with special emphasis on physical activity and nutrition. Practical application to community settings is addressed. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{HDFS 5853. Policy and Aging. 3 Hours.}

This course introduces much of the history behind the policies and programs targeted at aging individuals. Provides overview of the factors that impact economic well-being in late life, as well as an overview of community resources available to older adults. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{HDFS 5873. Seminar in Long Term Care-. 3 Hours.}

This course provides valuable information to the person interested in a leadership role in long-term care, but is also useful to persons who think their careers might intersect with senior living organizations or for those students who have a potential interest in long-term care options for their own parents or loved ones. The class is designed to benefit from a very successful intercession course taught each December/January intercession by adjunct professor, Steve Shields. Steve had been CEO at Meadowlark Hills Retirement Community from 1994 until 2010. He is nationally known for his ability to motivate change in long-term care settings. Taped lectures and presentations from the intercession course will provide some of the content for this class. Prerequisite: Graduate standing. (Typically offered: Fall Odd Years)

\section*{Human Environmental Sciences (HESC)}

\section*{Courses}

HESC 255V. Special Topics. 1-6 Hour.
Topics not covered in other courses or a more intensive study of specific topics in the specializations of human environmental sciences. (Typically offered: Irregular) May be repeated for degree credit.

\section*{HESC 400V. Special Problems. 1-6 Hour.}

Special problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{HESC 455V. Special Topics. 1-6 Hour.}

Topics not covered in other courses, a focused study of specific topics in the students' areas of concentration. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HESC 455VH. Honors Special Topics. 1-6 Hour.
Topics not covered in other courses, a focused study of specific topics in the students' areas of concentration. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HESC 455 V .
HESC 500V. Special Problems. 1-6 Hour.
Special problems. Graduate degree credit will not be given for both HESC 400V and HESC 500V. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HESC 502V. Special Problems Research. 1-6 Hour.
Individual study or research for graduates in the field of human environmental sciences. (Typically offered: Fall, Spring and Summer)

HESC 5053. Survey Design and Scale Development. 3 Hours.
This course is designed to provide the expertise required to design and conduct survey research. Students will understand the instruments (scales/questionnaire) used in data collection processes and acquire the statistical skills necessary to develop and test these survey instruments. This course uses both theory and practice. Hands-on training will be provided via SPSS package for data analyses, and Qualtrics will be used for web-based surveys. Prerequisite: 3 hours of graduatelevel statistics coursework and HESC 5463 or AGED 5463 or instructor consent. (Typically offered: Spring)
This course is cross-listed with AGED 5493.

\section*{HESC 5463. Research Methodology in Social Sciences. 3 Hours.}

Logical structure and the method of science. Basic elements of research design; observation, measurement, analytic method, interpretation, verification, presentation of results. Applications to research in the economic and sociological problems of agriculture and Human Environmental Sciences. Prerequisite: Graduate standing. (Typically offered: Fall)
This course is cross-listed with AGED 5463.

HESC 555V. Special Topics in Human Environmental Sciences. 1-3 Hour. Topics not covered in other courses or a more intensive study of specific topics in the specializations of human environmental sciences. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

HESC 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{HESC 700V. Doctoral Dissertation. 1-18 Hour.}

Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Humanities (HUMN)}

\section*{Courses}

\section*{HUMN 1114H. Honors Roots of Culture to 500 C.E.. 4 Hours.}

This course constitutes the first segment of a four-semester interdisciplinary study of the Egyptian Book of the Dead, the Torah, the Roman Colosseum, Hinduism, and Confucianism. Open to first-year Honors students by invitation only. Corequisite: Drill component. (Typically offered: Fall)

HUMN 1124H. Honors Equilibrium of Cultures 500-1600. 4 Hours.
This course constitutes the second segment of a four-semester sequence focusing on world cultures. Semester 2 may include the interdisciplinary study of Islam, early Byzantium, Gothic architecture, Heian Japan, and the ancient Maya. Open to firstyear Honors students by invitation only. Corequisite: Drill component. (Typically offered: Spring)

HUMN 2013. Introduction to Buddhism. 3 Hours.
Beginning with an analysis of the fundamental principles that underlie all Buddhist thought and practice, students will proceed through the major precepts that have historically distinguished the traditions of Southern and Northern Asia. Attention will also be given to Buddhism's spread through Europe and North America in the twentieth century. (Typically offered: Fall)

\section*{HUMN 2114H. Honors Birth of Modern Culture 1600-1900. 4 Hours.}

This course constitutes the third segment of a four-semester sequence focusing on world cultures. Semester 3 may include the interdisciplinary study of Renaissance Venice, feudal Japan, Moghul India, Jefferson's Monticello, and Darwinism. Open to second-year Honors students by invitation only. Corequisite: Drill component. (Typically offered: Fall)
HUMN 2213. Introduction to World Religions. 3 Hours.
A survey of major religious traditions, including--but not limited to--Hinduism, Buddhism, Judaism, Christianity, and Islam. (Typically offered: Spring and Summer)

HUMN 301V. Internship in Humanities. 1-3 Hour.
Work experience in the Arkansas Humanities Center or other humanities entity or organization. Project required. (Typically offered: Fall, Spring and Summer)

\section*{HUMN 3083. Professional Topics. 3 Hours.}

Specialized topics related to professional issues in the humanities, e.g. academic and alternative-academic job searches, publication workshops, public humanities, and/or teaching of humanities disciplines at various levels. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with ENGL 3083.
HUMN 3923H. Honors Colloquium. 3 Hours.
Treats a special topic or issue offered as a part of the Honors Program. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit.

HUMN 425V. Colloquium. 1-6 Hour.
An interdisciplinary, value-oriented discussion course. (Typically offered:
Irregular) May be repeated for up to 6 hours of degree credit.

HUMN 425VH. Honors Colloquium. 1-6 Hour.
An interdisciplinary, value-oriented discussion course. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to HUMN 425V.

\section*{HUMN 5083. Professional Topics. 3 Hours.}

Specialized topics related to professional issues in the humanities, e.g. academic and alternative-academic job searches, publication workshops, public humanities, and/or teaching of humanities disciplines at various levels. (Typically offered: Spring Odd Years)
This course is cross-listed with ENGL 5083.

\section*{Industrial Engineering (INEG)}

\section*{Courses}

INEG 2001. Industrial Engineering Seminar. 1 Hour.
Overview of the Department of Industrial Engineering: faculty and their backgrounds and interests, staff and the services they provide, facilities, curricular requirements, extracurricular opportunities, post-graduate opportunities. (Typically offered: Fall)
INEG 2103. Introduction to Industrial Engineering. 3 Hours.
Survey of industrial engineering problems. Application of key concepts from linear algebra and calculus in solving industrial engineering problems. Use of spreadsheets in solving industrial engineering problems. Visualization of common types of industrial engineering data. Exploration of the principles of effective teamwork and professionalism. Prerequisite: MATH 2445 or MATH 2514 or MATH 2554. (Typically offered: Fall and Spring)

\section*{INEG 2214. Computing Methods for Industrial Engineers I. 4 Hours.}

Introduction to programming and computing methods within the context of traditional industrial engineering problem solving. Students will be exposed to classic industrial engineering problem scenarios. Basic techniques within object-oriented programming, including designing classes, using objects, creating methods, looping and decision constructs, arrays, and file handling, will be used to facilitate solving these problems. Pre- or Corequisite: INEG 2103. (Typically offered: Fall and Spring)

\section*{INEG 2223. Computing Methods for Industrial Engineers II. 3 Hours.}

A continuation of INEG 2214. Review of fundamental computing methods and exposure to advanced use of computing libraries. Developing and implementing algorithms using computing methods to solve illustrative and practical problems of interest to industrial engineers. Students will use existing computing libraries, data structures, and programming interfaces to implement software using problem-based learning. Prerequisite: INEG 2214. (Typically offered: Fall and Spring)

\section*{INEG 2314. Statistics for Industrial Engineers I. 4 Hours.}

Applications to industrial engineering of descriptive statistics, single-population point and interval estimation, single-population hypothesis testing, two-population point and interval estimation, two-population hypothesis testing, goodness-of-fit testing, contingency table testing, linear regression, correlation, design of experiments, and analysis of variance. Introduction to statistical quality control. Use of modern statistical analysis software is emphasized. Prerequisite: INEG or DTSC students only. Pre- or corequisite: INEG 2103 or DASC 2594. (Typically offered: Fall and Spring)

\section*{INEG 2314H. Honors Statistics for Industrial Engineers I. 4 Hours.}

Applications to industrial engineering of descriptive statistics, single-population point and interval estimation, single-population hypothesis testing, two-population point and interval estimation, two-population hypothesis testing, goodness-of-fit testing, contingency table testing, linear regression, correlation, design of experiments, and analysis of variance. Introduction to statistical quality control. Use of modern statistical analysis software is emphasized. Prerequisite: Honors standing, and INEG or DTSC students only. Pre- or corequisite: INEG 2103 or DASC 2594. (Typically offered: Fall and Spring)
This course is equivalent to INEG 2314.

INEG 2323. Probability and Stochastic Processes for Industrial Engineers. 3 Hours.
Development and analysis of industrial engineering applications of random experiments, random variables, renewal processes, Poisson processes, and Markov chains. Application areas include inventory, quality control, queueing, and reliability. Pre- or corequisite: INEG 2103 or DASC 2594. (Typically offered: Fall and Spring)

INEG 2333. Applied Probability and Statistics for Engineers II. 3 Hours.
Applications to engineering problems of two-population point and interval estimation, two-population hypothesis testing, linear regression, correlation, design of experiments, analysis of variance, and nonparametric statistics. Introduction to statistical quality control. Corequisite: Drill component. Prerequisite: INEG 2314. (Typically offered: Fall and Spring)

\section*{INEG 2413. Engineering Economic Analysis. 3 Hours.}

Economic aspects of engineering, including current economic problems and the treatment of estimates when evaluating alternative courses of action. Methods of selection and replacement of equipment and break-even points of operation; desirability of new processes or projects where asset life, rate of return on investment, and first, fixed, differential, marginal, and sunk costs must be considered. Corequisite: Drill component. Prerequisite: MATH 2445 or MATH 2514 or MATH 2554. (Typically offered: Fall and Spring)

INEG 2613. Introduction to Operations Research. 3 Hours.
Introduction to modeling and analysis of deterministic operations design and planning problems using formal optimization algorithms and software. Identification and formulation of appropriate applications, linear programming, sensitivity, network flows/transportation/assignment problems, shortest paths, and integer linear programming. Prerequisite: INEG 2214 or DASC 1204. Pre- or corequisite: INEG 2103 or MATH 3083 or DASC 2594. (Typically offered: Fall and Spring)

INEG 3313. Engineering Probability and Statistics. 3 Hours.
Applications to engineering problems of data summary and presentation, random variables and probability distributions, point and interval estimation, hypothesis testing, linear regression, and design of experiments. Not for credit toward the Bachelor of Science in Industrial Engineering. Corequisite: Drill component. Prerequisite: MATH 2564. (Typically offered: Fall, Spring and Summer)

INEG 3333. Statistics for Industrial Engineers II. 3 Hours.
Introduction to model statistical learning, statistical learning beyond linear regression, data-driven anomaly detection and process monitoring, optimal sampling for data collection. Prerequisite: INEG 2223, INEG 2314 and INEG 2323. (Typically offered: Fall and Spring)

\section*{INEG 3443. Project Management. 3 Hours.}

Analysis of the strategic level of project management including planning, organizing, and staffing for successful project execution. Professional creativity, motivation, leadership, and ethics are also explored. At the tactical level, project selection, control, and systems management are analyzed. Systems development and decision support tools for project management are studied. (Typically offered: Fall and Spring)

\section*{INEG 3443H. Honors Project Management. 3 Hours.}

Analysis of the strategic level of project management including planning, organizing, and staffing for successful project execution. Professional creativity, motivation, leadership, and ethics are also explored. At the tactical level, project selection, control, and systems management are analyzed. Systems development and decision support tools for project management are studied. (Typically offered: Fall and Spring)
This course is equivalent to INEG 3443.

\section*{INEG 3513. Manufacturing Processes. 3 Hours.}

This course focuses on the manufacturing processes that impart geometry and properties to engineering materials including casting, metalworking, machining, joining, heat treatment, and polymer processes. Process selection and analysis, design-for-manufacturing principles, cost estimation, and selection of process parameters are covered. Lab component covers communication of manufacturing specifications via engineering drawings. Prerequisite: MEEG 2303. Corequisite: Lab component. (Typically offered: Spring)

\section*{INEG 3533. Transportation Logistics. 3 Hours.}

This course introduces students to transportation and logistics systems, including the components of logistics system and their interactions. There is emphasis on quantitative models and techniques for the optimization and analysis of transportation and logistics systems. Topics covered include: an overview of logistics systems and modes of transportation; facility location analysis and network design; network flow and transportation modeling; and vehicle routing. Prerequisite: INEG 2613. Pre- or corequisite: INEG 2223. (Typically offered: Fall and Spring)

\section*{INEG 3543. Facility Logistics. 3 Hours.}

The design and analysis of efficient logistics systems at the facility level, with an emphasis on distribution facilities. Unit load, break bulk, crossdock and order fulfillment centers and their component systems and software. Automated and manual systems.Prerequisite: INEG 2413. Pre- or corequisite: INEG 2613. (Typically offered: Fall and Spring)

\section*{INEG 3553. Production Planning and Control. 3 Hours.}

Strategy and competition, forecasting, aggregate planning, inventory control subject to known demand, inventory control subject to uncertain demand, supply chain management, push and pull production control systems, and operations scheduling. Prerequisite: INEG 2314 or STAT 3003. Pre- or corequisite: INEG 2613. (Typically offered: Fall and Spring)

\section*{INEG 3624. Simulation. 4 Hours.}

The development and use of discrete-event simulation models for the analysis and design of systems found in manufacturing, distribution, and service contexts. Coverage includes conceptual modeling, model translation to computer form, statistical input models, random number generation and Monte Carlo methods, experimentation and statistical output analysis, and queuing analysis. Includes the use of modern computer simulation languages. Corequisite: Drill component. Prerequisite: (INEG 2223 or DASC 1204), INEG 2314 and INEG 2323. Pre- or Corequisite: INEG 2413. (Typically offered: Fall and Spring)

\section*{INEG 3624H. Honors Simulation. 4 Hours.}

The development and use of discrete-event simulation models for the analysis and design of systems found in manufacturing, distribution, and service contexts. Coverage includes conceptual modeling, model translation to computer form, statistical input models, random number generation and Monte Carlo methods, experimentation and statistical output analysis, and queuing analysis. Includes the use of modern computer simulation languages. Corequisite: Drill component. Prerequisite: (INEG 2223 or DASC 1204), INEG 2314, INEG 2323 and honors standing. Pre- or corequisite: INEG 2413. (Typically offered: Fall and Spring) This course is equivalent to INEG 3624.

\section*{INEG 3714. Work Methods and Ergonomics. 4 Hours.}

Ways of designing jobs, machines, operations and work environments so they are compatible with human capacities and limitations. Work methods topics include methods analysis, time studies, work sampling and learning curves. Cognitive and physical capabilities and limitations of humans are addressed through the study of human information processing, motor control theory, anthropometry, biomechanics, work physiology and manual material handling. Design of controls and displays, hand tools and workstations, along with work related musculoskeletal disorders. Laboratory required. Corequisite: Lab component. Prerequisite: INEG 2314. (Typically offered: Fall and Spring)

INEG 3833. Introduction to Database Concepts for Industrial Engineers. 3 Hours.
An introduction to the basic principles of database modeling and technologies for industrial engineers. Coverage includes analyzing user requirements, representing data using conceptual modeling techniques (e.g. UML, ERD), converting conceptual models to relational implementations via database design methodologies, extracting data via structured query language processing, and understanding the role of database technology in industrial engineering application areas, implementing database applications. Pre- or corequisite: INEG 2223. (Typically offered: Fall and Spring)

\section*{INEG 400VH. Honors Thesis. 1-3 Hour.}

For Honors College students majoring in Industrial Engineering only. Prerequisite: Honors college students only and instructor consent. (Typically offered: Fall, Spring and Summer)

\section*{INEG 410V. Special Topics in Industrial Engineering. 1-4 Hour.}

Consideration of current industrial engineering topics not covered in other courses. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

\section*{INEG 410VH. Honors Special Topics in Industrial Engineering. 1-3 Hour.}

Consideration of current industrial engineering topics not covered in other courses. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.
This course is equivalent to INEG 410V.
INEG 411V. Individual Study in Industrial Engineering. 1-3 Hour.
Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer)

\section*{INEG 411VH. Honors Individual Study in Industrial Engineering. 1-3 Hour.} Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: Instructor consent and honors candidacy. (Typically offered: Fall, Spring and Summer)
This course is equivalent to INEG 411V.

\section*{INEG 4123. Global Engineering and Innovation. 3 Hours.}

This course provides engineering students a global perspective for design and innovation. Students explore various design thinking tools and techniques. Students apply engineering design and innovation techniques to create solutions that meet specified markets with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental and economic factors. Students also have the opportunity to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which considers the impact of the engineering solution in the global, economic, environmental, and social contexts. Prerequisite: Senior standing or instructor consent. (Typically offered: Irregular)

\section*{INEG 4143. Data Mining. 3 Hours.}

The course focuses on the principles, theory, design, and implementation of data mining algorithms for large-scale data. Topics include foundations of data mining; preprocessing; mining frequent patterns, associations and correlations; supervised learning including decision tree induction, naïve Bayesian classification, support vector machine, logistic regression, Bayesian network, and K-nearest neighbor learning; unsupervised learning including K-means clustering, hierarchical clustering, density-based clustering, and grid-based clustering; outlier analysis; graph mining; scalable and distributed data mining. Prerequisite: (INEG 2333 and INEG 2223) or (CSCE 2014 and INEG 3313) or (INEG 2314 and INEG 2223) or INEG 3333. (Typically offered: Fall)

INEG 4163. Introduction to Modern Statistical Techniques for Industrial Applications. 3 Hours.
This application-oriented course is driven by real problems arising from industry and focuses on problem solving using both modern and classic statistical methods. For both senior undergraduate and graduate students, the main goal of this course is to provide a comprehensive introduction to those most popular statistical learning methods and tools (such as R and Apache Spark) which are widely used in industry today. Prerequisite: INEG 2333 or INEG 2314 or INEG 3333. (Typically offered: Spring)

\section*{INEG 4253. Leadership Principles and Practices. 3 Hours.}

The course is designed to expose students to multiple approaches to leadership in a wide variety of settings. Leadership styles, the knowledge areas and competencies expected of today's leaders, the challenges leaders face, the historical and philosophical foundations of leadership, the relationships among leadership theory, leadership practice, and the moral-ethical aspects of leadership are among the topics covered in the course. A number of respected regional, national, and international leaders share "lessons learned" in their leadership journeys. Plus, a number of highly regarded leadership books and case studies on leadership are read and discussed. Students may not receive credit for INEG 4253 and INEG 5253/ OMGT 5253. Prerequisite: Senior standing. (Typically offered: Fall)

INEG 4253H. Honors Leadership Principles and Practices. 3 Hours.
The course is designed to expose students to multiple approaches to leadership in a wide variety of settings. Leadership styles, the knowledge areas and competencies expected of today's leaders, the challenges leaders face, the historical and philosophical foundations of leadership, the relationships among leadership theory, leadership practice, and the moral-ethical aspects of leadership are among the topics covered in the course. A number of respected regional, national, and international leaders share "lessons learned" in their leadership journeys. Plus, a number of highly regarded leadership books and case studies on leadership are read and discussed. Students may not receive credit for INEG 4253 and INEG 5253/ OMGT 5253. Prerequisite: Honors standing and instructor consent. (Typically offered: Fall)
This course is equivalent to INEG 4253.
INEG 4323. Quality Engineering and Management. 3 Hours.
Provides the student with complete coverage of the functional area of "Quality Assurance" ranging from the need for such a function, how it works, techniques utilized, and managerial approaches for insuring its effectiveness. Prerequisite: INEG 2333 or INEG 2314. (Typically offered: Irregular)

INEG 4423. Advanced Engineering Economy. 3 Hours.
Preparation of feasibility studies, including cost estimation, risk and uncertainty, sensitivity analysis and decision making. Effects of taxes, depreciation and financing costs on cash flows. Prerequisite: INEG 2314 and INEG 2413. (Typically offered: Irregular)

INEG 4423H. Honors Advanced Engineering Economy. 3 Hours.
Preparation of feasibility studies, including cost estimation, risk and uncertainty, sensitivity analysis and decision making. Effects of taxes, depreciation and financing costs on cash flows. Prerequisite: INEG 2314 and INEG 2413. (Typically offered: Irregular)
This course is equivalent to INEG 4423.

\section*{INEG 4433. Systems Engineering and Management. 3 Hours.}

Overview of the fundamental concepts underlying the management of engineering. Reviews the engineering decision process within the life cycle. Examines implementation of basic management functions in technical organizations and development of strategy tools within a complex organization. Prerequisite:
INEG 2413. (Typically offered: Fall)

INEG 4433H. Honors Systems Engineering and Management. 3 Hours.
Overview of the fundamental concepts underlying the management of engineering. Reviews the engineering decision process within the life cycle. Examines implementation of basic management functions in technical organizations and development of strategy tools within a complex organization. Prerequisite: INEG 2413. (Typically offered: Fall)
This course is equivalent to INEG 4433.
INEG 4453. Productivity Improvement. 3 Hours.
Analysis of common productivity problems. Development of skills required to diagnose problems; measure productivity; develop improvement strategies; and provide for the implementation and maintenance of productivity measurement and improvement systems. Prerequisite: Senior standing. (Typically offered: Irregular)

INEG 4683. Decision Support in Industrial Engineering. 3 Hours.
Reinforcing important computer programming methods using industrial engineeringbased applications. Students will utilize Microsoft Excel and Visual Basic for Applications to develop custom solutions to challenging industrial engineering problems. Emphasis on computational proficiency and computing productivity in a spreadsheet-based setting. Prerequisite: INEG 2214 and INEG 2314. (Typically offered: Fall)

INEG 4913. Industrial Engineering Capstone Experience I. 3 Hours. First semester of a two-semester, team-based project in support of a real-world industry partner organization. Learn about the industry partner organization and the relevant segment of that organization. Assess and evaluate the operations and performance of the system that needs to be improved, or detail the need for and the requirements of a new system. Communicate findings using reports and presentations. Prerequisite: INEG 2001, INEG 2103, INEG 3333, INEG 3443, INEG 3543 and INEG 3624. Pre- or corequisite: INEG 3533, INEG 3553, INEG 3714, INEG 3833 and INEG 4433. (Typically offered: Fall)

\section*{INEG 4924. Industrial Engineering Capstone Experience II. 4 Hours.}

Second semester of a two-semester, team-based project in support of a real-world industry partner organization. Develop and assess recommendations for improving system performance, or develop the detailed design of a new system. Evaluate the potential impact of the project. Develop deliverables for the industry partner organization. Communicate findings using reports and presentations. Students must have successfully completed INEG 4913 in the immediate prior semester. Corequisite: Lab component. Prerequisite: INEG 3533, INEG 3553, INEG 3714, INEG 3833, INEG 4433 and INEG 4913. (Typically offered: Spring)

INEG 513V. Master's Research Project and Report. 1-6 Hour.
Required course for students electing the report option. (Typically offered: Fall, Spring and Summer)

\section*{INEG 514V. Special Topics in Industrial Engineering. 1-3 Hour.}

Consideration of current industrial engineering topics not covered in other courses. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
INEG 515V. Individual Study in Industrial Engineering. 1-3 Hour.
Opportunity for individual study of advanced subjects related to a graduate industrial engineering program to suit individual requirements. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

\section*{INEG 5163. Introduction to Modern Statistical Techniques for Industrial} Applications. 3 Hours.
This application-oriented course is driven by real problems arising from industry and focuses on problem solving using both modern and classic statistical methods. For both senior undergraduate and graduate students, the main goal of this course is to provide a comprehensive introduction to those most popular statistical learning methods and tools (such as R and Apache Spark) which are widely used in industry today. For graduate students, this course will also cover the fundamental theory behind some of the methodologies. Students will not receive graduate degree credit for both INEG 410V with the same title, and INEG 5163. (Typically offered: Spring)

INEG 5253. Leadership Principles and Practices. 3 Hours.
The course is designed to expose students to multiple approaches to leadership in a wide variety of settings. Leadership styles, the knowledge areas and competencies expected of today's leaders, the challenges leaders face, the historical and philosophical foundations of leadership, the relationships among leadership theory, leadership practice, and the moral-ethical aspects of leadership are among the topics covered in the course. A number of respected regional, national, and international leaders share "lessons learned" in their leadership journeys. Plus, a number of highly regarded leadership books and case studies on leadership are read and discussed. Students may not receive credit for INEG 4253 and INEG 5253/ OMGT 5253. (Typically offered: Fall)
This course is cross-listed with OMGT 5253.

\section*{INEG 5263. Engineering Statistics. 3 Hours.}

A graduate level engineering statistics course covering functions of random variables, properties and distributions of random samples, theory of statistical inference, and rationales of testing hypotheses and constructing confidence intervals. Prior knowledge of material equivalent to MATH 2574 and INEG 2333 is expected. (Typically offered: Fall)
INEG 5313. Engineering Applications of Probability Theory. 3 Hours. Introduction to probability, discrete random variables, continuous random variables, multiple random variables, sequences of Bernoulli trials. Applications of these topics from inventory, reliability, quality control. (Typically offered: Fall)
INEG 5323. Engineering Applications of Stochastic Processes. 3 Hours. Renewal processes, Poisson processes, discrete-time Markov chains, continuoustime Markov chains. Applications of these topics from inventory, reliability, quality control, queueing. (Typically offered: Spring)

\section*{INEG 5333. Design of Industrial Experiments. 3 Hours.}

Statistical analysis as applied to problems and experiments in engineering and industrial research; experiment design and analysis; probability; and response surface analysis. (Typically offered: Irregular)

INEG 5393. Applied Regression Analysis for Engineers. 3 Hours.
Present concepts and applications to introduce statistical tools for discovering relationships among variables. Focus on fitting and checking linear and nonlinear regression models. Practical tools for engineers. (Typically offered: Irregular)

\section*{INEG 5423. Advanced Engineering Economy. 3 Hours.}

Preparation of feasibility studies, including cost estimation, risk and uncertainty, sensitivity analysis and decision making. Effects of taxes, depreciation and financing costs on cash flows. Graduate degree credit will not be given for both INEG 4423 and INEG 5423. (Typically offered: Irregular)

\section*{INEG 5433. Cost Estimation Models. 3 Hours.}

Overview of cost estimation techniques and methodologies applied to manufacturing and service organizations. Accomplished through detailed analysis of the cost estimation development process and various cost estimation models. Topics include data collection and management, learning curves, activity based costing, detailed and parametric estimation models, and handling risk and uncertainty. (Typically offered: Irregular)
This course is cross-listed with OMGT 5433.

\section*{INEG 5443. Decision Models. 3 Hours.}

Focus on quantitative decision models for technical and managerial problems for private and public organizations. Topics include shareholder value, stakeholder value, Value-Focused Thinking, axioms of decision analysis, decision making challenges, decision traps, cognitive biases, decision processes, decision framing, influence diagrams, value hierarchy structuring, designing creative alternatives, singe objective models, multiobjective additive value model, swing weights, sensitivity analysis, portfolio decision models with binary linear programming, probability elicitation, Bayes Law, decision trees, Monte Carlo simulation, expected value, dominance (deterministic and stochastic), tornado diagrams, value of information, risk preference, utility models, expected utility, and communicating analysis insights. (Typically offered: Irregular)
This course is cross-listed with EMGT 5443, OMGT 5443.
INEG 5453. Systems Engineering and Management. 3 Hours.
Overview of the fundamental concepts underlying the management of engineering. Reviews the engineering decision process within the life cycle. Examines implementation of basic management functions in technical organizations and development of strategy tools within a complex organization. Graduate degree credit will not be given for both INEG 4433 and INEG 5453. (Typically offered: Fall)

\section*{INEG 5463. Project Management. 3 Hours.}

Analysis of the strategic level of project management including planning, organizing, and staffing for successful project execution. Professional creativity, motivation, leadership, and ethics are also explored. At the tactical level, project selection, control, and systems management are analyzed. Systems development and decision support tools for project management are studied. (Typically offered: Irregular)

INEG 5533. Network Optimization in Transportation Logistics. 3 Hours.
Focus on quantitative modeling and analysis of network optimization problems and their application in logistics system design and operation. Topics include network design and routing and location analysis, with emphasis on the application of both exact and heuristic solution techniques for large-scale instances of such problems. Prerequisite: INEG 5613. (Typically offered: Spring)

\section*{INEG 5563. Industrial Robotics. 3 Hours.}

An interdisciplinary treatment of industrial robotics; manipulator anatomy, control, and programming; end-of arm tooling; sensors \& sensing; system integration and safety; current research topics. Graduate-level lab assignments and examinations. Significant literature review and writing assignments. Not open to students with credit for INEG 4563. Prerequisite: Graduate standing or instructor consent. (Typically offered: Fall)

\section*{INEG 5613. Introduction to Optimization Theory. 3 Hours.}

A graduate level introduction to the foundational rationales of numerical optimization methods including linear programming, integer programming, network flows, and discrete dynamic programming. Model formulation and tractability, search strategies, characterization of optimal solutions, duality and sensitivity, outcome justification. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{INEG 5623. Analysis of Inventory Systems. 3 Hours.}

Elements of production and inventory control, economic lot size models, price breaks models using Lagrangian method, deterministic dynamic inventory model, probabilistic one-period and multi-period models, zero and positive lead time models, and continuous review models. Prerequisite: INEG 5313. (Typically offered: Irregular)

\section*{INEG 5683. Nonlinear Programming. 3 Hours.}

An introduction to the theory and methodology of nonlinear programming. Focus on engineering and management science applications of nonlinear optimization. Both single and multi-variable as well as unconstrained and constrained problems are addressed. (Typically offered: Irregular)

INEG 5693. Heuristic Optimization. 3 Hours.
Theory and applications of methodological approaches explicitly addressed to heuristic or approximate optimization of integer and combinatorial models. Prerequisite: INEG 5613. (Typically offered: Irregular)

\section*{INEG 5803. Simulation. 3 Hours.}

The development and use of discrete-event simulation models for the analysis and design of systems found in manufacturing, distribution, and service contexts. Coverage includes conceptual modeling, model translation to computer form, statistical input models, random number generation and Monte Carlo methods, experimentation and statistical output analysis, and queuing analysis. Includes the use of modern computer simulation languages. Cannot receive credit for both INEG 3624 and INEG 5803. Corequisite: Drill component. (Typically offered: Irregular)

INEG 5813. Introduction to Simulation. 3 Hours.
Development and use of discrete-event simulation models for the analysis and design of systems found in manufacturing, distribution, and service contexts. Coverage includes conceptual modeling, model translation to computer form, statistical input models, random number generation and Monte Carlo methods, experimentation and statistical output analysis, and queuing analysis. For offcampus, distance education students only. (Typically offered: Irregular)

INEG 5823. Systems Simulation I. 3 Hours.
Random number generation, random variate generation, timekeeping in simulations, discrete event modeling, construction of digital simulation models, statistical analysis of simulation results, and analysis of simulation experiments utilizing a computer programming language. (Typically offered: Irregular)

INEG 5833. Introduction to Database Concepts for Industrial Engineers. 3 Hours.
An introduction to the basic principles of database modeling and technologies for industrial engineers. Coverage includes analyzing user requirements, representing data using conceptual modeling techniques (e.g. UML, ERD), converting conceptual models to relational implementations via database design methodologies, extracting data via structured query language processing, and understanding the role of database technology in industrial engineering application areas such as inventory systems, manufacturing control, etc. The application of a desktop database application such as Access will be emphasized. (Typically offered: Irregular)

\section*{INEG 600V. Master's Thesis. 1-9 Hour.}

Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{INEG 6113. Linear Optimization. 3 Hours.}

A precise treatment of linear programming. Theory of convex sets, linear inequalities; development of the simplex method; duality theory; post optimality application and interpretation. Variants of the simplex methods and interior-point algorithms are discussed. Prerequisite: INEG 5613. (Typically offered: Fall)

INEG 614V. Special Topics for Doctoral Students in Industrial Engineering. 1-3 Hour.
Consideration of current industrial engineering topics at the doctoral level that are not covered in other courses. Prerequisite: PhD student in Industrial Engineering or consent of the instructor. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{INEG 6313. Network Optimization. 3 Hours.}

A theorem/proof based advanced study providing rigorous exposition of foundational network optimization concepts including relevant optimization theory, algorithm development techniques, complexity analysis, data structures, and important applications. Prerequisite: INEG 6113. (Typically offered: Fall)

INEG 6323. Advanced Stochastic Processes. 3 Hours.
This course prepares Ph.D. students with advanced topics in probability and stochastic processes, with a focus on deriving and analyzing probability and stochastic models, and theorem proving in related topics. Contents include review of probability theorems, limit and convergence theorems, generating functions, Poisson processes, renewal theory, discrete and continuous Markov chains, and other advance topics. Prerequisite: INEG 5313 and INEG 5323. (Typically offered: Spring)

\section*{INEG 6443. Advanced Decision Analysis. 3 Hours.}

The purpose of this course is to prepare the student to perform PhD and MS level research and analysis using advanced decision analysis concepts and techniques. The course topics include the history of decision analysis, foundations of decision analysis, structuring decision problems, assessing probabilities, probability management, Bayesian networks, utility, risk preference, risk analysis for engineering applications, intelligent adversary risk analysis, behavioral and organizational context for decision analysis, and major decision analysis applications. Prerequisite: INEG 5443. (Typically offered: Spring)

\section*{INEG 6823. Systems Simulation II. 3 Hours.}

Advanced topics in computer simulation including experimental design, simulation optimization, variance reduction, and statistical output analysis techniques applied to discrete event simulation. Prerequisite: (INEG 5263 or (INEG 5313 and INEG 5323)), and (INEG 5823 or INEG 3624 or INEG 5803). (Typically offered: Irregular)
INEG 6843. Scheduling Theory and Algorithms. 3 Hours.
The course will cover the theory and solution methods for scheduling several tasks over time. Topics include terminology, measures of performance, single machine sequencing, flow shop scheduling, the job shop problem, and priority dispatching. Side constraints within scheduling, such as precedence, release dates, and due dates are addressed. Integer programming, dynamic programming, and heuristic approaches to various problems are also presented. Prerequisite: INEG 5613 or equivalent, computer programming proficiency, and exposure to proofs. (Typically offered: Irregular)
INEG 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Information Systems (ISYS)}

\section*{Courses}

ISYS 1123. Business Application Knowledge - Computer Competency. 3 Hours.
An introduction to computer literacy using information business application software; email/Internet; word processing; spreadsheets; presentation; database; collaborative/groupware; and integration of computer applications. Introduces the student to computer Concepts and Microsoft Office (Word, Excel, Windows, and PowerPoint) to manage finances, work with formulas, charts and graphics, and the development of professional worksheets and presentations. Students learn business computing through appropriate self-paced, computer-based instruction. (Typically offered: Fall, Spring and Summer)
ISYS 2001. Principles of Business Application Development. 1 Hour.
An introduction to the principles of business application development and the development process for business applications using a current high level languages such as Python, Swift, etc. Discussions include topics such as development teams, project management, design thinking, coding, and entrepreneurship; essential skill sets for future leaders. Students learn about coding using languages such as Python and Swift while developing their own applications. (Typically offered: Fall and Spring)

\section*{ISYS 2103. Business Information Systems. 3 Hours.}

This course presents the fundamentals of business information systems (IS) topics essential to today's business graduate. Applied areas of business will be used to provide the context for the IS topics, business applications, and management challenges. The broad objective of this course is to present students with a business and information systems framework that will allow them to envision how business decisions are enabled and empowered by information systems and technology. Prerequisite: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better. (Typically offered: Fall, Spring and Summer)

\section*{ISYS 2103H. Honors Business Information Systems. 3 Hours.}

This course presents the fundamentals of business information systems (IS) topics essential to today's business graduate. Applied areas of business will be used to provide the context for the IS topics, business applications, and management challenges. The broad objective of this course is to present students with a business and information systems framework that will allow them to envision how business decisions are enabled and empowered by information systems and technology. Prerequisite: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better and honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to ISYS 2103.

\section*{ISYS 2263. Principles of Information Systems. 3 Hours.}

This course presents the fundamental concepts used in developing information systems. It provides a framework for students to use throughout their software development coursework. Also includes management of information systems concepts. This course requires extensive use of computer systems. Prerequisite: ACCT 2013, MATH 2053 and ISYS 2103, each with a grade of C or better. (Typically offered: Fall and Spring)

\section*{ISYS 3273. Cryptocurrency. 3 Hours.}

This course will focus on topics such as a brief history of money, Bitcoin and the origin of cryptocurrency, blockchain system fundamentals (cryptography and consensus algorithms), real-world application with software clients and wallets, as well as assessing the current regulatory environment, financial applications and exchanges. Upon completion, students will understand what constitutes as digital money and how this phenomenon is currently transpiring within an economic, legal, and financial context; will be prepared to learn more about specific financial industry applications; make judgements on viability of certain crypto projects; and speak to challenges facing the future of cryptocurrency. Prerequisite: ISYS 2103 and ACCT 2013, each with a grade of C or better. (Typically offered: Fall and Spring)

\section*{ISYS 3293. Systems Analysis and Design. 3 Hours.}

Practice and application of one structured analysis methodology; development of structured analysis specification; exposure to other methodologies; quality assurance and walkthroughs; survey of real systems and their components.
Prerequisite: ISYS 2263 or CSCE 2014 with a grade of \(C\) or better. (Typically offered: Fall and Spring)

ISYS 3393. Business Application Development Fundamentals. 3 Hours. Principles of design and development of windows and web applications using cutting edge visual development tools. The programming language will be a modern language used widely in industry, and the focus will be on its use in client-server, web, and/or mobile applications. Pre- or Corequisite: ISYS 3293. Prerequisite: ISYS 2263 or CSCE 2014 with a grade of "C" or better. (Typically offered: Fall and Spring)

\section*{ISYS 4003H. Honors Information Systems Colloquium. 3 Hours.}

Explores events, concepts and/or new developments in the field of Computer Information Systems and Quantitative Analysis. Prerequisite: Senior standing and honors standing. (Typically offered: Fall)

ISYS 4013. Principles of Data and Cybersecurity. 3 Hours.
This course provides students with insight into the cybersecurity and data issues surrounding businesses; fundamental concepts of the study of law - enabling students to understand the basics of reading and briefing a case as well as the process of legal analysis and case procedure and discovery; securing organizational data; detecting and responding to cyber-based security breaches; emerging technologies, and ensuring a secured computing environment for safeguarding company information will be explored. Prerequisite: ACCT 2013. (Typically offered: Fall and Spring)

ISYS 4023. Network and Data Security in a Changing World. 3 Hours.
This course explores network and data security in the context of today's digital enterprise. In addition to traditional network protocol and security issues, this course will explore security issues unique to cloud environments, data protection, IoT ecosystems, ERP systems, and Blockchain deployments. Prerequisite: ISYS 4013 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{ISYS 4033. Advanced Information Security Management. 3 Hours.}

This course provides students with an in-depth, advanced understanding of cybersecurity and data management. Topics include risk assessment, continuity planning, data protection, threat detection, threat/risk mitigation, and recovery issues and techniques. Current topics in data and cybersecurity will also be included. Prerequisite: ISYS 4023 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{ISYS 4043. Cybersecurity, Crime and Data Privacy Law Fundamentals. 3} Hours.

This course examines the law governing computer crime, data privacy, and cybersecurity. Substantive crimes such as hacking, identity theft, economic espionage, and online threats are discussed. The Fourth Amendment, Privacy, the Wiretap Act, and other limits on law enforcement that might affect private industry developing surveillance tools used by governments are examined. Prerequisite: ISYS 4013. (Typically offered: Fall and Spring)

ISYS 4053. Advanced Cybersecurity, Crime and Privacy Law. 3 Hours.
The course will explore best practices for data privacy and security protection measures, mitigation techniques for privacy and security threats, and privacy and security law. The importance of informational privacy will be highlight and a highlevel overview of U.S. laws and regulations including FTC roles, and government surveillance will be provided. Prerequisite: ISYS 4023 and ISYS 4043. (Typically offered: Fall and Spring)

\section*{ISYS 4173. Blockchain Fundamentals. 3 Hours.}

This course provides the fundamental concepts underpinning blockchain technologies. This course focuses on blockchain applications for business. Students will learn about the overall blockchain landscape, including the investments, the size of markets, major players and the global reach, as well as the potential business value of blockchain applications and the challenges that must be overcome to achieve that value. Students will learn enough about the underlying technologies to be well-prepared to develop blockchain applications in future courses. Prerequisite: ISYS 2103 and ACCT 2013, each with a grade of C or better, or CSCE 2004 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{ISYS 4193. Business Analytics and Visualization. 3 Hours.}

Introductory study of business analytics, visualization, and systems to provide analytics-based information derived from data within and/or external to the organization. Business analytics used to support management in the decision making. Application of tools in business analytics, problem solving, visualization, and decision making. Prerequisite: (Non-business majors: (INEG 3313 or STAT 3013 with a grade of C or better)) or (Business majors: (BUSI 1033 with a grade of C or better)). (Typically offered: Fall)

\section*{ISYS 4213. ERP Fundamentals. 3 Hours}

An introduction to enterprise resource planning systems. Students should gain an understanding of the scope of these integrated systems that reach across organizational boundaries and can change how a company does business. Implementation issues are covered, including the importance of change management. Prerequisite: ISYS 2103 and ACCT 2013, each with a grade of C or better, or CSCE 2004, with a grade of C or better. (Typically offered: Fall and Spring)

ISYS 4223. ERP Configuration and Implementation. 3 Hours.
The process of configuring and implementing an enterprise resource planning system. Business process analysis and integration. Students will develop a company and set up several modules in SAP R/3 for use. Develop understanding of how the business processes work and integrate. Prerequisite: ISYS 4213 with a grade of "C" or better. (Typically offered: Fall)

ISYS 4233. Seminar in ERP Development. 3 Hours.
ERP administration and system development practices. Advanced system support issues related to Enterprise Resource Planning systems that are used in global organizations. Basic ABAP programming. In addition, students will learn how to provide basic systems administration support of the operating system, database, and application systems software levels or ERP systems. Pre- or Corequisite: ISYS 4223 with a grade of " C " or better. (Typically offered: Spring)

ISYS 4243. Current Topics in Computer Information. 3 Hours.
Intensive investigation of selected developments in computer information systems hardware, software, and organization having current impact on computer information systems design and application. Offering an extension of lower-level CIS courses through individual student research and faculty team-teaching of advanced topics. Topical selection made with each course offering. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ISYS 4283. Business Database Systems. 3 Hours.
Introduces student to centralized information system design and implementation for business applications. In-depth study of logical systems modeling; physical file management; and software requirements. Pre- or Corequisite: ISYS 3393.
Prerequisite: ISYS 3293 with a grade of C or better. (Typically offered: Fall)

\section*{ISYS 4293. Business Intelligence. 3 Hours.}

Business intelligence focuses on creating, developing and storing information and knowledge from internal and external sources to better support business decisions. We will consider techniques from machine learning, data mining, and information retrieval to extract useful knowledge from data, which could be used for business intelligence, personalization or user profiling. Prerequisite: ISYS 4193 with a grade of "C" or better. (Typically offered: Spring)

\section*{ISYS 4363. Business Project Development. 3 Hours.}

Review of fundamentals of application processing systems design and development; implementation of such a system by class. Prerequisite: ISYS 3393 and ISYS 4283 each with a grade of \(C\) or better. (Typically offered: Spring)

\section*{ISYS 4373. Application Development with Java. 3 Hours.}

This course covers object-oriented programming concepts and illustrates them via an appropriate object-oriented programming language. Students will be exposed to the design of software objects, creation of software objects, and the use of objects in constructing an information system. Prerequisite: ISYS 3293 with a grade of C or better. (Typically offered: Fall)

\section*{ISYS 4393. Seminar in Applied Business Analytics. 3 Hours.}

Application of business analytics, business intelligence, data mining, and data visualization to business problem solving. Business Analytics techniques using current and relevant software are applied to current business problems for presentation to management. Prerequisite: ISYS 4293. (Typically offered: Fall and Spring)

ISYS 4453. Introduction to Blockchain Applications. 3 Hours.
The focus of this course is to expose students to working with mainframe computer systems, large-scale data, and blockchain software \& technologies. This course provides the opportunity for students to gain valuable insight into mainframe coding concepts, SQL, and data in a mainframe operating environment. Prerequisite: ISYS 4173. (Typically offered: Fall)

ISYS 4463. Blockchain Enterprise Systems Development. 3 Hours.
Accurately capturing and storing business transactions is an important processing function in many businesses. This course provides students with the necessary understanding and skills to develop blockchain and other large-scale data applications in a mainframe environment with high volume. Prerequisite: ISYS 4453 with a grade of "C" or better. (Typically offered: Spring)

ISYS 450V. Independent Study. 1-3 Hour.
Permits students on individual basis to explore selected topics in data processing and/or Quantitative Analysis. (Typically offered: Fall and Spring)

ISYS 5013. Data and Cybersecurity. 3 Hours.
This course provides current business cybersecurity and data issues for graduate students to include securing data, detecting and responding to cyber security breaches, cyber-technologies, current security and cryptographic techniques, and ensuring a secured computing environment to safeguard company information. In addition, students will explore cybersecurity strategies and compliance with security standards, as well as data confidentiality, integrity, ethical use, and availability. Prerequisite: Graduate standing and departmental consent. (Typically offered: Fall and Spring)

\section*{ISYS 5023. Data and System Security. 3 Hours.}

This course involves a comprehensive study of data security and network security in today's digital enterprise. Traditional network protocol and security issues are explored as well as security issues such as cloud environments, data protection, loT ecosystems, ERP systems, and Blockchain deployments. Prerequisite: ISYS 5013. (Typically offered: Fall and Spring)

ISYS 5033. Advanced Data and Cybersecurity Management. 3 Hours.
This course provides graduate students with an in-depth, advanced understanding of information security and data management. Topics include risk assessment, information systems security, continuity planning, data protection, threat detection, threat/risk mitigation, recovery issues/techniques, and current topics. Prerequisite: ISYS 5023. (Typically offered: Fall and Spring)

ISYS 5043. Cybersecurity, Crime, and Data Privacy Law I. 3 Hours.
This graduate level course in examines applicable cybersecurity, crime, and data privacy law to include the Fourth Amendment, Privacy, the Wiretap Act, and other. Limits on law enforcement that might affect private industry developing surveillance tools used by governments are reviewed. Crimes such as hacking, identity theft, economic espionage, online threats, are also discussed. Prerequisite: ISYS 5013. (Typically offered: Fall and Spring)

\section*{ISYS 5053. Cybersecurity, Crime and Privacy Law II. 3 Hours.}

The course explores best practices for data, privacy, and security protection measures with respect to privacy and security law, as well as mitigation techniques for privacy and security threats. The importance of informational privacy will be highlighted along with a high-level overview of U.S. laws and regulations including FTC roles and government surveillance. Prerequisite: ISYS 5023 and ISYS 5043. (Typically offered: Fall and Spring)

ISYS 5103. Data Analytics Fundamentals. 3 Hours.
Fundamental knowledge and skills in several major areas of business data analytics. Emphasis on the management and use of data in modern organizations, intermediate \& advanced spreadsheet topics; relational databases \& SQL; and programming (such as Python). Prerequisite: MIS Director approval. (Typically offered: Fall)

\section*{ISYS 511V. IT Toolkit \& Skills Seminar. 1-3 Hour.}

Seminar in Information Systems solutions and concepts (such as applications development, VB.NET, analysis of problems and design of solutions via application systems, etc.) designed for students entering the MIS program--may not be used for MIS degree credit. Prerequisite: MIS Director approval. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{ISYS 5133. Blockchain and E Business Development. 3 Hours.}

This course explores various blockchain and e-business development technologies and then utilizes these technologies for developing a realistic application. Students will also learn strategies and use a varied web stack to build web pages that interact with blockchain platforms. Prerequisite: ISYS 5173. (Typically offered: Fall)

ISYS 516V. Independent Study. 1-3 Hour.
Permits students on individual basis to explore selected topics in data processing and/or Quantitative Analysis. Graduate degree credit will not be given for both ISYS 450V and ISYS 516V. (Typically offered: Fall and Spring)

\section*{ISYS 5173. Blockchain Fundamentals. 3 Hours.}

This course provides the fundamental concepts underpinning blockchain technologies. The focus is on blockchain applications for business. Students will learn about the overall blockchain landscape, including investments, the size of markets, major players and the global reach, as well as the potential business value of blockchain applications and the challenges that must be overcome to achieve that value. Students will learn enough about the underlying technologies to speak intelligently to technology experts and will be well-prepared to develop blockchain applications in future courses. Prerequisite: Graduate standing and departmental consent. (Typically offered: Fall, Spring and Summer)

\section*{ISYS 5213. ERP Fundamentals. 3 Hours.}

An introduction to enterprise resource planning systems. Students should gain an understanding of the scope of these integrated systems that reach across organizational boundaries and can change how a company does business. Implementation issues are covered, including the importance of change management. Prerequisite: Graduate standing. (Typically offered: Fall and Summer)

\section*{ISYS 5223. ERP Configuration and Implementation. 3 Hours.}

The process of configuring and implementing an enterprise resource planning system. Business process analysis and integration. Students will develop a company and set up several modules in SAP for use. Develop understanding of how the business processes work and integrate. Prerequisite: ISYS 5213 or equivalent. (Typically offered: Fall and Spring)

\section*{ISYS 5233. Seminar in ERP Development. 3 Hours.}

ERP administration and system development practices. Advanced system support issues related to Enterprise Resource Planning systems that are used in global organizations. Basic ABAP programming. In addition, students will learn how to provide basic systems administration support of the operating system, database, and application systems software levels of ERP systems. Pre- or Corequisite ISYS 5223. Prerequisite: ISYS 5213. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{ISYS 5243. Current Topics in Computer Information. 3 Hours.}

Intensive investigation of selected developments in computer information systems hardware, software, and organization having current impact on computer information systems design and application. Offering an extension of lower-level CIS courses through individual student research and faculty team-teaching of advanced topics. Topical selection made with each course offering. Graduate degree credit will not be given for both ISYS 4243 and ISYS 5243. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ISYS 535V. Internship Experience. 1-6 Hour.
This course allows a student to experience an internship within a business and benefit from the work experience. The internship focuses on applications and business problems and is supervised by a faculty member as well as a member of the company/firm. Prerequisite: MIS Director approval is required. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

ISYS 5363. Business Analytics. 3 Hours.
This course in managerial business analytics provides future managers with the key concepts of decision modeling and information technology management concepts. Students will learn to utilize real time operational business data, as well as quickly process and effectively leverage information. In addition, students will exercise strategic IT deployment skills for supply chain and marketing processes as well as develop strong decision modeling abilities. (Typically offered: Spring)

ISYS 5373. Application Development with Java. 3 Hours.
This course covers object-oriented programming concepts and illustrates them via an appropriate object-oriented programming language. Students will be exposed to the design of software objects, creation of software objects, and the use of objects in constructing an information system. Graduate degree credit will not be given for both ISYS 4373 and ISYS 5373. Prerequisite: ISYS 3293 with a grade of C or better. (Typically offered: Fall)

ISYS 5423. Seminar in Systems Development. 3 Hours.
Advanced study of structured systems development. Emphasis on strategies and techniques of structured analysis and structured design for producing logical systems specifications and for deriving physical systems designs. Coverage of methodologies for dealing with complexity in the development of information systems. Prerequisite: ISYS 511V. (Typically offered: Fall)

\section*{ISYS 5433. Enterprise Systems. 3 Hours.}

Enterprise Systems comprises the entire class of information technology and systems that support the mission of the company including decision support and business processes. This managerial enterprise systems course focuses on strategic issues of information technology. Students study the various elements and integration of an organization's business processes; as a result, students gain an understanding and working knowledge of systems used to support these business processes and their use in decision making. In addition, students will study concepts and develop skills needed to utilize decision-centric business intelligence and knowledge management applications. (Typically offered: Spring)

\section*{ISYS 5453. Blockchain and Enterprise Data. 3 Hours.}

The focus of this course is to expose students to working with distributed and service oriented architectures for different applications as well as the IT infrastructure needed. The course provides the opportunity for students to gain valuable insight into blockchain as a distributed system and cloud architecture platforms with the goal of developing enterprise applications. Prerequisite: ISYS 5133. (Typically offered: Spring)

\section*{ISYS 5503. Decision Support and Analytics. 3 Hours.}

Analysis of the highest level of information support for the manager-user. A study of systems providing analytics-based information derived from databases within and/ or external to the organization and used to support management in the decision making. Application of tools in business analytics, problem solving, and decision making. Prerequisite: MIS Director approval. (Typically offered: Fall)

\section*{ISYS 5603. Analytics and Visualization. 3 Hours.}

This course focuses on how to discern and tell your story visually using data based on traditional graphical data representation as well as the latest data and information technologies. Coverage includes both visualization theory and hands-on exercises using appropriate computing tools. The course will also include visualization of predictive, clustering, and association models. The opportunities and challenges of Big Data visualization will be explored. Corequisite: Lab component. Prerequisite: (ISYS 5503) or (ISYS 5133 and departmental consent). (Typically offered: Fall)

ISYS 5713. Seminar in IS Topics. 3 Hours.
Intensive seminar in selected information systems topics. Topical selection made with each course offering. Prerequisite: ISYS 511V or MIS Director approval.
(Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{ISYS 5723. Advanced Multivariate Analysis. 3 Hours.}

Factor analysis and other advanced techniques. (Typically offered: Irregular)
ISYS 5833. Data Management Systems. 3 Hours.
Investigation and application of advanced database concepts include database administration, database technology, and selection and acquisition of database management systems. Data modeling and system development in a database environment. Prerequisite: ISYS 5103. (Typically offered: Spring)

ISYS 5843. Seminar in Business Intelligence and Knowledge Management. 3 Hours.
Business intelligence focuses on assessing and creating information and knowledge from internal and external sources to support business decision making process. In this seminar, data mining and information retrieval techniques will be used to extract useful knowledge from data, which could be used for business intelligence, and knowledge management. Pre- or Corequisite: ISYS 5833 or equivalent. Prerequisite: ISYS 5503 or equivalent. (Typically offered: Spring)

ISYS 593V. Global Technology and Analytics Seminar. 1-3 Hour.
This course is designed to provide an updated, comprehensive, and rigorous treatment of emerging global topics. Includes, but is not limited to, global study experiences, business insights, and foundational perspectives; examines significant issues from global perspectives. Prerequisite: Department Consent, Graduate standing, and MIS Director approval. (Typically offered: Summer) May be repeated for up to 3 hours of degree credit.
ISYS 5943. Management of Information Technology Seminar. 3 Hours. Presented in a way that allows you to play an active role in the design, use, and management of information technology. Using IT to transform the organization, as competitive strategy, and creating new relationship with other firms is included. Preor Corequisite: ISYS 5833. Prerequisite: ISYS 5423. (Typically offered: Spring)

\section*{ISYS 599V. Practicum Seminar. 1-6 Hour.}

This course is designed to introduce and engage the student in the practice, application, and problem solving in the business environment. Hands-on application of a business problem. Students will gain experience working on, making decisions about, and developing solutions for business applications. Topics include but not limited to analytics, data, and information technology. Prerequisite: Graduate standing and MIS Director approval. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

ISYS 601V. Graduate Colloquium. 1-6 Hour.
Presentation and critique of research papers and proposals. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

ISYS 6133. Survey of IS Research. 3 Hours.
This is an introductory seminar in information systems research for doctoral students. Its objective is to introduce participants to major streams of IS research and discuss many of the important roles and responsibilities of an IS researcher. Also, this course will play the important role of introducing participants to the research of the current IS faculty. (Typically offered: Fall)

ISYS 636V. Special Problems. 1-6 Hour.
Independent reading and research under supervision of senior staff member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

ISYS 6373. Social Networks in Information Systems Research. 3 Hours.
This is an introductory course in social networks for doctoral students. The course will be structured to be suitable to participants from a broad array of social and behavioral sciences. The study of social networks has emerged as an important stream with many fields, ranging from mathematics to organizational behavior to information systems to sociology. Although much of the early development took place in the analysis and methods to study social networks, more recently, a great deal of theory has been developed related to help better understand nomological networks related to social networks (and associated constructs). Prerequisite: Graduate standing and permission of the ISYS PhD Coordinator. (Typically offered: Irregular)
ISYS 6533. Information Systems for Managing Organizations and Platforms. 3 Hours.
The goal of this seminar is to provide an understanding of the issues related to the organizational impacts of information technologies, the processes to create value by using information technologies, and the strategic and competitive dynamics related to information technologies in organizations. Students will read and discuss various theories, conceptual issues, and empirical papers pertaining to research on these topics of inquiry. Prerequisite: Graduate standing and permission of the ISYS PhD Coordinator. (Typically offered: Irregular)
ISYS 6733. Emerging Topics. 3 Hours.
Various emerging topics, such as RFID applications and RFID supply chain, ethical decision models, behavioral modeling, piracy and privacy issues, and virtual worlds. (Typically offered: Irregular) May be repeated for up to 15 hours of degree credit.

ISYS 6743. Qualitative and Quantitative Methods in Research. 3 Hours.
This seminar focuses on the study of processes, such as those associated with adoption and diffusion of technologies, the organizational impacts of technologies, and decision-making and planning by individuals and groups. Prerequisite: Graduate standing and permission of the ISYS PhD Coordinator. (Typically offered: Irregular)
ISYS 6753. Management of Knowledge and Information Systems. 3 Hours.
This seminar focuses on research related to the management of two key resources: (a) information systems (IS); and (b) knowledge. The course aims to help prepare students to become good researchers on management of IS and knowledge. Prerequisite: Graduate standing and permission of the ISYS PhD Coordinator. (Typically offered: Irregular)

\section*{ISYS 6833. Theory Development. 3 Hours.}

To acquire theory development and writing skills, to understand challenges in developing and writing theory sections of papers, and to discuss approaches to writing good empirical journal articles. This course is suited for all social sciences students and is particularly appropriate for students conducting behavioral research in the business disciplines. (Typically offered: Irregular)

ISYS 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Interdisciplinary Studies (IDST) Courses}

IDST 2003. Introduction to Interdisciplinary Studies. 3 Hours.
Introduces students to the concept of interdisciplinary studies. May be taken by students considering pursuit of an Interdisciplinary Studies major or by students in their first semester following acceptance into the program. Required of all Interdisciplinary Studies majors. (Typically offered: Fall)

\section*{IDST 4013. Senior Capstone. 3 Hours.}

A capstone experience for graduating Interdisciplinary Studies students. Emphasizes skills of analysis, synthesis, and integration of knowledge gained from previous coursework in general education and interdisciplinary studies. Prerequisite: Senior standing and an IDSTBA major. (Typically offered: Fall and Spring)

\section*{Interior Design (IDES)}

\section*{International and Global Studies (INST)}

\section*{Courses}

INST 2813. Introduction to International Relations and Global Studies. 3 Hours. An interdisciplinary survey of the state system, the role of non-state actors, and the processes and outcomes of globalization. Topics include theories of international conflict and peace, international norms and ethics, international law and organizations, global cultural interactions, and contemporary transnational challenges. (Typically offered: Fall and Spring)

INST 2813H. Honors Introduction to International Relations and Global Studies. 3 Hours.
An interdisciplinary survey of the state system, the role of non-state actors, and the processes and outcomes of globalization. Topics include theories of international conflict and peace, international norms and ethics, international law and organizations, global cultural interactions, and contemporary transnational challenges. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to INST 2813.

INST 300V. Internship in International Studies. 1-6 Hour.
Internship in international studies-related agency or organization, arranged by the student and/or faculty member, under the guidance of a faculty member. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

INST 3303. European Integration and Globalization. 3 Hours.
Interdisciplinary study of the cultural, economic, and political processes of modern European integration in the context of a changing relationship between Europe and the wider world during the 20th and 21st centuries. (Typically offered: Fall Even Years)
This course is cross-listed with HIST 3103.
INST 3503. Issues in the Global South. 3 Hours.
Interdisciplinary study of salient historical and contemporary issues of the Global South, including the cultural, economic, and political forces that shape and/or emerge from societies or political subjects that historically experienced underdevelopment and colonialism. (Typically offered: Fall Odd Years)

INST 3603. Universal Human Rights: History and Practice since 1945. 3 Hours. Study of the development and growth of the universal human rights movement since the end of the Second World War. Emphasis on using human rights as a lens to understand and assess global affairs in the late 20th and early 21st centuries. Creates space for INST 3603 to be offered as part of a study abroad program. (Typically offered: Spring Even Years)

\section*{INST 3613. Research Methods. 3 Hours.}

Focuses on critical-thinking skills and information literacy needed for the interdisciplinary areas of study that comprise international and global studies: anthropology, economics, geography, history, and political science. Focuses on thesis-development, writing skills, methodological issues, and research strategies. Prerequisite: INST 2813. (Typically offered: Fall and Spring)

\section*{INST 3673. Social Entrepreneurship. 3 Hours.}

Explores notions of social entrepreneurship at both the global and local levels. Multiple case studies are analyzed to show the possibilities of participating in a market economy while promoting sustainable development. Students will undertake projects combining sound business practices with sustainable approaches to social challenges. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

INST 3803. International Organization. 3 Hours.
Addresses how state and non-state actors try to organize the international system to help manage crucial issues such as the development and use of force, the efficiency and fairness of markets, and the realization and protection of human rights and environmental health. (Typically offered: Spring)
This course is cross-listed with PLSC 3803.
INST 3843. Economics of the Developing World. 3 Hours.
Examines theories and patterns of economic development in emerging economies, the role of the World Bank and IMF as multilateral lenders and examination of their success and failures in fostering development, and measures of poverty and inequality and their implications for economic development. Prerequisite: ECON 2143 or (ECON 2013 and ECON 2023). (Typically offered: Fall and Spring)

\section*{INST 3853. Emerging Markets. 3 Hours.}

Analysis of the business and economic environment in emerging countries, focusing on Latin America, South East Asia and Transition Economies. Topics include market structure and market failures, financial and legal background, current institutions and political economy issues, and current business opportunities. Prerequisite: ECON 2143 or (ECON 2013 and ECON 2023). (Typically offered: Fall)

INST 3903. Crossing Borders: Transnationalism and Intercultural Transfer. 3 Hours.
Study of Transnational Theory and the concept of Intercultural Transfer Studies. Focuses on intercultural transfers of ideas, concepts, and models for political, social, economic, and cultural advancement. (Typically offered: Irregular)

INST 399VH. Honors Thesis. 1-6 Hour.
To be used for completing an International Studies Honors Thesis. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
INST 4003. Special Topics in International and Global Studies. 3 Hours. Intensive study of key global issues or aspects of international affairs. Prerequisite: INST 2813 or PLSC 2813. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

INST 4003H. Honors Special Topics in International and Global Studies. 3 Hours.
Intensive study of key global issues or aspects of international affairs. Prerequisite: INST 2813 or PLSC 2813 and honors standing. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to INST 4003.
INST 406V. Independent Study in International Studies. 1-6 Hour.
Independent study in international studies. Arranged in agreement and under the guidance of a faculty member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{INST 4103H. Honors Geography of Political Violence. 3 Hours.}

This seminar focuses on the rise of civil conflict in the post-World War II world. We are particularly interested in understanding the institutional challenges facing countries that experience such conflict. The class will develop a contextuallyinformed understanding of the international system and how it is shaped by civil war. Pre- or Corequisite: INST 2813. Prerequisite: Junior or senior standing and honors standing. (Typically offered: Fall Even Years)
This course is cross-listed with GEOS 4493.
INST 4603. Peace Studies: Approaches and Theory. 3 Hours.
Exploration of key theories, concepts, and methodological approaches within the interdisciplinary field of peace studies. Emphasis on historical and contemporary concepts of peace, conflict, violence, and justice; the institutions, legal frameworks, and intercultural norms facilitating peace; and the practical application of theory to strategic peace building. (Typically offered: Spring Odd Years)

INST 4653. International Food Security and Food Sovereignty. 3 Hours.
Explores the concepts of food security and food sovereignty and the ways in which humans have addressed issues related to hunger. Focus on the contemporary international cultural, social, and political discussion of future problems and solutions. (Typically offered: Irregular)

\section*{INST 4693. Approaching Global History. 3 Hours.}

Explores theoretical perspectives on global history through a treatment of the historiographical development of the field, readings of landmark texts, and selected case studies of global themes. (Typically offered: Irregular)
This course is cross-listed with HIST 4693.
INST 4793. Eugenics in Global Perspective. 3 Hours.
Exploration of Social Darwinist thought and eugenics policy as global phenomena in the nineteenth and twentieth centuries. (Typically offered: Irregular)

INST 4873. International Communication and Globalization. 3 Hours.
Examines aspects of international communication and the impact of globalization on the production, dissemination, and consumption of media technology and messages. (Typically offered: Irregular)

\section*{INST 4893. International Negotiation and Mediation. 3 Hours.}

This course examines international negotiations and mediation. International negotiation refers to the processes and methods by which state and non-state actors reach agreements through persuasion and similar non-violent means. This course analyzes the processes, methods, and mechanisms, and challenges of international negotiations and the growing use of mediation. (Typically offered: Irregular) This course is cross-listed with PLSC 4893.

INST 4913. International Studies Seminar. 3 Hours.
Intensive study of key global issues and aspects of international affairs, culminating in a research project. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

INST 4913H. Honors International Studies Seminar. 3 Hours.
Intensive study of key global issues and aspects of international affairs, culminating in a research project. Prerequisite: Honors and junior standing. (Typically offered: Fall and Spring)
This course is equivalent to INST 4913.
INST 493V. Global Changemakers: Social Innovation Abroad. 3-6 Hour.
Exploration of selected global issues and social innovation techniques through collaborative engagement with domestic and international entities. Focus on initiatives addressing global issues at the local or regional level. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
INST 493VH. Honors Global Changemakers: Social Innovation Abroad. 3-6 Hour.
Exploration of selected global issues and social innovation techniques through collaborative engagement with domestic and international entities. Focus on initiatives addressing global issues at the local or regional level. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to INST 493V.

\section*{Italian (ITAL)}

\section*{Courses}

ITAL 1003. Elementary Italian I. 3 Hours.
Elementary Italian I. (Typically offered: Fall)
ITAL 1013. Elementary Italian II. 3 Hours.
Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Spring)

ITAL 1113. Italian for Romance Language Speakers I. 3 Hours.
Designed for students with previous knowledge of another Romance Language, this intensive Italian course provides an accelerated introduction to Italian, combining the material of two semesters (ITAL 1003 \& ITAL 1013) into one. Attention is devoted to the four skills of speaking, listening, reading, writing, as well as culture. Students cannot earn credit for ITAL 1113 if both ITAL 1003 and ITAL 1013 have been completed. Prerequisite: [Three years of high school French, Spanish, or Portuguese] or [two semesters of French, Spanish, or Portuguese], or [instructor's consent]. (Typically offered: Fall)

\section*{ITAL 2003. Intermediate Italian I. 3 Hours.}

Intermediate courses lead to greater facility in spoken language and to more advanced reading and writing skills. (Typically offered: Fall and Spring)

ITAL 2013. Intermediate Italian II. 3 Hours.
Continued development of basic speaking comprehension, and writing skills and intensive development of reading skills. (Typically offered: Spring)

ITAL 2113. Italian for Romance Language Speakers II. 3 Hours.
Designed for students with previous knowledge of another Romance Language, this intensive Italian course provides an accelerated approach to Italian, combining the material of two semesters (ITAL 2003 \& ITAL 2013) into one. Attention is devoted to the four skills of speaking, listening, reading, writing, as well as culture. Prerequisite: ITAL 1013 or ITAL 1113 or instructor's consent. (Typically offered: Spring)

\section*{ITAL 2933. To Rome With Love. 3 Hours.}

Focuses on the practical and hands-on use of Italian in everyday situations in Rome. Students engage in the neighborhoods of Rome through the communicative approach, using linguistic components from class and combined with cultural aspects of Roman life (i.e., Roman art, history, Made-in-Italy, cinema, and food). (Typically offered: Fall, Spring and Summer)
ITAL 3033. Italian Conversation. 3 Hours.
Three hours per week of guided conversation practice for the post-intermediate student. Prerequisite: ITAL 2013. (Typically offered: Fall)

\section*{ITAL 3103. Italian Cinema. 3 Hours.}

Examines Italian culture (history, language, politics, religion, and society) through the lens of the camera. Content begins with the 1860's, covers the Unification of Italy, and continues to contemporary Italy. Students will analyze and examine diverse cultural themes within films. (Typically offered: Fall)

\section*{ITAL 3113. Introduction to Literature. 3 Hours.}

Development of reading skills and introduction to literary analysis. Prerequisite: ITAL 2013 or equivalent. (Typically offered: Spring) May be repeated for up to 3 hours of degree credit.

\section*{ITAL 3123. Advanced Italian. 3 Hours.}

Further intensive development of writing, listening and speaking skills. It will include a review of the essentials of Italian grammar. Prerequisite: ITAL 2013 or equivalent. (Typically offered: Spring)
ITAL 3333. Made In Italy. 3 Hours.
Based around the concept of MADE IN ITALY and its 4 As, Abbigliamento (clothes), Agroalimentare (food), Arredamento (furniture) and Automotive (automobiles), this course examines the economy of Italy through various perspectives. Prerequisite: ITAL 2013. (Typically offered: Irregular)
ITAL 3983. Special Studies. 3 Hours.
May be offered in a subject not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
ITAL 4023. Contemporary Images of and from Rome. 3 Hours.
Examines the many manifestations of Rome through literature, film, and onsite experiential learning. Introduces texts and places that highlight Rome as a protagonist from the late 19th century to the present. Taught in Italian. Prerequisite: ITAL 2013. (Typically offered: Summer)

ITAL 4033. Advanced Italian Conversation. 3 Hours.
Conversation practice for advanced undergraduates. Intended to refine language comprehension while providing in-depth understanding of Italian life and culture. Prerequisite: ITAL 3033 or ITAL 3113 or instructor consent. (Typically offered: Fall)

\section*{ITAL 4043. Black Italia. 3 Hours.}

Explores the history, representation, and lived experiences, both prejudices and successes, of marginalized persons in Italy, particularly those of African heritage through an interdisciplinary lens. (Typically offered: Spring Odd Years)
This course is cross-listed with AAST 4043.
ITAL 4113. Italian Fairy Tales in Literature, Visual Arts, and Cinema. 3 Hours. Explores different typologies of fables and examines the evolution of the genre from the Middle Ages to contemporary times. Taught in Italian. Prerequisite: ITAL 3113 or ITAL 3123 or instructor's consent. (Typically offered: Spring Even Years)
This course is cross-listed with MRST 4113.
ITAL 4123. Dante: A Journey Between Visions and Words. 3 Hours.
Explores the pivotal work of Dante Alighieri's Divine Comedy as well as its visual representations and critical interpretations from the Middle Ages to the contemporary time. Theme is variable. Taught in English. (Typically offered: Fall Odd Years)

ITAL 4133. The Power of Women: Representations of \& from Italian Women from Middle Ages to Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with GNST 4133, MRST 4133.
ITAL 4143. Tracing the Italian American Experience. 3 Hours.
Explores and analyzes the historical experience of Italian American migration in North America through media, literature, and the arts. (Typically offered: Fall Odd Years)

ITAL 4333. Italian for International Business. 3 Hours.
Equips students with the linguistic and cultural knowledge needed for the business sector in Italy and/or with Italian businesses housed in North America. Taught in Italian. Prerequisite: ITAL 3033 or ITAL 3333. (Typically offered: Irregular)
ITAL 475V. Special Investigations. 1-6 Hour.
Special investigation of one or more topics related to the Italian language. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
ITAL 5123. Dante: A Journey Between Visions and Words. 3 Hours. Explores the pivotal work of Dante Alighieri's Divine Comedy as well as its visual representations and critical interpretations from the Middle Ages to the contemporary time. Theme is variable. Taught in English. (Typically offered: Fall Odd Years)

ITAL 5133. The Power of Women: Representations of \& from Italian Women from Middle Ages to Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with GNST 5133, MRST 5133.
ITAL 5143. Tracing the Italian American Experience. 3 Hours.
Explores and analyzes the historical experience of Italian American migration in North America through media, literature, and the arts. (Typically offered: Fall Even Years)

\section*{Japanese (JAPN) \\ Courses}

JAPN 1003. Elementary Japanese I. 3 Hours.
Designed for true beginners of Japanese, this course aims to introduce general concepts of the Japanese language: the writing system, basic conversational expressions, vocabulary, and sentence patterns. (Typically offered: Fall)

JAPN 1013. Elementary Japanese II. 3 Hours.
Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability. (Typically offered: Spring)

\section*{JAPN 1116. Intensive Elementary Japanese. 6 Hours.}

Equivalent to JAPN 1003 and JAPN 1013. Intended for true beginners of Japanese who have never learned or spoken the language before. Emphasis on all skill areas: correct pronunciation, aural comprehension, speaking ability, reading, and writing. Focuses on developing the students' command of Japanese sentence patterns and vocabulary. (Typically offered: Spring)
JAPN 2003. Intermediate Japanese I. 3 Hours.
Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall)

\section*{JAPN 2013. Intermediate Japanese II. 3 Hours.}

Continued development of basic reading comprehension and writing skills and intensive development of reading skills. Prerequisite: JAPN 2003 or equivalent. (Typically offered: Spring)
JAPN 2013H. Honors Intermediate Japanese II. 3 Hours.
Continued development of basic reading comprehension and writing skills and intensive development of reading skills. Prerequisite: Honors standing and JAPN 2003, or equivalent. (Typically offered: Spring)
This course is equivalent to JAPN 2013.

\section*{JAPN 2116. Intensive Intermediate Japanese. 6 Hours.}

Equivalent to JAPN 2003 and JAPN 2013. Emphasizes intensive oral/aural drills and reading/speaking exercises and intensive grammar drills. Prerequisite: JAPN 1013 or JAPN 1116 or equivalent. (Typically offered: Irregular)

\section*{JAPN 3033. Advanced Japanese Conversation. 3 Hours.}

Conversational practice for advanced learners of Japanese. Designed primarily for students who intend to use Japanese in business and other formal settings. Honorific and humble expressions will be emphasized. Prerequisite: JAPN 3116 or equivalent. (Typically offered: Spring)

JAPN 3033H. Honors Advanced Japanese Conversation. 3 Hours.
Conversational practice for advanced learners of Japanese. Designed primarily for students who intend to use Japanese in business and other formal settings. Honorific and humble expressions will be emphasized. Prerequisite: Honors standing and JAPN 2013. (Typically offered: Fall)
This course is equivalent to JAPN 3033.
JAPN 3116. Intensive Advanced Japanese. 6 Hours.
This course aims to improve students' Japanese proficiency further in all skill areas through intensive practice. Prerequisite: JAPN 2013 or JAPN 2116 or equivalent Japanese proficiency. (Typically offered: Fall)
JAPN 3116H. Honors Intensive Advanced Japanese. 6 Hours.
This course aims to improve students' Japanese proficiency further in all skill areas through intensive practice. Prerequisite: Honors standing and (JAPN 2013 or JAPN 2116 or equivalent Japanese proficiency). (Typically offered: Fall) This course is equivalent to JAPN 3116.

JAPN 3983. Special Studies. 3 Hours.
May be offered in a subject not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

JAPN 4033. Oral Communication \& Composition in Japanese. 3 Hours. Designed to strengthen Japanese language skills in oral communication and writing. Consists of conversational activities, presentations and debates, and composition in settings such as business, school, and everyday life. Prerequisite: JAPN 3116 or equivalent Japanese proficiency. (Typically offered: Fall)

\section*{JAPN 4033H. Honors Oral Communication \& Composition in Japanese. 3}

\section*{Hours.}

Designed to strengthen Japanese language skills in oral communication and writing. Consists of conversational activities, presentations and debates, and composition in settings such as business, school, and everyday life. Prerequisite: JAPN 3116 or equivalent Japanese proficiency. (Typically offered: Fall)
This course is equivalent to JAPN 4033.
JAPN 4313. Language and Society of Japan. 3 Hours.
The primary objective of this course is to investigate the way the Japanese language reflects the beliefs and custom of the Japanese people as a social group. For comparison purposes, this course makes reference to studies in American language and culture. Proficiency in Japanese not required. Prerequisite: Junior standing. (Typically offered: Fall)

JAPN 4333. Professional Japanese I: Business Writing. 3 Hours.
This course aims to familiarize the students with formats, vocabulary, and expressions in Japanese business correspondence. Emphasizes career-ready Japanese language proficiency. Prerequisite: JAPN 3116 or equivalent Japanese proficiency. (Typically offered: Spring)

\section*{JAPN 4333H. Honors Business Writing in Japanese. 3 Hours.}

This course aims to familiarize the students with formats, vocabulary, and situationally specific expressions in Japanese business correspondence. Prerequisite: JAPN 2013 or equivalent Japanese proficiency. (Typically offered: Spring)
This course is equivalent to JAPN 4333.
JAPN 4343. Professional Japanese II: Translation. 3 Hours.
Continuation of Professional Japanese I. Emphasizes translation, career-ready Japanese language proficiency, and further advancement of Japanese language proficiency in all skill areas. Completion of a professional translation project based on contemporary material is required. Prerequisite: JAPN 4333 or equivalent. (Typically offered: Fall)
JAPN 4343H. Honors Professional Japanese II: Translation. 3 Hours. Continuation of Professional Japanese I. Emphasizes translation, career-ready Japanese language proficiency, and further advancement of Japanese language proficiency in all skill areas. Completion of a professional translation project based on contemporary material is required. Prerequisite: JAPN 4333 or equivalent. (Typically offered: Fall)
This course is equivalent to JAPN 4343.
JAPN 5313. Language and Society of Japan. 3 Hours.
The primary objective of this course is to investigate the way the Japanese language reflects the beliefs and custom of the Japanese people as a social group. For comparison purposes, this course makes reference to studies in American language and culture. Proficiency in Japanese not required. Graduate degree credit will not be given for both JAPN 4313 and JAPN 5313. (Typically offered: Fall)

\section*{JAPN 5333. Professional Japanese I: Business Writing. 3 Hours.}

This course aims to familiarize the students with formats, vocabulary, and expressions in Japanese business correspondence. Emphasizes career-ready Japanese language proficiency. Graduate degree credit will not be given for both JAPN 4333 and JAPN 5333. Prerequisite: JAPN 3116 or equivalent Japanese proficiency. (Typically offered: Spring)

\section*{Jewish Studies (JWST)}

\section*{Courses}

JWST 2003. Introduction to Judaism. 3 Hours.
An introduction to the practices, teachings, and scriptures of Judaism, focusing on the post-Biblical period up to the present. (Typically offered: Fall Odd Years)

JWST 3103. Introduction to Jewish Languages. 3 Hours.
An introduction to the alphabet, grammar, syntax, and basic vocabulary of Hebrew, Jewish Aramaic and Yiddish. (Typically offered: Fall Even Years)
JWST 4003. Modern Jewish Thought. 3 Hours.
A survey of the main trends in Jewish thought from the seventeenth through the nineteenth century. (Typically offered: Irregular)
This course is cross-listed with PHIL 4103.

\section*{JWST 4013. Contemporary Jewish Thought. 3 Hours.}

A survey of trends in Jewish thought in the twentieth and twenty-first centuries, focusing on the ways in which Jewish thinkers have responded to the events affecting Jews and the conditions of Jewish life in from approximately 1900 to the present. (Typically offered: Spring Odd Years)
This course is cross-listed with PHIL 4313.
JWST 470V. Special Topics in Jewish Studies. 1-3 Hour.
Irregular course offerings that focus on a specialized area of Jewish Studies not covered in depth in regular JWST or affiliated courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

JWST 475V. Independent Investigations in Jewish Studies. 1-3 Hour.
This course can be offered to allow a student to pursue reading and research on a topic of interest not covered in regular JWST courses. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
JWST 570V. Special Topics in Jewish Studies. 1-3 Hour.
Irregular course offerings that focus on a specialized area of Jewish Studies not covered in depth in regular JWST or affiliated courses. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{Journalism (JOUR) Courses}

JOUR 1003. Journalistic Writing Skills. 3 Hours.
Provides a functional approach to improving language and writing skills specific to journalistic writing. Covers introductory journalistic writing and correct grammar usage, the logic governing syntax and punctuation use, analysis of grammar and syntax, sentence structure, word selection to convey proper meaning, memory aids, and other language topics relevant to journalistic writing. Cannot count as a major or minor elective within any ADPR or Journalism major or concentration, or Journalism and Strategic Media minor. Prerequisite: Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent. (Typically offered: Fall and Spring)
JOUR 1023. Media and Society. 3 Hours.
A survey of mass media (newspaper, radio, TV, magazine, advertising, public relations, photography, etc.) which stresses their importance in today's society and introduces the student to the various areas in journalism. Recommended for students considering journalism as a major. Prerequisite: Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent. (Typically offered: Fall and Spring)

\section*{JOUR 1033. Media Writing. 3 Hours.}

Introduces students to the skills of observation, critical thinking and concise writing required in all aspects of journalism and strategic media, as well as to the technology needed in upper-level courses. A prerequisite to JOUR 2003, JOUR 2013, JOUR 2031L, JOUR 2032, JOUR 2053, ADPR 3723 and ADPR 3743. Corequisite: Lab component. Pre- or Corequisite: JOUR 1003 or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a \(75 \%\) or higher. Prerequisite: Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent. (Typically offered: Fall, Spring and Summer)

\section*{JOUR 1100. Grammar Spelling Punctuation Requirement. 0 Hours.}

Students must complete the Grammar Spelling Punctuation (GSP) requirement as a prerequisite or corequisite to JOUR 1033 Media Writing. Students who do not take JOUR 1003 Journalistic Writing Skills to complete the GSP must take JOUR 1100, study for the GSP on their own and pass by earning a \(75 \%\) or higher on the GSP test administered by the School of Journalism and Strategic Media. (Typically offered: Fall and Spring)

JOUR 2003. Storytelling for Today's Media. 3 Hours.
Introduction to developing content strategies that tell accurate, concise stories across multiple media platforms. Emphasizes clear, effective storytelling in media content production for print, broadcast and digital platforms, including social media, podcasting, video, and short-feature writing. Integrates lessons on corporate social responsibility, personal branding and media entrepreneurship. Prerequisite: (Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent) and JOUR 1033. (Typically offered: Fall and Spring)

\section*{JOUR 2013. News Reporting I. 3 Hours.}

Intensive training in the methods of gathering and writing news. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: Must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; JOUR 1023 and JOUR 1033, each with a grade of \(C\) or better, and either 1) JOUR 1003 with a grade of C or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a \(75 \%\) or higher, or 2) at least 30 credit hours completed. (Typically offered: Fall and Spring)

JOUR 2031L. Broadcast News Reporting I Laboratory. 1 Hour.
Provides experience in basic broadcast news reporting techniques. Laboratory 3 hours per week. Corequisite: JOUR 2032. Prerequisite: ((At least 30 credit hours completed; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; JOUR 1033 with a grade of C or better; JOUR 1003 with a grade of C or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a \(75 \%\) or higher)) or (At least 30 credit hours completed; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; must have completed at least 6 credit hours in JOUR courses, each with a grade of \(C\) or better.) (Typically offered: Fall and Spring)

JOUR 2032. Broadcast News Reporting I. 2 Hours.
Intensive training in the methods of gathering and writing broadcast news. Lecture 2 hours per week. Corequisite: JOUR 2031L. Prerequisite: ((At least 30 credit hours completed; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; JOUR 1033 with a grade of C or better; JOUR 1003 with a grade of C or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a \(75 \%\) or higher)) or (At least 30 credit hours completed; must be a Journalism major, Advertising and Public Relations major, Journalism minor, or obtain department consent; must have completed at least 6 credit hours in JOUR courses, each with a grade of \(C\) or better.) (Typically offered: Fall and Spring)

\section*{JOUR 2053. Multimedia Journalism. 3 Hours.}

Provides students with the skills of visual literacy, photo editing, audio processing, video editing and web publishing. Good writing will be emphasized. The course examines basic aesthetic principles in visual composition and techniques applicable to audio, video and web production. Prerequisite: Must be a Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or obtain department consent; JOUR 1023 and JOUR 1033, each with a grade of \(C\) or better, and either 1) JOUR 1003 with a grade of \(C\) or better or complete and pass the GSP (Grammar, Spelling and Punctuation) test in JOUR 1100 with a \(75 \%\) or higher, or 2) At least 30 credit hours completed. (Typically offered: Fall and Spring)

\section*{JOUR 2063. Media Graphics and Technology. 3 Hours.}

Introduction to computer skills required in journalism; focuses on training in the major creative software used for generating media graphics and visual communication. Emphasizes content creation and web publishing, including infographics and promotional materials. Prerequisite: Journalism major, Advertising and Public Relations major, Journalism minor, IDST major with JOUR track, or department consent. (Typically offered: Fall and Summer)

\section*{JOUR 2331L. Photojournalism I Laboratory. 1 Hour.}

Photojournalism 1 Lab involves the transfer of images from a digital camera to a computer, and involves the use of image editing and enhancing software as well as layout and design software. Corequisite: JOUR 2332. (Typically offered: Fall)

\section*{JOUR 2332. Photo Journalism I. 2 Hours.}

Beginning course in the fundamentals of photography, including digital photography, composition, file transfer and management, image enhancement, and layout and design. Corequisite: JOUR 2331L. (Typically offered: Fall)

\section*{JOUR 2453. Introduction to Sports Television Production I. 3 Hours.}

Introduction to the specialized field of sports television production. Focuses on multicamera, single-camera and studio production. Studio lab and field work outside of regularly scheduled class time required. (Typically offered: Fall)

JOUR 3013. Editing. 3 Hours.
Theories and practices in newspaper editing, copyreading, headline writing, page layout and the gathering and publication of written and pictorial information. Prerequisite: JOUR 1023 and JOUR 2013, each with a grade of \(C\) or better. (Typically offered: Fall and Spring)

\section*{JOUR 3023. News Reporting II. 3 Hours.}

Continuation of JOUR 2013. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: JOUR 2013 with a grade of C or better. (Typically offered: Fall and Spring)

JOUR 3043. Performer in Mass Media. 3 Hours.
Introduction to performing in mass media on video, digital, and audio, while connecting effectively with audiences as journalists, spokespersons, experts, activists, or in other roles. Emphasizes principles and best practices related to performing on camera and microphone, voice and movement, researching and critiquing performances, and diversity and ethical performance. (Typically offered: Fall and Spring)

JOUR 3071L. Broadcast News Reporting II Laboratory. 1 Hour.
Continuation of JOUR 2031L. Including advanced skills in broadcast news techniques. Corequisite: JOUR 3072. Prerequisite: JOUR 2032 and JOUR 2031L, each with a grade of C or better. (Typically offered: Fall and Spring)

\section*{JOUR 3072. Broadcast News Reporting II. 2 Hours.}

Continuation of JOUR 2032. Including advanced methods of gathering and writing broadcast news. Corequisite: JOUR 3071L. Prerequisite: JOUR 2032 and JOUR 2031L, each with a grade of C or better. (Typically offered: Fall and Spring)

\section*{JOUR 3123. Enterprise Journalism. 3 Hours.}

Developing ideas and subjects for feature and human-interest articles for multiple platforms, with emphasis on the freelance trade. Instruction in idea generation, story pitches, interviewing methods, research, writing, revision, and narrative structure. Prerequisite: JOUR 2013 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{JOUR 3163. Sports Journalism. 3 Hours.}

Emphasis on techniques and principles of coverage of sports and sports-related subjects on and off the field, and on the relationship between sports and the mass media. (Typically offered: Fall)

JOUR 3263. African Americans in Film. 3 Hours.
A survey of the history of images of African Americans in film, especially as these images are examined in the context of stereotypical renditions and/or realistic representations of African American experiences. Issues of African American history, culture, and socio-political context will be addressed in the analyses of these films. Prerequisite: ENGL 1023 and junior or senior standing. (Typically offered: Irregular) This course is cross-listed with AAST 3263, ENGL 3263, COMM 3263.

\section*{JOUR 3273. African Americans in Documentary Film. 3 Hours.}

Exploration of the African-American image and experience in the context of time, historical record and varying production viewpoints from diverse documentarians. African-American history, culture and socio-political context are addressed in the analyses of these documentary films from the perspectives of mainstream media, independent filmmakers and minority documentarians. Prerequisite: Junior or senior standing. (Typically offered: Spring)
This course is cross-listed with AAST 3273, COMM 3273.

\section*{JOUR 3633. Media Law. 3 Hours.}

Constitutional guarantees, statutory laws and court cases applicable to mass communications. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

\section*{JOUR 3923H. Honors Colloquium. 3 Hours.}

Covers a special topic or issue, offered as a part of the honors program.
Prerequisite: Honors candidacy (not restricted to candidacy in journalism). (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{JOUR 401V. Advanced Journalistic Practices. 1-4 Hour.}

Study of advanced journalistic practices and methods, individual or group projects. May only be taken once for degree credit. Prerequisite: Junior standing and 10 hours of journalism and a 2.5 cumulative grade average. (Typically offered: Fall and Spring)

\section*{JOUR 402V. Internship in Journalism. 1-3 Hour.}

Credit for practical experience gained through a journalistic internship. Report required on significant aspect of internship experience. Prerequisite: Journalism or Advertising and Public Relations major, and junior standing, and 10 hours JOUR/ ADPR courses, and 2.50 minimum cumulative grade point average. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{JOUR 4033. Advanced Radio News Reporting and Podcasting. 3 Hours.}

Research, write and produce in-depth public radio style news stories and turn them into a three-episode podcast. Prerequisite: Instructor consent. (Typically offered: Spring)

\section*{JOUR 4043. Government and the Media. 3 Hours.}

Focuses on the links between mass media and government and the increasingly significant role of media in politics and government. Examines the power, responsibility, and performance of the press and public officials/government agencies in their relationship with each other. Prerequisite: Junior standing. (Typically offered: Fall)

\section*{JOUR 405V. Specialized Journalism Seminar. 1-3 Hour.}

Primary purpose of course is to enlarge the journalistic skills of students interested in advanced forms of mass communication. Students undertake projects related to particular aspects or problems of journalism. Content varies. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

JOUR 4063. Computer-Assisted Publishing. 3 Hours.
In-depth, hands-on exploration of computer hardware and software in the design and production of media messages. Examination of developing media technologies and the computer's influence on design and conceptualization. (Typically offered: Irregular)

JOUR 4073. Social Media and Journalism. 3 Hours.
Social Media and Journalism teaches conceptual knowledge and skills to develop news judgment and use changing technological tools to disseminate news quickly and to different audiences. The value of interacting with sources and the audience is stressed as are ethical, legal and accuracy issues. Prerequisite: JOUR 2013 or JOUR 2032 with a grade of C or better. (Typically offered: Fall)

JOUR 4083. Data Journalism. 3 Hours.
An introduction to basic data reporting skills, including how to use data to guide and inform reporting as well as tell stories to better serve the public. Ethical issues and best practices in data reporting are also examined. Prerequisite: Any STAT course or instructor permission. (Typically offered: Fall)

\section*{JOUR 4093. Business Journalism. 3 Hours.}

Examines how the U.S. economy works and how to find news in business, market and government data sources. Focuses on the role of corporations, financial markets, and regulators, and benefiting students interested in sports, entertainment, political and investigative journalism. (Typically offered: Spring)

JOUR 4313. Literature of Journalism. 3 Hours.
Surveys the works of book and magazine-length narrative non-fiction, from the mid-19th century to the present. (Typically offered: Fall)

JOUR 4333. Ethics in Journalism. 3 Hours.
Critical examination of specific ethical problems confronting professionals in all areas of mass communications. Reading and writing assignments are aimed at familiarizing students with the nature of the mass media and their social responsibilities. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

\section*{JOUR 443V. Event Promotion and Execution. 1-3 Hour.}

Practicum for students to plan, design, promote and execute several Journalism Days events, to include the Roy Reed Lecture, a scholarship reception, a job fair, Senior Salute and a fundraiser. Prerequisite: Junior standing. (Typically offered: Spring)

\section*{JOUR 4503. Magazine Writing. 3 Hours.}

Advanced long-form depth reporting and narrative writing augmented with multimedia, with an eye to generating the style of work found in such leading magazines as The New Yorker, the Atlantic, and Esquire. Advanced instruction in generating and pitching stories, reporting and writing for narrative, research. Stories are frequently published in nationally acclaimed student-magazine, Hill. Prerequisite: JOUR 2013 with a grade of C or better. (Typically offered: Spring)

\section*{JOUR 4863. Television News Reporting I. 3 Hours.}

Continuation of JOUR 3072 and JOUR 3071L. Includes the specialized knowledge and skills needed in field reporting, anchoring, writing, and producing news for commercial television. Lab component arranged. Corequisite: Lab component. Prerequisite: JOUR 3072 and JOUR 3071L, each with a grade of \(C\) or better. (Typically offered: Fall and Spring)

\section*{JOUR 4873. Television News Reporting II. 3 Hours.}

Continuation of JOUR 4863. Laboratory component arranged. Prerequisite:
JOUR 4863 with a grade of \(C\) or better. (Typically offered: Fall and Spring)
JOUR 4883. Advanced Film \& Video Feature Production. 3 Hours.
Students research, write, direct, produce, shoot and edit non-fiction short feature films and videos for television, streaming and other presentations, including corporate and nonprofit use. Corequisite: Lab component. Prerequisite: JOUR 4863 with a grade of C or better, or instructor consent. (Typically offered: Irregular)

\section*{JOUR 4893. Television News Producing. 3 Hours.}

Intensive training in methods of producing a live television news broadcast, including news gathering, writing broadcast copy and production strategies. Lab 6 hours. Corequisite: Lab component. Prerequisite: JOUR 3072 and JOUR 3071L, each with a grade of C or better. (Typically offered: Fall and Spring)

\section*{JOUR 4903. Community Journalism. 3 Hours.}

This three-hour course will blend student' reporting and editing skills with instruction on how regional newspapers select and present news to a local audience. This course will instruct students in deciding news stories for regional readers, how those stories can best be written and displayed. The semester goal is to publish a paper. Prerequisite: Junior standing. (Typically offered: Spring)

JOUR 4923. History of the Black Press. 3 Hours.
Covers the historic context of contributions and innovations to U.S. newspapers by African Americans. Also investigates the role of the black press from its beginnings in 1827 through the civil rights movement. Prerequisite: Junior standing. (Typically offered: Spring Even Years)
This course is cross-listed with AAST 4923.

\section*{JOUR 4943H. Honors Research Methods in Journalism. 3 Hours.}

Emphasis on the major types of qualitative and quantitative research, electronic data base searching, and traditional library research. Prerequisite: Journalism or Advertising and Public Relations major and honors standing. (Typically offered: Spring)

\section*{JOUR 4981. Journalism Writing Requirement. 1 Hour.}

Directed study in conceptualizing, researching, and writing a major paper to meet the college writing requirement. Students must make a C in order to satisfy the college writing requirement. Prerequisite: 90 hours. (Typically offered: Fall and Spring)

JOUR 498VH. Honors Journalism Writing Requirement. 1-6 Hour.
Honors journalism writing requirement. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is equivalent to JOUR 4981.
JOUR 5003. Advanced Reporting. 3 Hours.
Stresses public affairs coverage, interpretive, investigative, and analytic journalism, involving research, work with documents, public records, and budgets and specialized reporting. (Typically offered: Irregular)

JOUR 5013. Advanced Radio News Reporting and Podcasting. 3 Hours.
Research, write and produce in-depth public radio style news stories and turn them into a three-episode podcast. Prerequisite: Instructor consent. (Typically offered: Spring)

\section*{JOUR 5023. Journalism Theory. 3 Hours.}

Examination of the major journalism and mass media theories and conceptual perspectives regarding journalism, news, mass media, advertising and public relations relevant to industry and academic researchers and professionals. (Typically offered: Fall)

\section*{JOUR 5043. Research Methods in Journalism. 3 Hours.}

Research methods of utility in journalism. Emphasis on survey research, electronic data base searching, and traditional library research. Prerequisite: Graduate standing or honors program standing. (Typically offered: Spring)

\section*{JOUR 5063. Multiculturalism in Advertising and Public Relations. 3 Hours.}

Seminar course involving the critical examination of the major cultural, social, political, economic, ethical, and persuasion theories and/or issues relevant to advertising and public relations. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{JOUR 508V. Graduate Journalism Internship. 1-3 Hour.}

Credit for practical experience gained through a journalistic internship. Must have completed 6 hours of graduate course credit. May be repeated for up to 3 hours of degree credit. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{JOUR 5093. Business Journalism. 3 Hours.}

Examines how the U.S. economy works and how to find news in business, market and government data sources. Focuses on the role of corporations, financial markets, and regulators, and benefiting students interested in sports, entertainment, political and investigative journalism. (Typically offered: Spring)

\section*{JOUR 5133. Ethics in Journalism. 3 Hours.}

A seminar examining the professional ethical principles and ethical performance in the journalism field. The ethical performance of the mass media dedicated to news, public relations and advertising is evaluated based on ethical theories and industry standards. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{JOUR 5163. Computer-Assisted Publishing. 3 Hours.}

In-depth, hands-on exploration of computer hardware and software in the design and production of media messages. Examination of developing media technologies and the computer's influence on design and conceptualization. Graduate degree credit will not be given for both JOUR 4063 and JOUR 5163. (Typically offered: Irregular)

\section*{JOUR 5173. Social Media and Journalism. 3 Hours.}

Social Media and Journalism teaches conceptual knowledge and skills to develop news judgment and use changing technological tools to disseminate news quickly and to different audiences. The value of interacting with sources and the audience is stressed as are ethical, legal and accuracy issues. Graduate degree credit will not be given for both JOUR 4073 and JOUR 5173. Prerequisite: JOUR 2013 or JOUR 2032 with a grade of C or better. (Typically offered: Fall)

\section*{JOUR 5193. Professional Journalism Seminar. 3 Hours.}

Examination of complex problems encountered by professional journalists with focus on research and analysis of the role of journalism in major social, economic, and political developments. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{JOUR 5283. Data Journalism. 3 Hours.}

Provides an in-depth experience of combining street reporting and data analysis to tell a story of significant societal importance. Students are introduced to techniques in data analysis, management, visualization and production of data-driven articles and and multimedia presentations. Prerequisite: Instructor permission. (Typically offered: Fall)

\section*{JOUR 5313. Literature of Journalism. 3 Hours.}

A survey of superior works of book and magazine-length narrative non-fiction, from the mid-19th century to today. Includes such authors as Hersey, Didion, Orlean, and Conover. (Typically offered: Irregular)

\section*{JOUR 5323. Documentary Production I. 3 Hours.}

In-depth study of documentary film as non-fiction, long form journalism. Covers subject, funding, research and development, pre-production planning, field production, talent, music, post production, promotion, broadcast and distribution. Required trip to Hot Springs Documentary Film Festival. (Typically offered: Fall)

\section*{JOUR 5333. Documentary Production II. 3 Hours.}

A continuation of JOUR 5323, Documentary Production I. Students photograph, write, and edit a documentary begun in the fall semester. Prerequisite: JOUR 5323. (Typically offered: Spring)

\section*{JOUR 5463. Campaigns. 3 Hours.}

Applying advertising principles and techniques to preparation of a complete campaign; determining agency responsibilities, marketing objectives and research, media mix, and creative strategy. Emphasis also given to campaign presentation delivery, utilizing audio and visual techniques. Graduate degree credit will not be given for both ADPR 4463 and JOUR 5463. Prerequisite: ADPR 3723 and ADPR 3743, each with a grade of B or better, and 2.5 overall GPA. (Typically offered: Fall, Spring and Summer)

JOUR 5473. Account Planning. 3 Hours.
An introduction to applied advertising research and account planning. Integrate consumers' perspectives into creative strategy to developing brand stories for clients. Write creative briefs, positioning statements and prepare copy-testing research instruments to evaluate messages. Utilize consumer research for creating messages for diverse cultures. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

\section*{JOUR 5503. Magazine Writing. 3 Hours.}

This intensive writing and reporting course is for students with proven featurewriting skills and an interest in the human-interest stories found in such leading magazines as The New Yorker, Esquire, Harper's, the Atlantic, and others. Students will compose magazine-length nonfiction stories on timely subjects under deadline. Stories are submitted for contests and publication, when possible. Graduate degree credit will not be given for both JOUR 4503 and JOUR 5503. Prerequisite: JOUR 2013 with a grade of C or better. (Typically offered: Spring)

\section*{JOUR 5883. Advanced Television News Production. 3 Hours.}

Continuation of JOUR 4873. Students prepare and present television newscasts for air. Laboratory component arranged. Graduate degree credit will not be given for both JOUR 4883 and JOUR 5883. Corequisite: Lab component. Prerequisite: JOUR 4873 with a grade of C or better. (Typically offered: Irregular)

JOUR 5903. Community Journalism. 3 Hours.
This three-hour course will blend student reporting and editing skills with instruction on how regional newspapers select and present news to a local audience. This course will instruct students in deciding news stories for regional readers, how those stories can best be written and displayed. The semester goal is to publish a paper. Graduate degree credit will not be given for both JOUR 4903 and JOUR 5903. (Typically offered: Spring)

JOUR 5923. History of the Black Press. 3 Hours.
Covers the historic context of contributions and innovations to U.S. newspapers by African Americans. Also investigates the role of the black press from its beginnings in 1827 through the civil rights movement. (Typically offered: Spring Even Years)
JOUR 600V. Master's Thesis. 1-6 Hour.
Required of all M.A. journalism students. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Kinesiology (KINS)}

\section*{Courses}

\section*{KINS 405V. Independent Study. 1-3 Hour.}

Provides students an opportunity to pursue special study of research problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

KINS 589V. Independent Research. 1-3 Hour.
Development, implementation, and completion of basic or applied research project. Prerequisite: Admission to the master's program in kinesiology or admission to the master's program in athletic training. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

KINS 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

KINS 605V. Independent Study. 1-3 Hour.
Provides students with an opportunity to pursue special study of educational problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{Landscape Architecture (LARC)}

\section*{Courses}

LARC 1003. Basic Course in the Arts: The American Landscape. 3 Hours. Mankind's changing attitudes toward urban and rural outdoor spaces and their aesthetic and cultural values. The origins of the environmental/conservation movement and the development of an American land ethic. Appreciation of the relationship of the natural and historic landscape to the arts and the aesthetic importance of open space. (Typically offered: Fall and Spring)

LARC 1003H. Honors Basic Course in the Arts: The American Landscape. 3 Hours.
Mankind's changing attitudes toward urban and rural outdoor spaces and their aesthetic and cultural values. The origins of the environmental/conservation movement and the development of an American land ethic. Appreciation of the relationship of the natural and historic landscape to the arts and the aesthetic importance of open space. (Typically offered: Fall and Spring) This course is equivalent to LARC 1003.

\section*{LARC 1315. Fundamental Design Skills. 5 Hours.}

Fundamental design skills; development of visual and verbal communication skills including observation skills, design technologies, analysis and representation in both 2-dimensions and 3-dimensions through analog and digital tools; creative and critical thinking skills. (Typically offered: Fall and Summer)
LARC 1325. Fundamental Design Methodology. 5 Hours.
Fundamental design skills; use of precedents for understanding principles of design and natural and formal ordering systems; design development using both iterative and alternative methods of exploration in 2-dimensions and 3-dimensions using analog and digital tools; continued development of visual and verbal communication skills. Prerequisite: LARC 1315. (Typically offered: Spring and Summer)

LARC 2113. Design Visualization, Inquiry and Communications. 3 Hours. Investigation and application of foundational, current and innovative techniques and technologies used in landscape architecture. Field work and other modes of inquiry and seeing are used to study sites. Processes and workflow are learned. Students learn inquiry through technologies, site context investigation, and how to communicate to stakeholders. (Typically offered: Fall)

LARC 2113H. Honors Design Visualization, Inquiry and Communications. 3 Hours.
Investigation and application of foundational, current and innovative techniques and technologies used in landscape architecture. Field work and other modes of inquiry and seeing are used to study sites. Processes and workflow are learned. Students learn inquiry through technologies, site context investigation, and how to communicate to stakeholders. Prerequisite: Honors standing. (Typically offered: Fall) This course is equivalent to LARC 2113.

LARC 2335. Landscape Architecture Design III: Engaging Site, Engaging Place. 5 Hours.
Fundamentals of site inventory, analysis, and assessment. Through measurement, observation, and documentation, students engage with the design of local and regional sites, synthesizing place- based inventorial understanding and experiential response. Students gain an appreciation for both quantifiable and qualitative measurement and observation as creative tools for design development. Corequisite: LARC 2351. Prerequisite: LARC 1325. (Typically offered: Fall)
LARC 2345. Landscape Architecture IV: Collaborating with Site. 5 Hours. Students consider an increased complexity of landscape issues and multi-purpose design strategies within a local or regional context, while simultaneously responding to external programmatic requirements. Instructor-guided design projects reinforce the value of site exploration and enumeration. The design process is enriched through programmatic and service requirements, stakeholder collaboration, and reflection on design implication. Corequisite: LARC 2351. Prerequisite: LARC 2335. (Typically offered: Spring)

\section*{LARC 2345H. Honors Landscape Architecture IV: Collaborating with Site. 5} Hours.
Students consider an increased complexity of landscape issues and multi-purpose design strategies within a local or regional context, while simultaneously responding to external programmatic requirements. Instructor-guided design projects reinforce the value of site exploration and enumeration. The design process is enriched through programmatic and service requirements, stakeholder collaboration, and reflection on design implication. Corequisite: LARC 2351. Prerequisite: LARC 2335 and Honors candidacy. (Typically offered: Spring)
This course is equivalent to LARC 2345.

\section*{LARC 2351. Advocacy and Theory Module: Engaging Site, Engaging Place. 1} Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 2335. (Typically offered: Fall)
LARC 2361. Advocacy and Theory Module: Collaborating with Site. 1 Hour. Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 2345. (Typically offered: Spring)
LARC 2371. Advocacy and Theory Module: International Urban Place. 1 Hour. Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 3355. (Typically offered: Summer)
LARC 2714. Ecological Design and Construction: Terrain. 4 Hours.
Introduces students to fundamental principles of reading and understanding geomorphology, site systems, and site design. Design tools include grading techniques, earthwork computations, and site-related documentation of natural and built structures. Site-related principles of sustainability are introduced as a framework for solving contemporary site issues. (Typically offered: Fall)
LARC 2714H. Honors Ecological Design and Construction: Terrain. 4 Hours. Introduces students to fundamental principles of reading and understanding geomorphology, site systems, and site design. Design tools include grading techniques, earthwork computations, and site-related documentation of natural and built structures. Site-related principles of sustainability are introduced as a framework for solving contemporary site issues. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to LARC 2714.

\section*{LARC 2914. Sustainable Design and Construction: Plant Communities. 4} Hours.
Introduces plants as components of healthy ecosystems, to innovative and sustainable plants and planting strategies as design frameworks, and to planting as powerful design tool. Soils as building block of healthy designs, foundation identification of woody plants and plant taxonomy, and fundamental concepts of time--ephemerality, phenology, and phenomenology. (Typically offered: Spring)

\section*{LARC 303V. Special Projects. 1-6 Hour.}

Design implementation, study, practicum, and preparation of working drawings. (Typically offered: Irregular) May be repeated for degree credit.

\section*{LARC 303VH. Honors Special Projects. 1-6 Hour.}

Design implementation, study, practicum, and preparation of working drawings. Prerequisite: Honors candidacy. (Typically offered: Irregular)
This course is equivalent to LARC 303 V .
LARC 3123. Advanced Design Visualization, Inquiry and Communications. 3 Hours.
Students learn the applications of current communication techniques and technologies in landscape architecture to discover implications through inquiry. Field work and other modes of investigation and seeing are used around urbanization and large scale landscapes in design inquiry. Students learn how to communicate the implications of design to broad stakeholders. (Typically offered: Spring)

LARC 3123H. Honors Advanced Design Visualization, Inquiry and Communications. 3 Hours.
Students learn the applications of current communication techniques and technologies in landscape architecture to discover implications through inquiry. Field work and other modes of investigation and seeing are used around urbanization and large scale landscapes in design inquiry. Students learn how to communicate the implications of design to broad stakeholders. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to LARC 3123.
LARC 3355. Landscape Architecture Design V: International Urban Place. 5 Hours.
Investigation of social behavior as applied to program and design that serves human needs. Projects reflect increased scope, scale, and resolution with a detailed design component. Studio and lecture. Corequisite: LARC 2371. Prerequisite: LARC 2345. (Typically offered: Summer)
LARC 3365. Landscape Architecture Design VI: Engaging Communities; Understanding Culture. 5 Hours.
Students engage in design projects working for and/or with a particular population, including forming partnerships with a variety of stakeholders. The studio emphasizes empathy and understanding of competing value systems. Students apply a new cultural understanding to design projects. Corequisite: LARC 3381. Prerequisite: LARC 3355. (Typically offered: Fall)

\section*{LARC 3375. Landscape Architecture Design VII: Collaborating with} Communities. 5 Hours.
Investigation and application of an issues-based, service-learning, community design project, focusing on resiliency and forming partnerships with a variety of stakeholders. Students engage in design as a means for influencing and negotiating on behalf of a community partner. Corequisite: LARC 3391. (Typically offered: Spring)

\section*{LARC 3381. Advocacy and Theory Module: Engaging Communities; Understanding Culture. 1 Hour.}

Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 3365. (Typically offered: Fall)
LARC 3391. Advocacy and Theory Module: Collaborating with Communities. 1 Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 3375. (Typically offered: Spring)
LARC 3413. History of Landscape Architecture I. 3 Hours.
Analysis of the interaction between landscapes and human cultural development as reflected in the meaning, organization, and impact of design and planning at garden and community scales from the Neolithic period through the eighteen century. (Typically offered: Fall)

\section*{LARC 3413H. Honors History of Landscape Architecture I. 3 Hours.}

Analysis of the interaction between landscapes and human cultural development as reflected in the meaning, organization, and impact of design and planning at garden and community scales from the Neolithic period through the eighteenth century. Prerequisite: Honors candidacy. (Typically offered: Fall)
This course is equivalent to LARC 3413.

\section*{LARC 3724. Ecological Design and Construction: Water and Drainage. 4} Hours.
Introduces water-related issues as encountered and addressed by landscape architects. Students will understand, apply, and design infrastructure such as retention/detention ponds, bioswales, and constructed wetlands. Technical documentation methods as a means of conveying design intent are included. Prerequisite: LARC 2714. (Typically offered: Fall)
LARC 3734. Sustainable Design and Construction: Material and Methods of Assembly. 4 Hours.
Introduces students to issues in material selection including properties, construction techniques, practical considerations in material use and subsequent implications and effects on the built environment. Material use and human experience are also explored. Technical documentation methods as a means of conveying design intent are included. Prerequisite: LARC 3724. (Typically offered: Spring)
LARC 3914. Sustainable Design and Construction: Remediation and Plants on Structure. 4 Hours.
Introduces particular strategies and techniques of plant use in the built environment. Potential topics include green infrastructure, site, soil, and water remediation techniques, and structural considerations of planting on structure. (Typically offered: Fall)
LARC 402V. Special Studies. 1-6 Hour.
Individual or group study and practicum involving landscape design, planning and management, history and environmental analysis. (Typically offered: Irregular) May be repeated for degree credit.

\section*{LARC 402VH. Honors Special Studies. 1-6 Hour.}

Individual or group study and practicum involving landscape design, planning and management, history and environmental analysis. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to LARC 402 V .

\section*{LARC 4033. Landscape Architecture Theory. 3 Hours.}

Examination of historic and current theories in landscape architecture and planning to develop critical judgement. Seminar format includes readings and case studies in issues such as social and environmental justice. Prerequisite: LARC 3413 and LARC 4413 or instructor consent. (Typically offered: Summer)

\section*{LARC 4033H. Honors Landscape Architecture Theory. 3 Hours.}

Examination of historic and current theories in landscape architecture and planning to develop critical judgement. Seminar format includes readings and case studies in issues such as social and environmental justice. Prerequisite: LARC 3413 and LARC 4413 or instructor consent. (Typically offered: Fall)
This course is equivalent to LARC 4033.
LARC 4123. Urban Form Studies. 3 Hours.
The examination of urban, village, and suburban form and its influencing forces. Includes study of cultural forces, technological developments, and physical shape, scale, and materials that define urban areas. Required field trip component of study abroad. Prerequisite: LARC 3413. (Typically offered: Summer)
LARC 4311. Advocacy and Theory Module: Capstone. 1 Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 4385. (Typically offered: Fall)

LARC 4321. Advocacy and Theory Module: Comprehensive. 1 Hour.
Students explore theories and history and their implementation to increase understanding of concurrent design studio topics. Students develop advocacy capacities through communication, collaboration and skills through workshops, readings, stakeholder engagement and discussions. Students form rationales for design and personal disposition, while gaining knowledge to advocate for the profession and discipline. Corequisite: LARC 4395. (Typically offered: Spring)
LARC 4385. Landscape Architecture Design VIII: Capstone. 5 Hours.
Topic based, service learning studio that blends faculty research interests with student initiative and the potential for collaboration. This studio builds on the broad foundation of previous coursework while developing a design specialization through which students can advocate for both the profession and the communities they serve. Corequisite: LARC 4311. (Typically offered: Fall)
LARC 4395. Landscape Architecture Design IX: Comprehensive. 5 Hours.
Summative studio that requires the student to demonstrate landscape architectural design competency through a multiscalar approach that utilizes various resolutions to address critical, multidimensional problems. Corequisite: LARC 4321. (Typically offered: Spring)

\section*{LARC 4413. History of Landscape Architecture II. 3 Hours.}

Critical study and analysis of landscape architecture from nineteenth century to the present, with an emphasis on the philosophies, design and planning theories, and social conditions that have influenced the form of gardens, parks, and cities. (Typically offered: Spring)

\section*{LARC 4413H. Honors History of Landscape Architecture II. 3 Hours.}

Critical study and analysis of landscape architecture from nineteenth century to the present, with an emphasis on the philosophies, design and planning theories, and social conditions that have influenced the form of gardens, parks, and cities. Prerequisite: Honors candidacy. (Typically offered: Spring)
This course is equivalent to LARC 4413.

\section*{LARC 4523H. Landscape Architecture Honors Thesis. 3 Hours.}

Development and production of an honors thesis proposal and thesis. Required for all landscape architecture honors students. Prerequisite: Honors standing. (Typically offered: Irregular)

\section*{LARC 4753. Incremental Sprawl Repair. 3 Hours.}

Exploration of the causes, manifestation and results of suburban sprawl on the built environment. Design and planning strategies linked to landscape, urbanism, policy, transportation, resource-conservation, ecology, and social structures are proposed. Emphasis is placed on combining traditional and cutting edge methods for repairing sprawled cities and regions. Prerequisite: 4th or 5th year student or instructor approval. (Typically offered: Irregular)
LARC 4753H. Honors Incremental Sprawl Repair. 3 Hours.
Exploration of the causes, manifestation and results of suburban sprawl on the built environment. Design and planning strategies linked to landscape, urbanism, policy, transportation, resource-conservation, ecology, and social structures are proposed. Emphasis is placed on combining traditional and cutting edge methods for repairing sprawled cities and regions. Prerequisite: 4th or 5th year student or instructor approval. (Typically offered: Irregular)
This course is equivalent to LARC 4753.

\section*{LARC 4811. Landscape Architecture Interns. 1 Hour.}

Supervised work experience that may include a combination of design, planning, operations, and management procedures in approved design, design/build, government, or non-profit organization. Exposure to a wide range of job tasks and project types. Summative outcomes include a reflection essay and a portfolio of internship work. Prerequisite: LARC 3375 and LARC 3914. (Typically offered: Summer)

\section*{LARC 4853. Latin American Landscapes. 3 Hours.}

This course studies the shaping of urban Latin American Landscapes by investigating, problematizing, and analyzing their diverse social, cultural, economic, and environmental conditions as reflected in the built realm. The main scope of study is the conception, origins, meaning, function, and performance of public spaces and landscapes in the continent. (Typically offered: Spring)
This course is cross-listed with LALS 4853.
LARC 5053. Historic Landscape Preservation. 3 Hours.
Survey of historic preservation as a profession and the emerging cultural landscape preservation movement. Introduction to preservation principles as described by the Secretary of the Interiors Standards and Guidelines. Analysis of case studies will reinforce basic philosophies and introduce preservation approaches. Prerequisite: LARC 3413 and LARC 4413. (Typically offered: Irregular)

LARC 5493. Environmental Land Use Planning. 3 Hours.
Investigation of the relationship between development, stewardship and land use on the city and regional scales. Natural resource systems, public policies, regional economics, and social contexts are investigated as informers of environmental planning and design decisions. Prerequisite: Junior standing or instructor approval. (Typically offered: Spring)

\section*{LARC 5493H. Honors Environmental Land Use Planning. 3 Hours.}

Investigation of the relationship between development, stewardship and land use on the city and regional scales. Natural resource systems, public policies, regional economics, and social contexts are investigated as informers of environmental planning and design decisions. Prerequisite: Junior and honors standing, or instructor approval. (Typically offered: Spring)
This course is equivalent to LARC 5493.

\section*{LARC 5613. Landscape Architectural Professional Practice. 3 Hours.}

Review of professional and disciplinary responsibilities and related aspects (including health, safety, and welfare issues) of private, public and non-profit landscape architectural practice. (Typically offered: Fall)

LARC 5613H. Honors Landscape Architectural Professional Practice. 3 Hours.
Review of professional and disciplinary responsibilities and related aspects (including health, safety, and welfare issues) of private, public and non-profit landscape architectural practice. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to LARC 5613.

\section*{Latin (LATN)}

\section*{Courses}

LATN 1003. Elementary Latin I. 3 Hours.
The rudiments of classical Latin, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability. (Typically offered: Fall)

\section*{LATN 1013. Elementary Latin II. 3 Hours.}

A continuation of the rudiments of classical Latin, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability. Prerequisite: LATN 1003 or GREK 1003, or equivalent. (Typically offered: Spring)

\section*{LATN 2003. Petronius' Satyricon. 3 Hours.}

Development of reading skills through selections from Satyricon, and an introduction to imperial history and culture through critical study of the novel in translation. Prerequisite: LATN 1013 or equivalent. (Typically offered: Fall)

\section*{LATN 2013. Catullus. 3 Hours.}

Development of reading skills through selections from Catullus' poems, and an introduction to the culture and history of the late republic through critical study of Catullus in translation and secondary works. Prerequisite: LATN 2003 or equivalent. (Typically offered: Spring)

\section*{LATN 3003. Virgil and Ovid. 3 Hours.}

Selections from the Aeneid and/or the Metamorphoses, and an introduction to Roman literary history through the critical study of these works in translation. Prerequisite: LATN 2013 or equivalent. (Typically offered: Fall)

\section*{LATN 3013. Caesar. 3 Hours.}

Selected readings from Caesar's commentaries on Gallic or Civil Wars, and an overview of Republican political and military history through the critical study of the commentaries in translation and secondary works. Prerequisite: LATN 3003 or equivalent. (Typically offered: Spring)

LATN 3063. Intensive Elementary Latin Reading. 3 Hours.
Overview of Latin grammar, vocabulary and syntax, leading to reading prose texts. For undergraduates who want short, intensive introduction to Latin and graduate students working towards reading proficiency. Successful completion fulfills graduate student research reading proficiency requirement. LATN 3063 alone cannot fulfill the Foreign Language requirement in Fulbright College. No credit for this course and LATN 1003 and/or LATN 1013. (Typically offered: Summer)

LATN 4003. Roman History. 3 Hours.
Selections from Sallust, Livy, Tacitus, or Suetonius. An overview of Roman Historiography through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 4013. Roman Satire. 3 Hours.}

Selections from the satires of Horace, Juvenal, Persius, or Seneca. An overview of Roman humor and the genre of satire through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 4023. Roman Didactic Epic. 3 Hours.}

Selections from Virgil's Georgics, Lucretius' De Rerum Natura, or Manilius' Astronomica. An overview of Roman philosophical poetry through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 4033. Roman Drama. 3 Hours.}

Selections from Plautus, Terence, or Seneca. An overview of Roman theater through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 4043. Roman Elegy. 3 Hours.}

Selections from Propertius, Tibullus, or Ovid. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 4073. Roman Novel. 3 Hours.}

Selections from Petronius or Apuleius. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 4083. Roman Oratory. 3 Hours.}

Selections from the orations and theoretical works of Cicero, Seneca the Elder, or Quintilian. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{LATN 4093. Roman Philosophy. 3 Hours.}

Selections from the philosophical works of Cicero or Seneca. An overview of Roman philosophy through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

LATN 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Irregular) May be repeated for degree credit.

\section*{LATN 5003. Roman History. 3 Hours.}

Selections from Sallust, Livy, Tacitus, or Suetonius. An overview of Roman Historiography through the critical study of complete works in translation and secondary works. Graduate degree credit will not be given for both LATN 4003 and LATN 5003. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 5013. Roman Satire. 3 Hours.}

Selections from the satires of Horace, Juvenal, Persius, or Seneca. An overview of Roman humor and the genre of satire through the critical study of complete works in translation and secondary works. Graduate degree credit will not be given for both LATN 4013 and LATN 5013. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 5023. Roman Didactic Epic. 3 Hours.}

Selections from Virgil's Georgics, Lucretius' De Rerum Natura, or Manilius' Astronomica. An overview of Roman philosophical poetry through the critical study of complete works in translation and secondary works. Graduate degree credit will not be given for both LATN 4023 and LATN 5023. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 5033. Roman Drama. 3 Hours.}

Selections from Plautus, Terence, or Seneca. An overview of Roman theater through the critical study of complete works in translation and secondary works. Graduate degree credit will not be given for both LATN 4033 and LATN 5033. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 5043. Roman Elegy. 3 Hours.}

Selections from Propertius, Tibullus, or Ovid. An overview of the genre through the critical study of complete works in translation and secondary works. Graduate degree credit will not be given for both LATN 4043 and LATN 5043. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular)

\section*{LATN 5063. Roman Pastoral and Lyric. 3 Hours.}

Selections from Catullus, Virgil's Eclogues, Horace's Odes, or Calpurnius Siculus. An overview of the two genres through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{LATN 5073. Roman Novel. 3 Hours.}

Selections from Petronius or Apuleius. An overview of the genre through the critical study of complete works in translation and secondary works. Graduate degree credit will not be given for both LATN 4073 and LATN 5073. (Typically offered: Irregular)

\section*{LATN 5083. Roman Oratory. 3 Hours.}

Selections from the orations and theoretical works of Cicero, Seneca the Elder, or Quintilian. An overview of the genre through the critical study of complete works in translation and secondary works. Graduate degree credit will not be given for both LATN 4083 or LATN 5083. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{LATN 5093. Roman Philosophy. 3 Hours.}

Selections from the philosophical works of Cicero or Seneca. An overview of Roman philosophy through the critical study of complete works in translation and secondary works. Graduate degree credit will not be given for both LATN 4093 and LATN 5093. Prerequisite: LATN 3013 or equivalent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

LATN 575V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Irregular) May be repeated for degree credit.

\section*{Latin American and Latino Studies (LALS)}

\section*{Courses}

LALS 2013. Introduction to Latin American and Latino Studies. 3 Hours.
Provides an interdisciplinary introduction to Latin America and the Latino United States. Drawing on Latin American and/or Latino literature, film, art, history, sociology, anthropology, and political science, this course examines the broad forces that have shaped the region and/or the U.S. Latino experience. (Typically offered: Fall and Spring)

LALS 3013. Special Topics in Latin American and Latino Studies. 3 Hours. Courses with a varying disciplinary focus on topics related to Latin American and Latino Studies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{LALS 3203. Colonial Latin America. 3 Hours.}

An introduction to the social, cultural, political and economic formation of Latin America, during the period from 1492 to the movements for independence. (Typically offered: Fall Odd Years)
This course is cross-listed with HIST 3203.
LALS 3213. Modern Latin America. 3 Hours.
An investigation of the varying courses of modernization in Latin America, covering popular revolution, urban populism and military dictatorship. (Typically offered: Spring Even Years)

This course is cross-listed with HIST 3213.

\section*{LALS 3253. The Latinx Image in Media. 3 Hours.}

Exploration of the image and experience(s) of Latinx populations in the United States as represented in visual and print media, including film, television, news journalism, and art. Topics related to US Latinx history, culture, politics, and socioeconomics will be examined in the analyses of these mediated depictions. (Typically offered: Irregular)
This course is equivalent to ENGL 3253

\section*{LALS 3283. U.S. Latinos and Latinas through Film. 3 Hours.}

This course will examine the portrayal of U.S. Latinos and Latinas in Hollywood films and how those images have changed over time. While coverage will extend to the early years of the twentieth century, the chosen films will place particular emphasis on the century's second half, from the Cold War to the modern day. (Typically offered: Spring)
This course is cross-listed with COMM 3283, HIST 3283.
LALS 3303. U.S. Immigration History. 3 Hours.
Examines the migration of ethnic groups into the United States from geographical areas that include Europe, Asia, Africa, and Latin America. Special emphasis will be given to cultural history, and will trace the impact of industrialization, urbanization, class formation, and popular culture on various ethnic groups. (Typically offered: Irregular)
This course is cross-listed with HIST 3303
LALS 3313. Latinos and Latinas in the U.S.. 3 Hours.
Examines the emergence and growth of the Latino population of the United States. A broad survey of the Latino experience will complement more specific case studies focusing on cultural identity and the generational process of acculturation into the American mainstream. (Typically offered: Fall)

This course is cross-listed with HIST 3313.

\section*{LALS 3373. Rise of the American Empire: War, Migration and Expansion, 1789-1917. 3 Hours.}

Explores the history of U.S. expansion and imperialism from the nation's founding to the start of World War I. It proceeds both chronologically and thematically, considering the evolution of U.S. imperialism and its various manifestations territorial, political, economic, and cultural. (Typically offered: Irregular) This course is cross-listed with HIST 3373.

LALS 3543. Topics in U.S. Latino/Latina Literature and Culture. 3 Hours. The study of works of U.S. Latino/Latina literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to ENGL 3543.

\section*{LALS 3553. Religion in Latin America. 3 Hours.}

Examines contemporary implications of Latin America's unique religious heritage. An exploration of multiple Latin American religious traditions, with sustained focus on key theoretical concerns: conversion, vernacular vs. orthodox expressions, the blending of indigenous and European cosmologies, devotion and ritual, and the articulation of ethnic, gendered, and religious identities. (Typically offered: Irregular) This course is cross-listed with ANTH 3553.

LALS 399VH. Honors Thesis. 1-6 Hour.
Honors thesis research hours. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

LALS 4003. Latin American Studies Colloquium. 3 Hours.
An interdepartmental colloquium with an annual change in subject of investigation, required of all Latin American studies majors. Prerequisite: Sophomore standing for Latin American and Latino Studies majors. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{LALS 4003H. Honors Latin American Studies Colloquium. 3 Hours.}

An interdepartmental colloquium with an annual change in subject of investigation. Prerequisite: Sophomore standing and honors standing for Latin American and Latino Studies majors. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to LALS 4003.
LALS 4263. Identity and Culture in the U.S.-Mexico Borderlands. 3 Hours. An exploration of the interplay between Latino/a, Mexican, Anglo, and Native American identities and cultures along the U.S.-Mexico border. Course examines identity formation, hybridity, social tension, marginalization, race and gender, from an anthropological perspective, paying special attention to the border as theoretical construct as well as material reality. (Typically offered: Irregular)
This course is cross-listed with ANTH 4263.
LALS 4443. Frontiers and Borderlands in Colonial Latin America. 3 Hours. This course examines frontiers and borderlands in colonial Latin America and focuses on the regions of California, New Mexico, Texas, Brazil, and the Río de la Plata. It demonstrates that frontiers and borderlands are defined by the absence of a hegemonic European power and associated with the prevalence of Indigenous norms. (Typically offered: Irregular)
This course is cross-listed with HIST 4443.
LALS 4523. Studies in U.S. Latino/Latina Literature and Culture. 3 Hours. The study of works of U.S. Latino/a literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. At least one major research paper will be required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit. This course is equivalent to ENGL 4523.

LALS 4713. Women, Gender, and Sexuality in Colonial Latin America. 3 Hours. This course examines women, gender, and sexuality in colonial Latin America. It explores the lives of indigenous, Spanish, African, and mixed-race women from all social ranks. A central question is: does the current status of women in Latin America stem from a colonial legacy of gender oppression and sexual repression? (Typically offered: Irregular)
This course is cross-listed with HIST 4713.

LALS 4743. The Cold War in Latin America: Revolutions, Violence, and Politics. 3 Hours.
This course will trace the rise of the ideological and political struggles over social and economic development and the security regimes designed to thwart socialist revolution and political mobilization. The influence of the United States in Latin American security regimes and "containment" activities will receive special attention. (Typically offered: Irregular)
This course is cross-listed with HIST 4743.
LALS 4813. Africans and Slavery in Colonial Latin America. 3 Hours.
Explores the diverse experiences of slaves and free Blacks in colonial Spanish and Portuguese America from 1500 to around 1888, demonstrating that bondage and the practice of African slavery was a pillar of political authority in colonial Latin America. (Typically offered: Irregular)
This course is cross-listed with AAST 4813, HIST 4813.

\section*{LALS 4853. Latin American Landscapes. 3 Hours.}

This course studies the shaping of urban Latin American Landscapes by investigating, problematizing, and analyzing their diverse social, cultural, economic, and environmental conditions as reflected in the built realm. The main scope of study is the conception, origins, meaning, function, and performance of public spaces and landscapes in the continent. (Typically offered: Spring)
This course is cross-listed with LARC 4853.

\section*{Law (LAWW) Courses}

LAWW 400V. Entertainment Law. 1-6 Hour.
Examines the legal principles and relationships of the entertainment industry, with a primary emphasis on the music industry; provides an introduction to the practice of entertainment law and the negotiation of entertainment contracts; highlights a variety of legal and practical issues that arise when representing clients in the entertainment industry. (Typically offered: Irregular)

\section*{LAWW 4013. Legal Research \& Writing I. 3 Hours.}

An introduction to the special problems posed by the legal analysis and the expression of the results of that process. The primary emphasis will be on basic legal analysis techniques, basic legal writing skills, and proper citation form. Students will complete a series of writing assignments. (Typically offered: Fall)

\section*{LAWW 4024. Contracts. 4 Hours.}

Formation and enforcement by litigation and commercial arbitration of commercial and family agreements. Mutual assent or consideration; third-party beneficiaries; assignments; joint obligation; performance; anticipatory breach; discharge of contractual duties; and the Statute of Frauds. (Typically offered: Irregular)

\section*{LAWW 4054. Property. 4 Hours.}

This course deals with the creation and transfer of rights over property. The primary emphasis will be on entitlements in land. Subject to variations among professors, topics will include the rights of landowners to exclude others, estates in land, coownership, landlord-tenant law, real estate and personal property transactions, and servitudes. (Typically offered: Irregular)

\section*{LAWW 406V. Upper Level Writing. 1-3 Hour.}

Second year students must take at least one 2 or 3 -hour course in upper level research and writing which has been certified by the faculty as an Upper Level Writing course. The course, which is constructed around a special topic or specific area of the law, focuses on writing or drafting. Writing component accounts for at least \(2 / 3\) of the final grade. Prerequisite: LAWW 4013 and LAWW 4113. (Typically offered: Fall, Spring and Summer) May be repeated for up to 10 hours of degree credit.

\section*{LAWW 4074. Criminal Law. 4 Hours.}

Deals with the questions of what conduct society punishes through a criminal code and of the appropriate punishment for the forbidden conduct. In this context the course includes an analysis of the theories of punishment, the definitions of various crimes, the defenses available to one charged with criminal conduct, and the limitations placed by the Constitution on governmental power in the criminal law area. Throughout the course, special emphasis is placed on the legislature's role in creating statutes alongside the judiciary's corresponding role in interpreting those statutes. (Typically offered: Irregular)

\section*{LAWW 4104. Civil Procedure. 4 Hours.}

Study of the process of civil litigation from preliminary matters such as court selection and jurisdiction, through joinder of parties and discovery techniques, to disposition of cases and finality of judgments. Some attempt is made to cover the antecedents of modern procedure; where appropriate, suggestions for reform are developed in class discussion. Emphasis is on the Federal Rules of Civil Procedure. (Typically offered: Fall)

\section*{LAWW 4113. Legal Research \& Writing II. 3 Hours.}

An introduction to persuasive writing techniques and intermediate computer research. Student will write a full appellate brief and deliver an oral argument. Prerequisite: LAWW 4013. (Typically offered: Spring)

LAWW 4144. Torts. 4 Hours.
An introduction to basic principles of liability for harm to persons and property. The course analyzes various categories of tortious conduct, defenses and immunities, damages, and underlying principles and policies justifying liability. (Typically offered: Irregular)

\section*{LAWW 4173. Criminal Procedure: Investigations. 3 Hours.}

Generally this course focuses on: (1) criminal investigation practices, more precisely, contacts between the police and persons suspected or accused of crime, at the time of or shortly before and after arrest; (2) the federal constitutional rights of suspects in their contacts with the police or, stated another way, the federal constitutional restrictions (or lack of restrictions) on the police, based on the 4th, 5th, 6th, and 14th amendments; (3) the exclusionary rule, which limits the admissibility of evidence obtained by the police from suspects in violation of their federal constitutional rights; and (4) United States Supreme Court jurisprudence. (Typically offered: Irregular)

\section*{LAWW 4182. Upper Level Writing - Business Drafting. 2 Hours.}

ULW-Business Drafting is an advanced writing course that takes students through a number of writing assignments. It is geared at teaching students to produce prescriptive writing, as oppose to predicting how the law would apply or persuading a reader about how the law should apply. This class therefore requires students to use information that they have gained in other classes, notably Business Organizations, and use it in drafting appropriate documents ranging from organizational forms, to documents describing how a business is to be operated, to commercial contracts. Students will also work on professionally communicating with various constituents such as clients and other attorneys about the contents of and rationale behind drafting choices in these documents. Prerequisite: LAWW 4294. (Typically offered: Irregular)

\section*{LAWW 4294. Business Organizations. 4 Hours.}

This is an introductory, survey course focusing primarily on the law applicable to closely held businesses, including agency rules and the law applicable to general and limited partnerships, LLPs and LLLPs, limited liability companies, and corporations. (Typically offered: Irregular)

\section*{LAWW 4442. Law \& Accounting. 2 Hours.}

Study of basic accounting principles and their importance to attorneys engaged in business related activities. Topics covered include the fundamental accounting equation, the nature of accrual accounting, understanding financial statements, and accounting for assets and liabilities. Also a review of basic principles associated with financial statement analysis and valuation principles, including the time value of money. Intended for students with little or no business training, and may not be taken for credit by students who have previously earned 3 or more hours of undergraduate or graduate credit in accounting courses. (Typically offered: Irregular)

\section*{LAWW 445V. Mastering Legal Analysis. 1-2 Hour.}

In this course students will revisit and expand upon the core principles of legal analysis. This course will be based on an active-learning model with a focus on practicing legal analysis under time-pressured conditions. The professor will provide extensive individualized feedback on exercises. The materials for this course will largely be drawn from the written portions of the bar exam (both Arkansas and UBE). (Typically offered: Irregular)

\section*{LAWW 500V. Special Topics. 1-18 Hour.}

Included under this heading will be a variety of variable credit law courses taught by law faculty on topics that are not included elsewhere in the curriculum. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

\section*{LAWW 5013. Professional Responsibility. 3 Hours.}

Role of the lawyer as counselor, advocate, and public servant; obligation to society of the individual lawyer and the profession as a whole; ethical problems of the profession; representation of the unpopular cause and the desirable client, lawyers' obligation to law reform; lawyer and the press; the lawyer in public service; the aspects of law office management. (Typically offered: Irregular)

\section*{LAWW 502V. Remedies. 3-4 Hour.}

Covers equity (jurisdiction and powers of courts of equity, injunctions, including adequacy of legal remedies, balancing of equities, interests protected, and defenses), damages (compensatory, exemplary, and nominal damages; direct and consequential damages; mitigation; special application in contract and tort actions) and restitution (relief afforded by the judicial process, to prevent unjust retention of benefits). (Typically offered: Irregular)

\section*{LAWW 5031. Basic Title Examination. 1 Hour.}

Basic Title Examination is a course designed to teach students how to examine abstracts of title and other compilations of public real estate records to determine ownership and marketability of surface title. The course utilizes the theoretical understanding gained from traditional substantive law courses including Property and Decedents? Estates but teaches applied practical skills not usually taught in those courses. (Typically offered: Fall)

\section*{LAWW 5041. Oil and Gas Title Examination. 1 Hour.}

Oil and Gas Title Examination is a course designed to teach students who have successfully completed Basic Title Examination how to use abstracts of title and other compilations of public real estate records to determine ownership and marketability of minerals, including oil and gas, and oil and gas leasehold, royalty, overriding royalty and other similar interests. The course utilizes the theoretical understanding gained from traditional real property and oil and gas law courses, but teach practical skills not currently taught in the usual classroom setting. Pre- or Corequisite: LAWW 5031. (Typically offered: Fall)

\section*{LAWW 5053. Energy Law. 3 Hours.}

Energy law governs the life cycle of energy resources, from resource development and generation of electricity to the end use in homes, businesses, and cars. In this growing area of practice, energy lawyers represent energy companies, public utilities, government agencies, and non-profit organizations. The course provides a survey of how different sources of energy - hydropower, oil and natural gas, coal, nuclear energy, and renewables - are regulated. Through this survey, we will consider important policy issues such as public utility regulation and the role of markets; the federal-state balance; and environmental impacts and the future of clean energy. (Typically offered: Irregular)

\section*{LAWW 5073. Family Law. 3 Hours.}

Devoted primarily to the problems generated by family relationships. There is a large section on formation and dissolution of marriage. Substantial time is also given to paternity and legitimacy, obligations toward and of children, custody, adoption, guardianship, general property law as it is affected by family relationships, and divorce and custody in the federal system (focusing primarily on enforceability of decrees in one state by courts sitting in another state). (Typically offered: Irregular)

LAWW 5083. First Amendment. 3 Hours.
An intensive examination of the legal issues arising under the First Amendment to the United States Constitution, with an emphasis on basic free speech doctrines and the dilemmas posed by interplay between the free exercise and establishment clauses. Prerequisite: LAWW 5114. (Typically offered: Irregular)

\section*{LAWW 5092. Banking \& Creditors' Rights Litigation. 2 Hours.}

Students in this course will learn how to protect and enforce the creditors' rights through litigation by drafting demand letters, petitions, motions, settlement agreement, proposed judgments, and other filings before and after bankruptcy. Students will simulate the representation of a creditor with a defaulted loan and will be expected to enforce the applicable instruments within the Model Rules of Professional Conduct as well as the strictures of the Bankruptcy Code. Through the simulated filings and oral arguments, students will be introduced to enforcement and bankruptcy concepts and will be better prepared to practice in the creditors' rights realm. (Typically offered: Fall and Spring)

\section*{LAWW 510V. Law: Study Abroad. 1-6 Hour.}

Open to law students studying abroad in officially sanctioned programs. (Typically offered: Irregular)

\section*{LAWW 5114. Constitutional Law. 4 Hours.}

An introduction to the basic principles of constitutional law and to current constitutional doctrines and problems. The primary focus will be on the structure of the federal system and on the rights of individuals under the Due Process and Equal Protection clauses of the Fifth and Fourteenth Amendments. (Typically offered: Spring)

\section*{LAWW 5122. ABOTA Trial Practice Lecture Series. 2 Hours.}

Lecture series by experienced and prominent Arkansas trial attorneys, lecturing on case evaluation, jury instructions, witness preparation, scheduling orders, courtroom civility, voir dire, opening statement, direct and cross-examination, objections, and closing arguments. (Typically offered: Spring)

\section*{LAWW 5133. Real Estate Transactions. 3 Hours.}

Focuses on real estate transfer, real estate finance and real estate development. Issues relating to the sale of land and conveyances of real property, mortgages and the planning, financing, constructing and marketing of modern real estate developments are treated. (Typically offered: Irregular)

\section*{LAWW 5163. Administrative Law. 3 Hours.}

Course is constructed around Federal materials, but with some state references. Considers the origin and constitutional basis for the administrative process; executive and legislative controls with particular emphasis upon the judicial "control" of the administrative process (delegations, procedural and substantive due process, judicial assistance and enforcement and review of administrative decisions). (Typically offered: Irregular)

\section*{LAWW 5172. Disability Law. 2 Hours.}

This study of U.S. disability law begins by defining "disability" under the Constitution, federal statutes, and court decisions. The ADA, the Rehab Act, and other federal/ state disability laws will be studied and applied to employment issues, public accommodations, governmental services/programs, education, housing and independent living, and health care. Concepts like discrimination, disparate treatment/impact, reasonable accommodations, physical/mental impairments, undue hardships, architectural barriers, harassment, retaliation, licensing, and many others will be examined. In addition, the Social Security Act's Disability Insurance Benefits (DIB) and Supplemental Security Insurance. (Typically offered: Irregular)

\section*{LAWW 518V. Banking Law. 2-3 Hour.}

This class is designed to provide students with a detailed overview of banking law. Subjects we will cover include the history of banking regulation, the business of banking, banking regulation, bank assets, consumer lending, bank liabilities and capital, supervision, expansion and mergers, trust and fiduciary standards, capital markets, derivatives, and international banking. (Typically offered: Irregular)

\section*{LAWW 5191. Deposition Practice. 1 Hour}

The focus of this class is to teach how to take, defend and use depositions in civil cases. There will be extensive study of Rules 28-32 of the Arkansas and Federal Rules of Civil Procedure. Additionally, the State and Federal cases applicable to depositions will be discussed and reviewed. Discussion on the practicality of a deposition such as the timing, scheduling and expenses in depositions. Students will observe parts of several video depositions followed by a discussion. (Typically offered: Irregular)

LAWW 5213. Business Lawyering Skills. 3 Hours.
Provides practical skills instruction through exercises that simulate business client interviews, negotiations, mediation, and arbitration. Multiple written projects are also involved. Prerequisite: LAWW 4294. (Typically offered: Irregular)

\section*{LAWW 5252. International Commercial Arbitration. 2 Hours.}

This course will survey the history, purposes, and processes of international commercial arbitration. (Typically offered: Irregular)

\section*{LAWW 527V. Law and Economics. 2-3 Hour.}

Law and Economics examines legal and policy issues by critically analyzing whether legal rules provide the greatest good to the greatest number of people. The class offers an introduction to basic economic principles, while providing a useful review of many core law school and bar exam subjects. (Typically offered: Irregular)

\section*{LAWW 5293. Cyber Crime. 3 Hours.}

This course examines the law governing computer crime and the limits on law enforcement surveillance. We consider substantive crimes such as hacking, identity theft, economic espionage, and online threats before we examine the Fourth Amendment, the Wiretap Act, and other limits on law enforcement. (Typically offered: Irregular)

\section*{LAWW 5313. Payment Systems. 3 Hours.}

This course summarizes and explains the fundamental law applicable to a broad variety of current payment systems. Coverage includes issues of liability, transfer, holder in due course status, and check collection applicable to negotiable instruments (checks, notes, drafts) governed by UCC Articles 3 and 4, as well as letters of credit and documents of title governed by UCC Articles 5 and 7. The course further examines the rights, obligations, and federal protection applicable to credit and debit cards. Finally, it addresses recent legal developments in regard to a variety of electronic fund transfers, prepaid cards and digital currencies. (Typically offered: Irregular)

\section*{LAWW 5333. Health Policy. 3 Hours.}

The focus will be on policy issues facing the American health care system. We will discuss health policy, policy making, and the law. The American health care delivery system will be studied -- including its funding mechanisms (like Medicare, Medicaid, and health insurance) -- and compared to other countries. Public health institutions and systems will be explored. The Affordable Care Act will be reviewed in depth. Social health determinants will be examined, along with ways attorneys can intervene to "treat" important social issues affecting health. Individual rights to health care in the U.S. will be discussed, as well as specific rights related to gender, abortion, genetic research, suicide, and end-of-life issues. Discrimination in health care will be examined. Medical malpractice reform will be debated. Public health issues like FDA drug regulation, obesity, opioid abuse, vaccinations, and medical marijuana will be surveyed. Health care quality policy and the law will be reviewed. Additional topics will be added as time allows and as current events dictate. (Typically offered: Irregular)

\section*{LAWW 536V. Securities Regulation. 2-3 Hour.}

This course explores the federal regulation of securities, with emphasis on the Securities Act of 1933 and the Securities Exchange Act of 1934. Topics examined include: the definition of a securities, public company disclosures, enforcement issues, antifraud rules, and insider trading liability, public offering mechanics, and exempt offerings. Prerequisite: LAWW 4294. (Typically offered: Irregular)

\section*{LAWW 5372. Immigration Law. 2 Hours.}

A study of the immigration, nationality, and naturalization laws of the United States; discussion of policy issues relating to migration, refugees, asylum, deportation, and citizenship issues. The Course will also explore pop culture references to immigration issues and examine the truths and fallacies of what is presented for entertainment purposes. (Typically offered: Irregular)

LAWW 5391. Effective Corporate Compliance. 1 Hour.
This course provides a high-level overview of the importance and structure of an effective compliance program within a business, with the purpose of mitigating legal risk. The Federal Sentencing Guidelines specify the elements of an effective compliance program, and some federal agencies like have interpreted these or implemented them through regulation. Corporations are facing an ever-changing regulatory environment in a multitude of sectors, and this course prepares students with a foundational level of how compliance professionals build effective compliance programs, using a relevant fact pattern to bring the course material to life. Students who choose to work for a corporation (even in the legal department) will need to be familiar with how that corporation implements the elements of an effective compliance program, so as to effectively defend or advise the corporation. (Typically offered: Irregular)

\section*{LAWW 5402. Legislation. 2 Hours.}

Law in the United States increasingly comes from written texts -- statutes ordinances, and administrative regulations. This course will introduce the primary tools that lawyers use when interpreting these texts. It will begin with an overview of various theories and methodological approaches to interpretation. Then it will turn to the ways that lawyers and courts discern the meaning of legal texts (including through canons of interpretation) and construe those texts in light of external sources of authority (including legislative history and other texts). At various points during the course, students will apply these tools to hypothetical and real-world problems. (Typically offered: Irregular)

\section*{LAWW 5413. Natural Resources Law. 3 Hours.}

This course examines the laws and policies governing the use of natural resources. Natural resources include forests, water, and wildlife, as well as hard rock minerals, coal, oil, and natural gas. We will discuss who owns these resources, how they are used or managed, and how their use is regulated. The course will also consider the laws governing management of public lands, such as national parks, monuments, and wilderness areas. Throughout the course, we will examine the values at stake in natural resource use and protection, the conflicts between public and private use, and the challenges inherent in natural resource management. (Typically offered: Irregular)

\section*{LAWW 5431. Jury Trial Strategies. 1 Hour.}

The goal of this class is to introduce students to the evaluation, preparation and prosecution of a jury trial. The class emphasizes properly evaluating the merits of a case early on and investigating the facts, parties and witnesses. The students will be asked to draft a complaint and an answer based on vignettes provided. Unlike other substantive law classes; this is very much a hands-on, how-to class. We will discuss in detail several "how to" procedures such as: Propounding discovery requests, making proper objections, making motions for directed verdict, preparing exhibits, proffering testimony, preparing jury instructions, making opening statements and closing arguments and how to make a proper record for appeal. All of these procedures will be supplemented with current precedent from the Arkansas Supreme Court and Court of Appeals and each step will be discussed within the confines of the Arkansas Rules of Professional Conduct. (Typically offered: Irregular)

\section*{LAWW 544V. Legal Operations. 2-3 Hour}

In this course students will learn about the operations principles 21st century legal entities are utilizing - and to which they are being held accountable. Topics will include: Strategic Planning, Financial Management, Vendor Management, Data Analytics, Technology, Change Management, Artificial Intelligence, Outside Counsel Selection and Management, as well as others. (Typically offered: Irregular)

LAWW 5451. Environmental Torts. 1 Hour.
The focus of this class is common law environmental torts resulting in property damage, including negligence, trespass, strict liability, and nuisance. Presented are the elements of those causes of action and a review of common environmental tort fact patterns. Also discussed are issues associated with environmental torts, such as imputed liability, and defenses. Review remedies for damage to property and individuals. (Typically offered: Irregular)

LAWW 547V. State and Local Government. 2-3 Hour.
As citizens, much of our interaction with the law is local. Local governments determine the location of our nearest grocery store, how high (or low) property taxes will be, whether to maintain a public library, how late bars can serve alcohol, and even whether it is lawful to keep a pet python. Local government activity is significant, immediate, and pervasive. Despite the importance of local government law and institutions, most law school courses focus only on federal and state sources of law with little or no mention of local government. This course aims to address this void by providing a useful overview of core legal doctrines affecting the structure, authority, financing, and liabilities of local government in the United States. The course also covers the theoretical and empirical research underlying those doctrines, and is structured to provide a broad understanding of local government relevant to most United States jurisdictions. (Typically offered: Irregular)

\section*{LAWW 548V. Privacy Law. 1-3 Hour.}

Information Privacy and Security Law will explore the principles underlying the emerging law of informational privacy in the context of significant U.S. data privacy legislation with relevant comparisons to certain international data privacy regimes.. Topics include the role of the FTC and state and federal laws. Regulations specific to children, healthcare, telemarketing, email, data breach and financial services will be addressed and discussion will touch on data analytics, facial recognition and other new technologies. (Typically offered: Irregular)

LAWW 550V. Wills, Trusts, and Estates. 1-4 Hour.
This is the study of the traditional areas of wills and trusts (intestate and testate succession). The trusts area includes both the private trust and the charitable trust. Taxation problems are not covered in depth but are instead reserved for the Federal Estate \& Gift Taxation course. (Typically offered: Irregular)

LAWW 5513. Labor Law. 3 Hours.
The right to organize; organization of labor unions; strikes; picketing; boycotts; collective bargaining; collective labor agreements and their enforcement; unfair labor practices by employers and by unions; the union member and his union; state labor relations legislation; the National Labor Relations Act and the Labor Management Relations Act. Not offered every year. (Typically offered: Irregular)

LAWW 5543. International Business Transactions. 3 Hours.
This class is designed as an introductory overview of the body of laws that govern international business transactions. Subjects we will cover include international intellectual property treaties, import and export regulations, international commercial agreements, international payment mechanics and terms, antidumping and countervailing measures, competition (antitrust) law in international business, international corporation formation, acquisition, reorganization, and regulation of operations, international trade and project finance, regulation of global corruption, international tax planning, and planning international commercial arbitration.
(Typically offered: Irregular)

\section*{LAWW 5583. Wrongful Convictions. 3 Hours.}

Wrongful Convictions will encompass a study of the substantive causes of wrongful convictions and the procedural mechanisms allowing for the litigation of actual innocence claims. The focus of this class is the methodology used to investigate and develop claims of actual innocence. During the course of the semester, students will review actual cases of wrongful convictions and processes necessary for exoneration. (Typically offered: Irregular)

LAWW 5600. Law Research Assistant. 0 Hours.
Law Research Assistant is a zero-credit course available to students who work with or under the supervision of a faculty member on a research project that contributes significantly to faculty research, course preparation or presentation, or other scholarly work for or under the direction of a faculty member. Except as otherwise approved by the supervising faculty member with the concurrence of the Associate Dean for Academic Affairs, only students who have successfully completed or are currently registered for Law 5622 Essential Legal Research may enroll. Students who are working on research with or under the direction of a faculty member must have the written pre-approval of the supervising faculty to be registered and must obtain from the Law School Registrar and complete and submit to the Registrar the course request form. (Typically offered: Fall, Spring and Summer)

\section*{LAWW 5613. Capital Punishment. 3 Hours.}

This course examines the death penalty in America. It considers whether we can ever justify imposing the death penalty and whether we can do so fairly. But we will focus on Supreme Court cases to understand how the death penalty works in practice. (Typically offered: Irregular)

LAWW 5622. Essential Legal Research. 2 Hours.
This course covers the strategies, techniques, books, and databases essential to perform cost-effective legal research necessary for the practice of law and to assist faculty members as research assistants. (Typically offered: Fall and Spring)

\section*{LAWW 5662. Mergers and Acquisitions. 2 Hours.}

This course examines the legal and business considerations involved in the purchase and sale of a business, including an in-depth look at various transactional structures and the implications for shareholder voting, appraisal rights, along with an extensive review of director duties at all stages of the deal. Pre- or Corequisite: LAWW 4294. (Typically offered: Irregular)

LAWW 567V. Nonprofit Organizations. 2-3 Hour.
This course examines issues relating to the organization, operation, governance, and dissolution of various nonprofit entities, including charitable and public benefit corporations. Topics covered include the regulation of charitable contributions and their solicitation, obtaining and protecting tax-exempt status, and political and business activities of nonprofit organizations. (Typically offered: Irregular)

\section*{LAWW 5692. Rule of Law Colloquium. 2 Hours.}

Course is about inquiry and exploration. Course covers the Foreign Corrupt Practices Act, the UK Bribery Act, and other anti-corruption initiatives. The context of why corruption exists and ways to address it, including through means other than legal prohibitions. (Typically offered: Irregular)

\section*{LAWW 5701. Baseball and the Law. 1 Hour.}

This course includes cases on the power of the commissioner; the taxes of a Dodger shortstop; antitrust law and Curt Flood; ownership of Barry Bond's home run ball \#73; negligence at Wrigley Field; removal jurisdiction and Pete Rose; publicity rights to the Babe; criminal law and the Black Sox; trademark law. (Typically offered: Irregular)

LAWW 5782. Introduction to Banking \& Creditors' Rights Litigation. 2 Hours. Students in this course will learn how to protect and enforce the creditors' rights through litigation by drafting demand letters, petitions, motions, settlement agreement, proposed judgments, and other filings before and after bankruptcy. Students will simulate the representation of a creditor with a defaulted loan and will be expected to enforce the applicable instruments within the Model Rules of Professional Conduct as well as the structures of the Bankruptcy Code. Through the simulated filings and oral arguments, students will be introduced to enforcement and bankruptcy concepts and will be better prepared to practice in the creditors' rights realm. (Typically offered: Irregular)

\section*{LAWW 5793. Arbitration. 3 Hours.}

Arbitration is an increasingly popular method of resolving civil disputes, including employment, securities regulation, construction, and insurance disputes. Although arbitration is the result of an agreement between parties, a developing legal regime governs its use. Federal and state laws such as the Federal Arbitration Act govern what disputes are covered by an arbitration agreement, when arbitration is prohibited, and whether a court can review the award. This course provides an overview of those laws and the court decisions interpreting them so that the students understand an area of law that they are likely to encounter in their varied careers. This course will also provide an opportunity to review important principles of contract law, conflicts of law, jurisdiction, and other subjects that will appear on the bar exam. (Typically offered: Spring)
LAWW 5803. NCAA Governance, Legislation, \& Compliance. 3 Hours.
This course examines NCAA governance and both the NCAA legislative and infractions process. As familiarity with the knowledge of the NCAA legislation becomes increasingly important within the college athletics industry, a purpose of the course is to examine the NCAA's operative bylaws (11-17). The course will incorporate NCAA infractions cases as a method to learn application of the legislation. An overarching objective is to increase appreciation of NCAA rules compliance yet encourage critical thought of both the infractions process and legislative content. The course also covers the NCAA's status as a private organization, the results of the fact that it is not a state actor, and Supreme Court cases including Alston, Board of Regents, and NCAA v. Tarkanian. (Typically offered: Fall and Summer)
This course is cross-listed with RESM 5803.

\section*{LAWW 581V. Regulation of Cryptotransactions. 1-3 Hour.}

This is an upper-level elective designed to introduce students to the regulatory environment in which cryptotransactions currently operate. While the focus is on U.S. law, international developments will also be mentioned more briefly. Class will start with an overview of terms and concepts, along with the history of money and blockchain developments. Then regulation of crypto as currency, as a commodity, and as a security under federal law will be covered. State laws and international law will illustrate a variety of alternative regulatory approaches. Taxation of crypto will not be covered in any depth. There are no pre-requisites. (Typically offered: Fall, Spring and Summer)

\section*{LAWW 5831. Arkansas Adoption Law. 1 Hour.}

Students will be introduced to adoption law, with the primary emphasis on the adoption code and practice in Arkansas. Topics addressed will include the statutory and case law, court procedure and practice, litigated cases, international adoptions, and juvenile cases. It is anticipated that students will remotely attend a local adoption hearing. Students will be asked to prepare a petition, decree and trial brief, and to deliver a ten (10) minute presentation on an assigned adoption topic. (Typically offered: Irregular)

\section*{LAWW 5841. Arkansas Equity. 1 Hour.}

The course will cover the fundamental elements of Arkansas equity and equitable remedies, including jurisdiction, injunctions, preliminary injunctions, contempt, specific performance, equitable defense, constructive trusts and equitable liens, mistake. (Typically offered: Irregular)

\section*{LAWW 5853. Constitutional and Impact Litigation. 3 Hours.}

This course focuses on litigating civil rights claims under 42 U.S.C. Section 1983, in lawsuits by individuals suing government officials for violations of federal constitutional rights. We will focus on constitutional claims as well as investigation, discovery, and ethics in constitutional and impact litigation. We will use an open source curriculum of Supreme Court cases, scholarship, and practitioner resources so that no textbook is required and meet remotely. (Typically offered: Summer)

LAWW 5861. Foreclosure Law. 1 Hour.
Students will be introduced to foreclosure law, with the primary emphasis on the statutes and practice in Arkansas. Topics addressed will include the statutory and case law, court procedure and practice, alternatives to foreclosure, and the impact of COVID on the mortgage industry. Students will be asked to prepare a complaint, and decree, and to deliver a ten (10) minute presentation on an assigned foreclosure topic. (Typically offered: Summer)

\section*{LAWW 5873. Lawyers as Leaders. 3 Hours.}

Leaders today face challenges of incredible breadth and complexity, and the problems we face as a society can only be solved by trained and committed leaders. The goal of this class is to offer you, as future lawyers and leaders, the guidance and encouragement to develop the skills and values that are essential to leaders and in the practice of law. The syllabus contains 13 learning outcomes. (Typically offered: Spring)

\section*{LAWW 5881. Arkansas Landlord Tenant Law. 1 Hour.}

The course will explore Arkansas landlord tenant law along with proposals for revision of the law. Topics covered will be the forcible entry and detainer statute, the security deposit statute, the failure to vacate statute, the residential landlord tenant act, and Arkansas's limitation on tort liability for landlords. Discussion on the federal laws governing HUD tenancies and the greater rights afforded in those tenancies. The course will discuss both theory and practice. (Typically offered: Irregular)

LAWW 5891. The Razorbacks and the Law. 1 Hour.
The topics to be covered include: Trademarks, the Freedom of Information Act, Employment Contracts, Privacy and Publicity, Judicial Disqualification, Civil Rights, Preliminary Injunctive Relief, Domestic Relations, Title IX. Each topic will be examined with materials arising from the University of Arkansas. (Typically offered: Irregular)

\section*{LAWW 5903. Post-Conviction Remedies. 3 Hours.}

Post-conviction Remedies covers what happens to a felony conviction after direct appeal. This course will cover topics including the post-conviction process, federal habeas corpus, the statute of limitations for filing both, litigating actual innocence, and clemency. Students will have a take-home final exam. (Typically offered: Irregular)

\section*{LAWW 5923. LEGAL AND POLITICAL ASPECTS. 3 Hours.}

An overview of major legislation affecting recreation and sports management professions; how to operate within these laws; and methods for influencing new legislation. Also discusses political aspects of professions both outside and inside government agencies. Note that the course is broken into four units: tort law and sports, contract law and sports, legislation regarding sports, and constitutional law and sports. (Typically offered: Spring)
This course is cross-listed with RESM 6533.
LAWW 599V. Debtor-Creditor Relations. 3-4 Hour.
Study of Article 9 of the Uniform Commercial Code and of the remedies of unsecured creditors. (Typically offered: Irregular)

LAWW 602V. Independent Legal Research. 1-3 Hour.
Independent legal research conducted under the supervision of faculty members. Ordinarily a student may not accumulate more than two semester hours of credit for Independent Legal Research. This cumulative maximum may be exceeded only by special permission of the dean, who in exceptional circumstances may approve a cumulative maximum credit of three semester hours of credit for Independent Legal Research. (Typically offered: Fall, Spring and Summer)

\section*{LAWW 603V. Federal Courts. 1-3 Hour.}

Focus is on essential aspects of federal court procedure, the scope and limits of federal judicial power, and the underlying principles of federalism and separation of powers. Topics will include federal court jurisdiction, the power of Congress to limit that jurisdiction, Supreme Court review of state court judgments, and abstention and justiciability doctrines. (Typically offered: Irregular)

LAWW 607V. Conflict of Laws. 2-3 Hour.
Study of the legal principles involved in problems which have connections with two or more states requiring a choice-of-law, choice-of-law in federal courts, and jurisdiction in multi-state situations. (Typically offered: Irregular)

\section*{LAWW 6093. Evidence. 3 Hours.}

Study of the rules of evidence under which trials are conducted; the methods by which items of evidence and admitted or excluded; relevancy, real evidence, testimonial proof, and hearsay and its exceptions. (Typically offered: Irregular)

\section*{LAWW 6103. Jurisprudence. 3 Hours.}

Studies of the ideas and methods of law, regardless of particular questions that might be resolved by the law. (Typically offered: Irregular)

LAWW 611V. Interschool Competition Team. 1-2 Hour.
Interschool Competition Team provides an avenue for outstanding student advocates to register their completion of a rigorous interschool competition for purposes of academic credit. Students may register for this credit after satisfying the standards for approval of non-graded credit for Interschool Competition Credit, as outlined in the University of Arkansas School of Law Board of Advocates Bylaws and relevant Bylaw and Academic Standards provisions, as promulgated by the Faculty. (Typically offered: Fall and Spring)

\section*{LAWW 6122. Private Equity Investing. 2 Hours.}

Will focus on the central issues related to private equity investing -- both from the view of the company seeking private equity investment as well as from the view of the private equity investor. The overarching general objective of the course is to teach students the skills and tools used in the private equity arena. More specifically, this is a "what, why and how" course that will require students to apply legal and analytical skills to advising clients on actual issues in transactions. (Typically offered: Irregular)

\section*{LAWW 6133. Antitrust Law. 3 Hours.}

Federal anti-trust laws and their relationship to concentrations of economic power in the contexts of monopoly mergers, price fixing, economic boycotts and discrimination, re-sale price maintenance, dealer franchises, and exclusive dealing. Comparative analysis of free enterprise market and government regulated industries. Recommended for second- and third-year students interested in business practice or government service, as well as social welfare, or students with an interest in the subject. (Typically offered: Irregular)

\section*{LAWW 6143. Oil and Gas. 3 Hours.}

Study of the law of oil and gas with emphasis on the interests that may be created in oil and gas, the rights of the landowner, provisions in the oil and gas lease, the rights of assignees, and legislation dealing with production and conservation. (Typically offered: Irregular)

LAWW 614V. Board of Advocates Credit. 1-4 Hour.
Members of the Board of Advocates may receive ungraded academic credit, to be awarded in the spring semester of the member's third year in law school, upon completion of duties for the fall and spring semesters. (Typically offered: Fall, Spring and Summer)

\section*{LAWW 615V. Elder Law. 1-2 Hour.}

Course covers the unique legal issues of the elderly including physical and mental characteristics of the elderly and how to adequately represent their needs; unique housing issues that progress from help at home to nursing home placement and how to pay for services with Medicaid and VA benefits; Medicaid and VA rules and planning for benefits; and the need for specific documents dealing with their impending incapacity, eventual death and passing with dignity. (Typically offered: Irregular)
LAWW 616V. Law Review Credit. 1-4 Hour.
Law review credit. (Typically offered: Fall, Spring and Summer)
LAWW 6173. Introduction to Intellectual Property Law. 3 Hours.
This is an overview course covering the basics of intellectual property law (IP law). Thus, this course focuses on the protection of proprietary rights in inventions, writings, creative expression, software, trade secrets, trade designations, and other intangible intellectual products by federal patent, copyright, trademark and unfair competition law, and by state trade secrecy and unfair competition law. The course aims to give students entering a general business or civil litigation practice an overview of the various intellectual property doctrines. The course is designed both for those who are interested in pursuing IP as a career, and those who are looking only for a basic knowledge of the subject. There are no prerequisites, and a scientific background is not required. J.D. students and non-law students are welcomed. (Typically offered: Irregular)

\section*{LAWW 618V. Journal of Food Law \& Policy Credit. 1-5 Hour.}

Students receive credit for completion of duties on the Law School's publication of The Journal of Food Law \& Policy. (Typically offered: Spring)

\section*{LAWW 6193. Workplace Legislation. 3 Hours.}

An in-depth look at workplace statutes and the interpretive regulations along with significant and recent case law. Emphasis on wage and hour law, the Family Medical Leave Act, Occupational Safety and Health law and Arkansas Unemployment Compensation law. (Typically offered: Irregular)

\section*{LAWW 6203. Trial Advocacy. 3 Hours.}

An introduction to actual trial work and trial techniques through simulated exercises and the conduct of a mock trial. This course will satisfy the skills requirement. Pre- or Corequisite: LAWW 6093. (Typically offered: Fall and Spring)

\section*{LAWW 621V. Products Liability. 2-3 Hour.}

An intensive study of the area including a review of the theories of liability; the concepts of product and defect; potential defendants; defenses; problems of proof and causation. (Typically offered: Irregular)

\section*{LAWW 6233. Federal Income Tax of Individuals. 3 Hours.}

Fundamentals of the federal income taxation of individuals. Topics covered include gross income, deductions, assignments of income, basis, taxation of property transactions, and tax accounting. (Typically offered: Irregular)

LAWW 6253. Federal Income Taxation of Business Entities. 3 Hours.
Focus on tax issues in business formation, operation, distributions, and liquidations. Prerequisite: LAWW 6233. (Typically offered: Irregular)

\section*{LAWW 6262. Estate Planning. 2 Hours.}

Study of the role of lawyers (including ethical considerations) in fact gathering and analysis of data; testamentary and nonprobate transfers; planning for incapacity; Medicaid, income tax, and transfer tax considerations in small and large estates; gift techniques; planning for the surviving spouse; revocable and irrevocable trusts; life insurance; disposition of business interests; and post-mortem tax planning. Students are strongly encouraged to take either Wills, Trust and Estates or Federal Estate and Gift Taxation prior to taking the course. (Typically offered: Irregular)

LAWW 6282. Multistate Substance and Strategies. 2 Hours.
In this class, students will review via videotaped lecture the seven subjects tested on the Multistate Bar Exam (MBE): Civil Procedure, Constitutional Law, Contracts, Criminal Law \& Procedure, Evidence, Property, and Torts. For each subject, students will complete assessment quizzes and practice multiple choice questions. The final exam will consist of 100 MBE-style questions covering all subjects. (Typically offered: Spring)

\section*{LAWW 629V. Public Corporations. 2-3 Hour.}

A survey of topics applicable to publicly owned corporations, including: corporate governance; shareholder communication and proxy regulation; introduction to corporate finance and dividend policies; mergers and acquisitions; tender offer regulation; aspects of securities regulation; and insider trading. Prerequisite: LAWW 4294. (Typically offered: Irregular)

\section*{LAWW 631V. Interschool Competition Team. 1-2 Hour.}

Interschool Competition Team provides an avenue for outstanding student advocates to register their completion of a rigorous interschool competition for purposes of academic credit. Students may register for this credit after satisfying the standards for approval of non-graded credit for Interschool Competition Credit, as outlined in the University of Arkansas School of Law Board of Advocates Bylaws and relevant Bylaw and Academic Standards provisions, as promulgated by the Faculty. (Typically offered: Fall and Spring)

\section*{LAWW 6323. Poverty Law: Theory and Practice. 3 Hours.}

Considers the implications of statutory and constitutional provisions that relate to several substantive areas of poverty law practice including public benefits, employment, consumer, health and family law. Prerequisite: LAWW 5114. (Typically offered: Irregular)

\section*{LAWW 6343. Conflict Resolution. 3 Hours.}

Explores methods utilized in the legal profession for resolving disputes. Students develop skills by participating in simulation exercises designed to identify and apply processes. Class readings/discussion on theory and practice will be followed by student simulations. (Typically offered: Irregular)

\section*{LAWW 635V. Arkansas Law Notes Credit. 1-4 Hour.}

Arkansas Law Notes is published online as a student-run law journal by the University of Arkansas School of Law to members of the bar and the law school community at arkansaslawnotes.com. The publication features articles and current research, including student works. Law Notes is a tradition of the School of Law, dedicated to providing timely and insightful research on a variety of subjects to members of the bar. Law Notes is produced under the guidance of Professors Lonnie Beard, Uche Ewelukwa, and Brian Gallini. A mark of "CR" will be given. (Typically offered: Irregular)

\section*{LAWW 6364. Legal Clinic: Immigration. 4 Hours.}

Immigration Clinic will provide opportunities for students preparing for a career in immigration law or general practice by developing skills that are critical in legal practice through an experiential learning model. Working under the supervision of a clinical faculty member, students will represent sectors of the immigrant population for graded credit. Criminal Procedure and Professional Responsibility are prerequisites, as well as the completion of at least forty-eight credit hours prior to enrollment. Prerequisite: LAWW 5013. (Typically offered: Irregular)

\section*{LAWW 6374. Legal Clinic: Bankruptcy. 4 Hours.}

In this experiential course students are closely supervised in the preparation and filing of consumer Chapter 7 bankruptcy cases for individuals and spouses from intake interview through discharge. The skill set taught includes information and fact gathering during a series of taped interviews, ethically handling trust account monies, drafting and filing the bankruptcy petition using document assembly software, appearance before the U.S. Trustee at the First Meeting of Creditors, and negotiating with bankruptcy trustees, creditors and other interested parties. The basic course is for 4 credit hours, and the Advanced course is available for an additional 2 credit hours. The expected learning outcome is to have students gain competence in providing representation in Chapter 7 consumer bankruptcies. (Typically offered: Irregular)

\section*{LAWW 6393. Legal Clinic: Nonprofit. 3 Hours.}

Rule 15 certification requires completion of 48 hours, including all first year classes and Professional Responsibility. Students receive clinical legal experience counseling and representing non-profit organizations serving Northwest Arkansas in a wide range of non-litigation business law matters. Services include startup, incorporation, obtaining federal and state tax exemptions, change of business form, purchase and lease of real and personal property, employment and labor law issues, and general contract negotiation, drafting and execution. In addition, students prepare and participate as presenters in a workshop on matters of general interest to non-profit organizations. Legal Clinic Faculty supervise and review the student attorney's work, and provide personal feedback to the individual student attorneys. Prerequisite: LAWW 5013. (Typically offered: Irregular)

\section*{LAWW 6403. Land Use. 3 Hours.}

Covers public land use controls such as zoning, subdivision regulations, and eminent domain (including private property rights, takings, and inverse condemnation). Heavy emphasis is placed on planning at state and local levels. (Typically offered: Irregular)

\section*{LAWW 6413. Legal Clinic: Advanced Criminal Practice. 3 Hours.}

The Advanced Criminal Practice Clinic is a 3-credit course offered after a student has successfully completed Criminal Practice Clinic. Students who wish to continue work on existing cases or work on more complicated criminal matters, may apply to enroll in the Advanced Criminal Practice Clinic. Professor approval is required for enrollment. Prerequisite: LAWW 6424. (Typically offered: Irregular)

LAWW 6424. Legal Clinic: Criminal Practice Clinic. 4 Hours.
The Criminal Practice Clinic represents clients charged with misdemeanor and simple felony charges primarily in Washington County. Under close faculty supervision, students develop their ability to effectively and ethically practice law while providing much-needed legal assistance. In addition to client representation, and court appearances, students participate in a weekly seminar. Qualification for Rule XV practice. Prerequisite: LAWW 6093, LAWW 4173, and LAWW 5013. (Typically offered: Irregular)

\section*{LAWW 645V. American Legal History. 2-3 Hour.}

An examination of major themes in American legal history, with an emphasis on the origins and meaning of the United States Constitution. Various topics will be explored in the light of the original understandings, developments over time, and current interpretations by the courts and the body politic. Course can and will be offered in either a two or three credit hour version. The latter would allow both an increase in the number of topics covered and greater depth of coverage for selected issues. (Typically offered: Irregular)

\section*{LAWW 646V. Student Coordinating Attorney. 1-3 Hour.}

The School of Law recognizes the educational value of placements under the supervision of licensed, experienced attorneys, and offers students the possibility of public service learning opportunity serving as a student coordinating attorney for 2-3 credits of ungraded credit if approved by the designated Faculty Supervisor. This option shall be available only to a student with a cumulative GPA of at least 2.0 who has successfully completed 30 hours of Law School classes including Professional Responsibility, and who has obtained and submitted at least one recommendation from a faculty member who has had that student in at least one class in the past 12 months. A student coordinating attorney is a pro-bono position involving exposure to real world situations, involving some aspect of public service, where a lawyer's expertise and insights will be called for and can be observed. Placement is restricted to the courses offered in the all of the clinics offered at the law school. This position covers an entire semester ( 15 weeks during the spring and fall, and \(10-12\) weeks during the summer). For a two-credit student coordinating attorney position, the average work load must be no less than 8 hours per week in the fall and spring, or 10 hours per week in the summer. For a three-credit student coordinating attorney position, the average work load would be no less than 12 hours per week in the fall and spring, or 15 hours per week in the summer. Application required and must be completed in writing and delivered to the Faculty Supervisor no later than October 15 of the preceding semester for a spring semester student coordinating attorney position, no later than March 15 for a summer or fall semester student coordinating attorney position. (Typically offered: Fall and Spring)

\section*{LAWW 648V. Special Topics (Skills). 1-3 Hour.}

Special Topics (Skills) is a course where "class names" allow for a menu of course titles that provide substantial instruction in professional skills related to the responsibilities which lawyers are called upon to meet such as trial and appellate advocacy, alternative methods of dispute resolution, counseling, interviewing, negotiating, problem solving, factual investigation, organization and management of legal work, drafting, and analytical processes for applying those skills in ethical fashion. (Typically offered: Fall, Spring and Summer) May be repeated for up to 15 hours of degree credit.

\section*{LAWW 6523. Employment Law. 3 Hours.}

An overview of the law governing various aspects of the employment relationship, both statutory and common law. Covers the establishment and parameters of employment, the security of the worker, employer's rights, and terminations. (Typically offered: Irregular)

\section*{LAWW 654V. Public Interest Externship. 1-3 Hour.}

Public Interest Externships are experiences available to students having completed 30 hours toward the JD degree. Students work part-time -- 12 hours/week over 14 weeks (variable in summer) -- serving an underprivileged population in traditional and non-traditional public service and public interest sectors. By participating in/ observing various tasks, students develop legal and professional skills appropriate to various areas and types of law. There is a Field and an Academic Component to this course. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

\section*{LAWW 6562. Legal Clinic: Advanced Immigration. 2 Hours.}
tThe Advanced Immigration Law Clinic allows students to obtain an additional 2 credits of experience. Only students who have completed the Immigration Law Clinic may take the Advanced course in a subsequent semester. The Clinic provides opportunities for students preparing for a career in immigration law by developing skills that are critical in legal practice through an experiential learning model. The Clinic allows for continuity in cases, as well as opportunities to handle more advanced and diverse cases. The Clinic is offered to 2-3 students per semester. Each will receive 2 credits. Students are expected to work approximately 4 hours per credit hour, per week, including work done for class preparation, group work, individual meetings, and representation. Students are chosen through an application process including a brief statement on interest in Immigration Law and goals for study in the Advanced Clinic. Prerequisite: LAWW 6364. (Typically offered: Fall and Spring)

\section*{LAWW 660V. Government Externship. 1-3 Hour.}

Government Externships are experiences available to students having completed 30 hours toward the JD degree. Students work part-time -- 12 hours/week over 14 weeks (variable in summer) -- alongside government attorneys, exposing students to legal issues and practice in government agencies. By participating in/ observing various tasks, students develop legal and professional skills appropriate to government work. There is a Field and an Academic Component to this course. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

\section*{LAWW 661V. Bankruptcy. 2-3 Hour.}

Study of the philosophy behind and practical application of federal bankruptcy law. (Typically offered: Irregular)

\section*{LAWW 6633. Criminal Procedure: Adjudication. 3 Hours.}

This course focuses on prosecuting crime. Principal topics include: the prosecutor's decision to charge, the role of defense counsel, initial appearance, bail and pretrial release, grand juries and preliminary hearings, discovery, guilty pleas and plea bargaining, speedy trial, double jeopardy, trials and pretrial motions, sentencing and post-conviction remedies. (Typically offered: Irregular)

\section*{LAWW 6702. Copyright Law. 2 Hours.}

The nature of the rights, acquisition and enforcement, and property and contract interests in copyrights. (Typically offered: Fall, Spring and Summer)

\section*{LAWW 671V. Judicial Externship. 1-3 Hour.}

Judicial Externships are experiences available to students having completed 30 hours toward the JD degree. Students work part-time - 12 hours/week over 14 weeks (variable in summer) - in judicial chambers, exposing students to the court system and the adjudication of cases from the judge's perspective. By observing proceedings/engaging in research/judicial writing, students develop legal and professional skills appropriate to litigation. There is a Field and an Academic Component to this course. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

\section*{LAWW 673V. Criminal Defense Externship. 1-3 Hour.}

Criminal Defense Externships are experiences available to students having completed 30 hours toward the JD degree. Students work part-time -- 12 hours/ week over 14 weeks (variable in summer) -- alongside Public Defenders, exposing students to criminal law and strategy from the defense perspective. By participating in/observing various tasks, students develop legal and professional skills appropriate to criminal defense world. There is a Field and an Academic Component to this course. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{LAWW 676V. Capstone Externship. 1-12 Hour.}

Capstone Externships are experiences available to students having completed 60 hours toward the JD degree. These full-time externships place students alongside working attorneys in any one of the externships below -- 35-40 hours/week over 15 weeks (10-12 weeks in summer) -- exposing students to greater responsibility and more in-depth projects. There is a Field and an Academic Component to this course. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{LAWW 6822. Patent Law. 2 Hours.}

Study of the patent system of the United States, including conditions for a valid patent, procedures of the patent office, and litigation relating to patents. Not offered every year. (Typically offered: Irregular)

\section*{LAWW 683V. Criminal Prosecution Externship. 1-3 Hour.}

Criminal Prosecution Externships are experiences available to students having completed 30 hours toward the JD degree. Students work part-time -- 12 hours/week over 14 weeks (variable in summer) -- alongside prosecutors, exposing students to criminal law and strategy from the prosecutorial perspective. By participating in/ observing various tasks, students develop legal and professional skills appropriate to criminal prosecution. There is a Field and an Academic Component to this course. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

LAWW 6843. Legal Clinic: Advanced Civil Litigation and Advocacy Clinic. 3 Hours.
Students in the Advanced Civil Litigation \& Advocacy Clinic (CLAC) continue their representation of low-income clients seeking to enforce their rights in civil matters. While the Clinic docket varies, it usually consists primarily of unpaid wage cases as well as other civil matters. Under close faculty supervision, you will further develop your ability to effectively and ethically practice law while providing muchneeded legal services. As an advanced clinic student, you will exercise increased independence and take on more complex matters. Prerequisite: LAWW 6924. (Typically offered: Irregular)

\section*{LAWW 686V. Corporate Counsel Externships. 1-4 Hour.}

Corporate Counsel Externships are experiences available to students having completed 30 hours toward the JD degree. Students work part-time -- 16 hours/ week over 14 weeks (variable in summer) -- alongside attorneys in traditional legal departments/non-traditional business-compliance areas, exposing students to legal issues facing these attorneys daily. By observing/participating in various tasks, students develop legal and professional skills appropriate to corporations. There is a Field and an Academic component to this course. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{LAWW 6873. Legal Clinic: Advanced Nonprofit Clinic. 3 Hours.}

Students who have successfully completed the Transactional Clinic in the fall or spring semester may enroll for 3 hours of graded credit in the Advanced Transactional Clinic in any subsequent semester. Students will be assigned a normal client load during both semesters. In the summer students may enroll in Transactional Clinic and Advanced Transactional Clinic during the same term. Students will be assigned to provide legal representation to qualified nonprofit organizations under the supervision of a faculty member. Students will have the opportunity interview and counsel nonprofit entities and perform a number of transactional legal services for corporate clients including: drafting bylaws, preparing and filing articles of incorporation, completing and submitting applications for tax exempt status with state and federal tax agencies; and preparing and filing articles of dissolution. Admission to Advanced Clinic in connection with any of the eligible clinic courses is limited and by approval of the faculty member. Prerequisite: Qualification for Rule XV practice. (Typically offered: Irregular)

\section*{LAWW 6913. Environmental Law. 3 Hours.}

Devoted primarily to the legal problems related to the environment. Included is consideration of environmental impact in public and private decision making. (Typically offered: Irregular)
LAWW 6924. Legal Clinic: Civil Litigation and Advocacy Clinic. 4 Hours. Students will represent low-income clients seeking to enforce their rights in civil matters. Under close faculty supervision, students will develop and refine their ability to effectively and ethically practice law. Students will handle all aspects of client representation, including interviewing and counseling, fact investigation and discovery, negotiation, and court appearances. Students will also participate in a weekly seminar and may have the opportunity to engage in other forms of advocacy. Cumulative GPA of 2.00 , successful completion of 48 semester hours, including Civil Procedure I and II, Criminal Procedure, Evidence, and Professional Responsibility, and qualifying for Rule XV practice. Prerequisite: LAWW 4173, LAWW 5013 and LAWW 6093. (Typically offered: Fall and Spring)

\section*{LAWW 6933. Legal Clinic: Human Trafficking. 3 Hours.}

Students complete advocacy projects for organizations that confront and prevent human trafficking. Students may employ a range of public interest practice strategies including report writing, legislative drafting, and community education. During the seminar, students develop skills related to their advocacy projects. Students also study the human trafficking problem and anti-trafficking laws and evaluate antitrafficking strategies. Students learn interviewing and counseling skills, and how to work with survivors of trauma and across cultural and language difference. (Typically offered: Fall and Spring)

\section*{LAWW 6943. Public International Law. 3 Hours.}

Principles of international law involving relations among government. The function of international tribunals and organizations. (Typically offered: Irregular)

LAWW 697V. Legal Clinic: Advanced Bankruptcy. 2-3 Hour.
Legal Clinic: Advanced Federal Practice provides opportunities for students preparing for a career in consumer bankruptcy law by developing skills that are critical in legal practice through an experiential learning model. The Advanced Federal Practice Clinic will allow for continuity in cases, as well as opportunities to handle more advanced and diverse cases. Offered to 2-3 students each semester, students enrolled in this course must have taken Federal Practice Clinic, gaining basic knowledge of bankruptcy law and procedure. Students are expected to work approximately 4 hours per credit hour, per week, including work done for class preparation, group work, individual meetings, and representation. Students are chosen through the application process. Prerequisite: LAWW 6374. (Typically offered: Fall and Spring)

LAWW 704V. Federal Regulation of Food Labeling and Safety. 1-4 Hour. Welcome to Federal Regulation of Food Labeling \& Food Safety. This course will explore the federal law that applies to the labeling of food products by examining discreet topics, including the labeling of genetically engineered ingredients, food fraud, organic labeling, and the new restaurant menu regulations. It will also explore the federal regulation of food safety, examining food recalls, the food code, and traceability. The law, the role of government, the perspective of industry and the interest consumers will all be examined. (Typically offered: Fall)

\section*{LAWW 706V. Sports Law. 2-3 Hour.}

The major topics covered include significant contract issues, tort liability involving participants, institutions, physicians and equipment manufacturers, criminal liability, drug testing, constitutional and related issues dealing with sports associations and Title 9 and gender equity issues. Other relevant topics may also be covered if possible. (Typically offered: Irregular)
LAWW 7071. Agricultural Cooperatives and Local Food Systems. 1 Hour. Introduction to the legal structure of a cooperative and examination of the recent use of the cooperative model in encouraging local and regional food systems. (Typically offered: Irregular)

\section*{LAWW 7073. Mediation in Practice. 3 Hours.}

This three credit course is an introduction to the process of mediation and focuses on mediation theory and practice. The course provides a comprehensive overview of the mediation process, including the role of the mediator, litigants, attorneys, the courts and other relevant participants. Students are taught the basic skills needed to participate in a mediation as a mediator or as an advocate, and introduced to the ways in which mediation is used in various settings such as state and federal courts, and government agencies. Because this is skills class, it includes a lot of interactive work, including simulated mediations. All students are required to actively participate in the simulated mediations. (Typically offered: Irregular)

LAWW 708V. Selected Issues in Agricultural and Food Law. 1-3 Hour.
Specialized study of one or more current issues in agricultural and food law, regulation, and policy. (Typically offered: Spring)

\section*{LAWW 710V. Agricultural Biotechnology. 1-2 Hour.}

Study of the regulation of agricultural biotechnology, including the approval process for new technologies, the patenting of new products and technologies, and the restrictions associated with their use. (Typically offered: Irregular)

LAWW 711V. Introduction to Agricultural Taxation. 1-2 Hour.
Overview of federal income tax law as applied to agricultural operations. (Typically offered: Irregular)

LAWW 713V. Agricultural Water Law. 1-2 Hour.
Study of the basic legal principles applicable to water rights through consideration of water rights for agricultural use. (Typically offered: Spring)

\section*{LAWW 714V. The Right to Food. 1-3 Hour.}

Is the right to adequate food recognized as a human right under international law? Should the right to adequate food be recognized as a human rights? How is the human right to adequate food defined \& implemented? What are the core elements of the right to adequate food? What is the scope of this right? What are the present and future threats to the right to food? How are individuals \& communities whose right to food are compromised fighting back? This course introduces the principle \& concept of the human right to adequate food and its practical application and implications. (Typically offered: Irregular)

\section*{LAWW 7231. Effective Legal Writing. 1 Hour.}

Effective Legal Writing is a course about writing. Students review and revise written examples, discussing the fundamentals of writing in the plain English style. Class discussions are guided by various readings on plain English writing and students' wit, wisdom, and disputatious opinions about such phrases as "pursuant to," "in order to," and the like. The course seeks to be a fun way to learn more about how to be an effective legal writer. (Typically offered: Fall)

\section*{LAWW 7243. Health Law. 3 Hours.}

An examination of the role of the law in determining access to and regulation of the quality of services provided by the health care industry. (Typically offered: Irregular)

\section*{LAWW 726V. Farmed Animal Welfare Law and Policy. 1-2 Hour.}

Examination of the legal issues involved in determining welfare standards for animals raised for food. In addition to introducing federal animal welfare and humane slaughter laws, state referenda, state law standards, and so-called "ag gag" laws are studied. (Typically offered: Irregular)

\section*{LAWW 727V. Food Safety Litigation. 1-2 Hour.}

Examination of food borne illness litigation with an initial introduction to food product liability followed by the study of actual cases brought against food manufactures. (Typically offered: Fall)

\section*{LAWW 7312. Agricultural Perspectives. 2 Hours.}

Agriculture has a rich and varied history, and today's issues are often best understood in the context of this history. This course examines a wide range of social and economic issues, considering their origin and how history is reflected in today's policies. The course includes a series of documentaries. (Typically offered: Spring)

\section*{LAWW 7321. Agricultural Policy and the Federal Budget. 1 Hour.}

Study of the impact of the Office of Management and Budget and the cost scoring system on federal agricultural policy making in Washington, D.C. Current farm policy issues are discussed within the context of budgetary constraints and pressures. (Typically offered: Fall)

LAWW 740V. Federal Farm Programs and Crop Insurance. 1-2 Hour.
Survey of the complex network of federal farm programs and federal crop insurance programs that are available to U.S. producers. (Typically offered: Fall)

LAWW 741V. Food, Farming and Sustainability. 1-3 Hour.
Survey of the complex legal topics that make up the body of agricultural and food law focusing on current issues of significance. (Typically offered: Fall)

\section*{LAWW 7501. Farm Succession Planning. 1 Hour.}

Farm succession planning is one of the most important aspects of farm management but one of the most difficult to discuss with most producers. Traditional notions of how a farm estate should be divided among heirs can often conflict with what is best for the farm business and the testator's wishes. This course will equip students with basic tools to facilitate meaningful discussion among family members about the development and maintenance of a farm succession plan. Students will examine various instruments for accomplishing succession planning goals including wills, trusts, and business structures. The course will also touch on the role of conservation easements, tax considerations, and the importance of encouraging families to begin transferring the farming operation to the heirs before the testators pass. (Typically offered: Spring)

LAWW 7511. Introduction to the Law of Food and Agriculture. 1 Hour.
Orientation course that provides an overview of the legal and policy issues presented by the production of food and fiber, including a discussion of structural changes in agriculture, sustainability issues, and trends in consumer interest. (Typically offered: Fall)

\section*{LAWW 7581. Legal Issues in Land Tenure. 1 Hour.}

Legal Issues in Land Tenure explores the role of land ownership in American agriculture. It examines the history of federal land policy and the current reality of farmland tenure in the U.S., asking questions such as who owns American farmland; how does ownership impact conservation practices, and how can we support a more diverse network of beginning farmers? This course combines issues of social justice, environmental ethics, and basic property law to address some of the most critical issues of our time. (Typically offered: Irregular)

\section*{LAWW 7612. Advanced Consumer Bankruptcy. 2 Hours.}

Study of recent developments in the law of bankruptcy as it applies to consumer and non-consumer transactions. (Typically offered: Irregular)

LAWW 762V. Legal Issues: Indigenous Food and Agriculture. 1-2 Hour. Overview of the legal, historic, social, and economic issues important to sustainable food and agriculture development in Indian Country. It features in-depth discussion of historic and emerging issues including land use challenges, tribal food and agriculture code development, and barriers to effective agriculture development. (Typically offered: Irregular)

\section*{LAWW 764V. Practicum in Agricultural \& Food Law. 1-4 Hour.}

This experiential course provides LL.M. candidates with an opportunity to work with agencies, advocacy organizations, businesses, and others engaged in agricultural \& food law practice and policy throughout the country. Work can be performed onsite or via distance. Prerequisite: Only available to students admitted to the LL.M. Program. (Typically offered: Fall, Spring and Summer)
LAWW 765V. Intellectual Property Issues in the Food \& Agricultural Sector. 1-3 Hour.
This course offers an overview of the key IP issues in food and agriculture. The focus is on five types of IP - Trademarks, Trade Secrets, Geographical Indicators (GIs), Copyrights, and Patents. The course will introduce students to IP law (domestic, regional and global) and will look at the expansion of IPRs in food and agriculture. (Typically offered: Irregular)

\section*{LAWW 7662. American Indian Law. 2 Hours.}

Study of the domestic federal law of the United States as it applies to Native Americans and their tribes. The general concept of tribal self-determination is the unifying theme of the course. Particular topics include tribal sovereignty and government; American Indian civil rights; administration of justice on and off the reservation; American Indian land claims; land, hunting, and fishing rights; water rights; American Indian health, education, and welfare; Bureau of Indian Affairs; state taxation; individual and tribal treaty rights; federal Indian policy; and zoning and environmental controls. (Typically offered: Irregular)
LAWW 770V. Advanced Writing in Agricultural and Food Law. 1-4 Hour. Research in a specialized area of agricultural or food law and development of a paper that demonstrates rigorous legal analysis and quality legal writing. (Typically offered: Spring) May be repeated for degree credit.
LAWW 771V. Independent Research in Agricultural and Food Law. 1-2 Hour. Independent research in agricultural and food law conducted under the supervision of a faculty member. (Typically offered: Fall, Spring and Summer)

\section*{LAWW 774V. Urban Agriculture: Law and Policy. 1-2 Hour.}

Study of the legal issues raised by the rising interest in urban agricultural activities. Topics of study include land use and zoning issues, farmers market issues, and legal issues associated with community sponsored agriculture. (Typically offered: Irregular)

LAWW 776V. Agricultural Finance and Credit. 1-3 Hour.
Study of the legal issues surrounding the financing of agricultural operations, including credit availability, agricultural security issues under the Uniform Commercial Code, and debt restructuring opportunities. Special focus is on lending options offered by the Farm Service Agency and the Farm Credit System. (Typically offered: Irregular)

\section*{LAWW 7773. Water Law. 3 Hours.}

Study of real property principles governing ownership rights in water and the federal and state statues controlling the use of water. (Typically offered: Irregular)
LAWW 778V. Agricultural Labor Law. 1-2 Hour.
Study of the legal, social, and economic issues that arise from the extensive use of migrant labor in U.S. agricultural operations. Topics include agricultural exemptions from labor laws, the Migrant \& Seasonal Agricultural Worker Protection Act, and agriculture's reliance on undocumented alien workers. (Typically offered: Spring)

LAWW 782V. Food Security, Social Justice, \& the Law. 1-2 Hour.
Survey of the legal and policy issues raised by the food justice movement. Topics covered include food insecurity and poverty, public health concerns such as obesity, the economics of healthy eating, food deserts, and food waste. Each will be considered in light of the legal and governmental policy issues raised. (Typically offered: Fall Odd Years)

\section*{LAWW 785V. Federal Nutrition Law and Policy. 1-2 Hour.}

Study of federal nutrition policy, including the development of the federal nutrition standards, the framework for the food assistance programs, the federal school lunch program, and the government's efforts to encourage healthy eating. Prerequisite: LAWW 786V. (Typically offered: Irregular)

\section*{LAWW 786V. Food Law and Policy. 1-3 Hour.}

An introduction to the network of laws that govern our food system. An overview of regulation by both the Food \& Drug Administration and the USDA is provided. Policy considerations are discussed in light of current issues. (Typically offered: Irregular)

\section*{LAWW 7932. Environmental Regulation of Agriculture. 2 Hours.}

This course examines the major federal environmental statutes applicable to agricultural operations with attention to current cases and controversies under those laws. It also explores the regulatory authority and enforcement practices of the EPA and other agencies. (Typically offered: Spring)

LAWW 794V. Business, Human Rights, \& Corporate Social Responsibility. 1-3 Hour.
Business has helped lift people around the world out of poverty. However, businesses can have a serious impact on human rights. This is true for businesses in the food and agricultural sector. Around the globe companies in all sectors are contributing to human rights abuses. With globalization, the proliferation of multinational corporations, and increase in the scale and volume of foreign direct investment, the situation appears to be getting worse. The course explores the business-human rights nexus with a particular focus on the food and agricultural sector and on case studies from around the world. (Typically offered: Irregular)

\section*{LAWW 796V. Agriculture and the Environment. 1-3 Hour.}

Agriculture is increasingly criticized for its impact on the environment. This course examines the tensions between the desire to produce food and fiber efficiently and concern for sustainability and the protection of natural resources. (Typically offered: Fall)

\section*{Management (MGMT)}

\section*{Courses}

\section*{MGMT 2103. Managing People and Organizations. 3 Hours.}

Study of the process of acquiring and managing Human Capital, focusing on the organizational behavior, legal, economic, and technical issues concerned with business decisions about acquiring, motivating, and retaining employees; emphasis given to the development, implementation, and assessment of policies and practices consistent with legal, social, human, and environmental dynamics. Corequisite: Walton College students: MATH 2053 or MATH 2554 each with a grade of C or better. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better. (Typically offered: Fall, Spring and Summer)

\section*{MGMT 2103H. Honors Managing People and Organizations. 3 Hours.}

Study of the process of acquiring and managing Human Capital, focusing on the organizational behavior, legal, economic, and technical issues concerned with business decisions about acquiring, motivating, and retaining employees; emphasis given to the development, implementation, and assessment of policies and practices consistent with legal, social, human, and environmental dynamics. Corequisite: Walton College students: MATH 2053 or MATH 2554 each with a grade of \(C\) or better and honors standing. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of \(C\) or better and honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MGMT 2103.

\section*{MGMT 2423. Social Issues, Diversity and Ethics in a Global Business}

Environment. 3 Hours.
Ethics, diversity, and culture are significant issues organizations must address within their workforces as they strive for success in a global business environment. Organizations that understand these factors will be better positioned to attract and retain talent, ensure employee and firm success, and foster continued positive contributions to society. In this course, students will explore how organizations can embrace and address critical social issues directly and ethically. Students will leave the course with an enhanced understanding of the incredible diversity of employees in terms of personal characteristics, culture, and beliefs, and with an increased awareness of important tools for enhancing employee and organizational success in today's business climate. Prerequisite: BUSI 1111 with a grade of \(C\) or better will only apply to business majors; there are no prerequisites for non-business majors. (Typically offered: Fall and Spring)

\section*{MGMT 3533. Alternative Dispute Resolution. 3 Hours.}

This immersion into the divergent forms of conflict/dispute resolution will expose students to the dynamics of one of the leading disciplines in the workplace and society as a whole. Students will be presented with a comprehensive analysis of divergent aspects of conflict resolution strategies such as negotiation, mediation, arbitration, neutral fact finding, settlement conferences, summary trials, conciliation and facilitation. Confrontational negotiating styles and illustrations will be contrasted with topical strategies such as mutual gains. Prerequisite: Junior standing. (Typically offered: Irregular)

\section*{MGMT 3563. Management Concepts and Organizational Behavior. 3 Hours.}

Business students may not receive credit for this course. Course introduces students to fundamental concepts of management practice with particular emphasis on managing human behavior in organizations. Addresses the planning, organizing, directing, and controlling functions performed by managers as these functions relate to managing human resources. Provides survey of critical management concepts; enables students to develop analytical and problem solving skills through case studies and experimental exercises. Students may not receive credit for both MGMT 3563 and MGMT 2103. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Irregular)

MGMT 3653. Creating and Leading a Diverse Workforce. 3 Hours.
Study of the process of creating and leading a diverse workforce, focusing on the knowledge and skills necessary for creating a culture that embraces and makes diversity work; examines the many dimensions of diversity with emphasis on understanding the range of cultural behaviors and expectations, cultural communication, and building diverse work teams. Special attention will be given to developing talent management competencies, such as recruiting, coaching, mentoring, career development, and evaluating and measuring the effects of diversity initiatives. Prerequisite: Junior standing. (Typically offered: Irregular)
MGMT 4103. Special Topics in Management. 3 Hours.
Explores trends, concepts, and important developments in management as they impact on organizational performance. Topics are selected by the Management Department faculty for each semester the course is offered. (Typically offered: Irregular) May be repeated for degree credit.
MGMT 4243. Ethics and Corporate Responsibility. 3 Hours.
A comprehensive and critical examination of traditional and current ethical theories and approaches that guide business decision-making, ethical issues that affect business decisions, and ethics related to the various business disciplines. (Typically offered: Fall and Spring)

\section*{MGMT 4253. Leadership. 3 Hours.}

This course offers a foundation for understanding and evaluating organizational leadership. It is designed to assist students in developing frameworks for understanding and enacting leadership. This course examines topics such as the nature and foundation of the leader-follower relationship, models that explain effective leadership, and the interface of leadership with gender, ethics, and culture. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)

\section*{MGMT 4263. Organizational Change and Development. 3 Hours.}

This course will develop diagnostic and intervention skills that can be applied to identifying and overcoming problems of morale and productivity in organizations. A variety of behavioral methods will be covered. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)

\section*{MGMT 4273. Leading Groups and Teams. 3 Hours.}

This course focuses on applying theory and principles of leadership, groups, and teams to develop the knowledge and skills necessary to effectively lead and work in teams. It is designed to help students develop confidence as team leaders by focusing on (1) improving team leadership skills related to factors such as communication, decision-making, and conflict management, and (2) self-reflection of their own personalities, skills, and experiences as important and relevant predictors of their effectiveness as team leaders. Pre- or Corequisite: MGMT 4253. (Typically offered: Fall and Spring)

\section*{MGMT 450V. Independent Study. 1-3 Hour.}

Permits students on individual basis to explore selected topics in management. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{MGMT 4633. Faith, Spirituality, and the Workplace. 3 Hours.}

An in-depth and interactive survey of faith and spirituality in the workplace. Provides students with a foundational knowledge of various faith traditions and forms of spirituality, including non-theist perspectives. Highlights the interconnections between faith traditions. Encourages exploration and identification of personal value systems and their origins. Develops skills that enable meaningful interaction with individuals from diverse faith and spiritual backgrounds. Examines the growing body of academic research on faith and spirituality in the workplace. Studies the management challenges and opportunities inherent in developing faith-friendly workplaces. Examines the different ways modern organizations are approaching faith and spirituality in the workplace. Offers perspectives from, and provides the opportunity to engage with, multiple religious, spiritual, and business leaders. Prerequisite: Junior Standing. (Typically offered: Irregular)

MGMT 4943. Talent Acquisition and Management. 3 Hours.
In-depth study of theoretical, legal, methodological, and substantive issues related to selection, performance appraisal, and development of employees. Students participate in individual and group projects designed to provide theoretical and practical skills related to staffing. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)

MGMT 4953. Organizational Rewards and Compensation. 3 Hours.
Develops an understanding of reward systems theory and its application to the design of compensation systems. Provides theoretical and legal background and practical applications for the use of reward systems in attracting, motivating, and retaining employees. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)

\section*{MGMT 4963. People Analytics. 3 Hours.}

There is a growing demand for data-based decision making in organizations, and Human Resources is no exception. In this course, students will gain an appreciation for the ways in which people data can be used to make more effective Human Resources decisions. Students will gain experience manipulating a data set, performing basic analyses, interpreting results, and make data-driven recommendations, while learning how people analytics fit into advancing larger organizational goals. Distilling and communicating results using visual media is also emphasized. Prerequisite: BUSI 1033. (Typically offered: Fall and Spring)

MGMT 4983. Talent Development. 3 Hours.
A comprehensive approach to developing talent demonstrates an organization's commitment to its employees and facilitates the organization's ability to meet strategic goals. This course focuses on applying the theories and principles of coaching, mentoring, training, and development to cultivate the knowledge and skills necessary to effectively develop talent. It is designed to provide an understanding of how coaching, mentoring, training, and development can be performed in a variety of situations and to demonstrate the relevance of these functions for effective leadership. Key relational and communication skills essential for talent development are emphasized. Prerequisite: MGMT 2103 or MGMT 3563. (Typically offered: Fall and Spring)

\section*{MGMT 5223. Business Leadership and Ethics. 3 Hours.}

Management for a global environment. The class will cover interpersonal workplace skills such as leadership and motivation, along with the management of human capital through well designed recruitment, selection, performance evaluation, compensation, and quality control systems. (Typically offered: Fall) May be repeated for degree credit.

\section*{MGMT 5613. Leadership and Organizational Behavior. 3 Hours.}

Managing in a global workforce, including human resource issues, motivation, performance evaluation, quality concepts, transformational leadership, and selection/ recruitment/ development of employees. (Typically offered: Summer)

MGMT 6011. Graduate Colloquium. 1 Hour.
Presentation and critique of research papers and proposals. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MGMT 6113. Seminar in Organizational Behavior. 3 Hours.}

Survey of theoretical and empirical literature in organizational behavior. Stresses critical evaluation of current writing in the field and its integration with prior research. Covers topics relating to motivation, individual differences, job attitudes, social influence processes, and group dynamics. Prerequisite: Admission to a Ph.D. program. (Typically offered: Irregular)

\section*{MGMT 6213. Seminar in Research Methods. 3 Hours.}

Familiarizes students with the principles and techniques underlying research in management and organizations. Issues of basic philosophy of science and research methods are covered. Special attention given to the practical problems of research design, measurement, data collection, sampling, and interpretation in conducting research in management and in organizations. Prerequisite: Admission to a Ph.D. program. (Typically offered: Irregular)

MGMT 6233. Seminar in Human Resource Management. 3 Hours.
Provides an overview of major issues in human resource management. Designed to familiarize students with the seminal research in human resource management, and to provide them with the conceptual and methodological tools necessary to do research in the area. Prerequisite: Admission to a Ph.D. program. (Typically offered: Irregular)

MGMT 636V. Special Problems in Management. 1-12 Hour.
Individual reading and research. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

MGMT 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall and
Spring) May be repeated for degree credit.

\section*{Marketing (MKTG) \\ Courses}

\section*{MKTG 3013. Retail Internship. 3 Hours.}

This experience is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the retail, consumer products and related industries. Prerequisite: MKTG 3433 with a grade of \(C\) or better, completion of the pre-business core, junior standing, and department consent. (Typically offered: Fall, Spring and Summer)

\section*{MKTG 3433. Introduction to Marketing. 3 Hours.}

Examines strategies, tactical, and operational decisions related to contemporary marketing activities. Topics covered include product, services and international strategies in consumer and business markets. Prerequisite: For business majors: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better; For Non-business majors: (BUSI 1033 or STAT 2303) and ((ECON 2013 and ECON 2023) or ECON 2143). (Typically offered: Fall, Spring and Summer)

\section*{MKTG 3433H. Honors Introduction to Marketing. 3 Hours.}

Examines strategies, tactical, and operational decisions related to contemporary marketing activities. Topics covered include product, services and international strategies in consumer and business markets. Prerequisite: Honors standing and ((for business majors: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better); (for non-business majors: (BUSI 1033 or STAT 2303) and ((ECON 2013 and ECON 2023) or ECON 2143)). (Typically offered: Fall, Spring and Summer)
This course is equivalent to MKTG 3433.
MKTG 3553. Consumer Behavior. 3 Hours.
Analyzes consumer motivation, buying behavior, market adjustment, product innovation and adaptation; consumer market measurement, including survey of economic, behavioral science theories of consumer market behavior, producer and intermediary reactions. Consumer decision making is evaluated as to psychological drives, sociological concepts used by producers, channel intermediaries, consumers; considers methods, techniques for measuring consumer behavior, and analyzing consumer markets. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

\section*{MKTG 3633. Marketing Research. 3 Hours.}

Research designs, techniques, and analyses of primary and secondary data for the purposes of (1) developing market forecasts and segmentation analyses; (2) strategy implementation determining product development, pricing, distribution, and promotion decisions; and (3) monitoring customer attitudes, motivations and satisfaction. Prerequisite: MKTG 3433. (Typically offered: Fall, Spring and Summer)

\section*{MKTG 3653. Category Management Topics. 3 Hours.}

This course exposes new majors in Marketing and Supply Chain Management to the current thinking of management and supply chain professionals in consumer packaged goods (CPG) and the tools to determine consumer demand in the CPG industry. Pre- or Corequisite: MKTG 3433. Prerequisite: SCMT 2103. (Typically offered: Irregular)

\section*{MKTG 3833. Digital Marketing. 3 Hours.}

An exploratory introduction to the tools and tactics used by today's marketers to effectively promote products, brands, and companies in the digital age, with focus on digital content, website design, graphic and video design, digital advertising, social media, search-engine optimization, email marketing, and marketing analytics. Prerequisite: MKTG 3433. (Typically offered: Irregular)

\section*{MKTG 4003H. Honors Marketing and Transportation Colloquium. 3 Hours.}

Explores events, concepts and/or new developments in the field of Marketing and/or Transportation. Prerequisite: Senior standing, honors standing, and only Marketing majors or minors. (Typically offered: Irregular)

\section*{MKTG 4103. Marketing Topics. 3 Hours.}

Special topics in marketing not available in other courses. Topics are selected by the Marketing faculty for each semester each course is offered. Prerequisite: MKTG 3433. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{MKTG 4233. Integrated Marketing Communications. 3 Hours.}

The theory, knowledge, and application relevant to the coordination of marketing communications including advertising, personal selling, sales promotion, public relations, and publicity. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

\section*{MKTG 4343. Selling and Sales Management. 3 Hours.}

Examines how organizations and individuals communicate value and obtain desired results through the process of personal selling and customer relationship management, along with the role of sales management in the development of people and resource utilization within the firm. Pre- or Corequisite: MKTG 3433. (Typically offered: Fall and Spring)

\section*{MKTG 4353. Advanced Professional Selling. 3 Hours.}

Applies best practices of the selling process with hands-on and practical approaches to developing long-term business-to-business and business to customer relationships, communicating value and earning desired long-term results. The usage of role-play, involvement in sales competitions, sales data analytics and utilizing practitioner mentorships are key elements of this class with the goal of having the student be prepared to enter the sales field upon class completion. Prerequisite: MKTG 4343. (Typically offered: Irregular)

\section*{MKTG 4433. Retail Strategy. 3 Hours.}

Concentrates on planning to meet the objectives and satisfy the retail marketing concept. Attention is devoted to retail format, competition among retail institutions, determination of store location, merchandise lines, atmospherics, and levels of customer service provided with the sale of consumer products. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

\section*{MKTG 4443. Retail Buying and Merchandise. 3 Hours.}

Examination of supplier and buyer responsibilities and decisions associated with product assortment depth, budgets, promotions, inventory investment and control, and gross margin management for consumer goods including apparel, food, and durables. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

\section*{MKTG 4453. New Product Development. 3 Hours.}

The course is structured along the three main dimensions of new product development: designing, manufacturing, and marketing of new products. An analytical approach is taken consistent with current thinking and practice of the industry. Students learn the best approaches from a marketing manager's perspective to effectively manage the NPD process. Prerequisite: MKTG 3433. (Typically offered: Fall)

\section*{MKTG 450V. Independent Study. 1-3 Hour.}

The Marketing Independent Study course permits students on an individual basis to explore select topics in Marketing and Retail. Independent study projects will explore topics relevant for marketing and retail that typically are not covered in the existing curriculum. Prerequisite: Junior standing. (Typically offered: Irregular)

MKTG 4513. Nonprofit Marketing. 3 Hours.
This course is designed to give students a deeper understanding of marketing in the nonprofit sector, how it functions and how nonprofit marketing differs from traditional for profit marketing through leadership opportunities. Students will work with local nonprofits on various marketing projects throughout the semester. The class will use a service learning model of instruction where students take a leadership role in project development and execution. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

\section*{MKTG 4633. Global Marketing. 3 Hours.}

Examines differences in global environment; how cultural considerations, political, legal, and economic conditions affect market entry strategies and marketing mix decisions; development of marketing plan for global environments. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

\section*{MKTG 4733. Social Media and Marketing. 3 Hours.}

Social media and marketing will explore different strategies to develop and execute a successful social media plan for various businesses. The class will also teach students how to create engaging content, manage social media accounts, track social media metrics, and leverage social media advertising to reach their target audience. Students will also learn about the different social media platforms and how to choose the right ones for various businesses. By the end of the course, students will have a comprehensive understanding of social media marketing and the tools and techniques to build and manage a strong social media presence for businesses. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)

\section*{MKTG 4853. Marketing Management. 3 Hours.}

Strategic planning and management of the marketing function within the firm from a managerial viewpoint. Focus on the development and management of marketing strategies and tactics related to product, pricing, promotion, and distribution decisions. Prerequisite: MKTG 3633 and MKTG 3553. (Typically offered: Fall and Spring)

\section*{MKTG 4933. Search Marketing. 3 Hours.}

A thorough examination of prevalent strategies, tactics, and tools used by today's marketers to generate qualified search traffic for their websites, content, ecommerce pages, and other digital properties. With a focus on the most powerful search and e-commerce platforms today, including Google, YouTube, Amazon, and Walmart.com, this course will demonstrate how effective content creation, search engine optimization (SEO), and search engine marketing (i.e., paid search) can help marketers accrue traffic, capture leads, drive sales, and grow a business. Prerequisite: MKTG 3433. (Typically offered: Fall and Spring)
MKTG 5103. Introduction to Marketing. 3 Hours.
Introduction to marketing concepts and practices as applied to the retail consumer environment. Focuses on the strategic development, positioning, and management of products, promotion, distribution, pricing, and store environments in building customer relationships from retailer and supplier perspectives. (Core) (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MKTG 5223. Marketing. 3 Hours.}

Product management, market research, marketing communications, retailing and distribution, consumer behavior, and social and ethical implications of marketing. (Typically offered: Fall)

\section*{MKTG 5333. Retailing Strategy and Processes. 3 Hours.}

Strategic planning and operation of retailing organizations. Investigation of the various types of retailing with emphasis on both the strategic and functional aspects in retail processes. (Typically offered: Spring)

\section*{MKTG 5343. Digital Marketing. 3 Hours.}

As an increasing number of companies embracing the digital world (e.g., online advertising and e-commerce), there is a growing need for marketers to understand the implications and interruptions brought by this change. (Typically offered: Irregular)

MKTG 5353. Category Management and Assortment. 3 Hours.
Category Management is a collaborative continuous process between manufacturers and retailers to manage a Shopper need state which we refer to as a 'category'.
The purpose of this process is to optimize shopper satisfaction and fulfill the role chosen by the retailer (store and online) for that category within the overall portfolio of categories in the retail format. The end state of the category management process is that combination of assortment, price, shelf presentation and promotion which optimizes the category role over time. (Typically offered: Irregular)

\section*{MKTG 5413. Special Topics in Marketing. 3 Hours.}

Seminar in special topics in marketing. Topics vary depending on the instructor. Prerequisite: Graduate Standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{MKTG 5433. Consumer and Market Research. 3 Hours.}

Modern marketing research methods and analyses applied to consumers, shoppers, and buyers of goods and services sold in competitive retail environments. Attention is given to both quantitative and qualitative methods, analyses, interpretation, and decision making. Prerequisite: MKTG 5103. (Typically offered: Fall)

\section*{MKTG 5513. Sales Analytics. 3 Hours.}

Recent years have witnessed increasing competitive pressures along with an explosion in the quantity and quality of data available. Big Data is rapidly changing how we view and analyze problems to make decisions in the marketplace. Whether a firm is consumer, business or service-oriented, acquiring and using information on its customers, competitors, and markets is critical for sales planning and decisionmaking. This course will emphasize how to analyze data to support and guide sales decisions. (Typically offered: Irregular)

\section*{MKTG 5523. Marketing Analytics. 3 Hours.}

This course is intended to teach students how to use data analytics to improve marketing decision making at every stage of the Strategic Marketing Process. The focus will be on the skills and tools needed to obtain, process, and analyze data to formulate and answer critical marketing questions and make managerial recommendations. This is a hands-on course that employs real-world databases, lectures, cases, and exercises. Prerequisite: MKTG 5103. (Typically offered: Spring)

\section*{MKTG 5553. New Product Development and Strategy. 3 Hours.}

Behavioral and social science concepts applied to retail shoppers, buyers, and consumers of products and services. Attention is given to research on the cognitive, affective, and experiential aspects involved in the acquisition, consumption, and disposal of products and services by individuals and households. Prerequisite: MKTG 5103. (Typically offered: Irregular)

\section*{MKTG 5563. Retail Strategy. 3 Hours.}

The purpose of this course is to investigate the changing landscape of the retail industry. It should be noted that "retail" is an incredibly broad topic covering everything from consumer insights to supply chain to sales management. Retail is currently experiencing somewhat of a revolution as companies experiment with new technology, innovative ways to make shopping more enjoyable, or ways of engaging the customer in a way they are not likely to forget. This course will be based on identification and discussion of new trends that emerge in the retail environment. Prerequisite: MKTG 5223. (Typically offered: Spring)

\section*{MKTG 5573. Advanced Marketing Analytics. 3 Hours.}

This course is intended to advance students' knowledge in data analytics to improve marketing decision making at every stage of the Strategic Marketing Process. This is an advanced course focused on the skills and tools needed to obtain, process, and analyze data to formulate and answer critical marketing questions and make managerial recommendations. We will provide an in-depth coverage on a variety of advanced analytical models and emphasize their applications to real-world marketing problems. (Typically offered: Irregular)

MKTG 5583. Social Media Marketing. 3 Hours.
Social media is changing how business is done around the world in almost every industry. Many companies have embraced social media as a strategic component in their promotion/communication mix (e.g., advertising, sales/trade promotion, personal selling, publicity/public relations), and in connecting brands to current, likeminded, and potential consumers. Identifying and engaging influencers via social media continues to grow as a major component in consumer communications, brand engagement, and promotion strategy. This course is designed to help you understand how marketing has (and has not) changed due to the rise of social media and changes in various underlying contextual factors, such as dramatically increased speed of information dissemination across consumers and brands. Prerequisite: Graduate Standing. (Typically offered: Spring)

\section*{MKTG 636V. Special Problems in Marketing. 1-6 Hour.}

Individual research problems. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{MKTG 6413. Special Topics in Marketing. 3 Hours.}

Seminar in special topics in marketing. Topics vary depending upon the instructor. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{MKTG 6433. Seminar in Research Methods. 3 Hours.}

Extensive review of literature illustrative of marketing research studies. Focuses upon theoretical foundations of research design, methodology, and analysis as well as interpretation of univariate, bivariate, and multivariate data in marketing theory exploration. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{MKTG 6443. Seminar in Marketing Theory. 3 Hours.}

Comprehensive survey and critical review of the history of marketing thought and contemporary schools of thought in marketing discipline. In-depth research, review, synthesis, and a research proposal will be required in a selected topic from the perspectives of advancing marketing theory. (Typically offered: Irregular)

MKTG 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{Materials Science and Engineering (MSEN) \\ Courses}

MSEN 488V. Materials Science and Engineering Undergraduate Research. 1-3 Hour.
Special research topics associated with undergraduates enrolled in the Materials Science and Engineering minor program, or by special permission of the MSEN Director to undergraduate students engaged in research with MSEN faculty members. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{MSEN 5253. Emerging Technologies in Industry. 3 Hours.}

Business leaders present technologies used by their companies. Focusing on Arkansas-based companies, technology needs for the industry and innovative ideas for solutions or advancements are discussed. Students work to develop solutions to address company needs or further develop a company's current technology. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

MSEN 5313. Fundamentals of Materials Science. 3 Hours.
Fundamentals of Materials Science provides an overview of materials science and engineering and is foundational for graduate study in the field. The structures of materials at the atomic scale, nanoscale, microscale, and macroscale are studied and the impact of this organization of matter on its physical and chemical properties are examined. Principles for measurement and characterization of material structure and properties are introduced. Emphasis is placed on materials important for use for electronic, photonic, energy, and biological applications. Advances in nanoscale materials as established fundamentals of macroscale structural materials are covered. Prerequisite: Graduate standing or consent of the instructor. (Typically offered: Fall)

\section*{MSEN 5322. Materials Characterization. 2 Hours.}

Lecture and hands-on experience for using characterization tools to study the properties of materials. Techniques covered will include x-ray diffraction, x-ray photoelectron spectroscopy, scanning electron microscope, transmission electron microscope, and others. Use of these techniques for studies of material failure and reliability will also be examined. Corequisite: Lab component. Prerequisite: MSEN 5313 or instructor consent. (Typically offered: Fall)

MSEN 5383. Research Commercialization and Product Development. 3 Hours. This survey course examines research commercialization through analysis of IP, technology space, market space, manufacturability, financials, and business plans. Entrepreneurial behaviors and product development within large companies are also discussed. A case study using a current UA faculty member's research commercialization effort will be developed. Prerequisite: Graduate Standing. (Typically offered: Spring)

\section*{MSEN 5393. Product Development Process. 3 Hours.}

Demonstration of a student's technical and management knowledge integration by creating a commercially viable product development process to meet a new societal need, with the technical solution based on micro to nanoscale technology. Final grade based on a detailed written report and oral presentation to a panel. Non-thesis students only. Pre- or Corequisite: MSEN 5383. Prerequisite: Instructor permission. (Typically offered: Spring)
MSEN 5513. Applied Research in External Technical Organizations. 3 Hours. A one semester narrow focus graduate level research effort while working at an external technical organization's site. Requires a final report of style and quality suitable for journal submission. This course available only to Professional Path M.S. MSEN students, and may substitute for an MSEN 588V External Internship. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{MSEN 5523. Applied On-Campus Collaborative Research with External} Technical Organizations. 3 Hours.
A one semester narrow focus graduate level on-campus research effort performed in collaboration with an external technical organization. Requires a final report of style and quality suitable for journal submission. This course available only to Professional Path M.S. MSEN students. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{MSEN 555V. Internship in External Technical Organization. 1-3 Hour}

Used to document a MSEN grad student internship experience in an external technical organization for a minimum duration of six weeks ( \(6-9\) weeks=one hour, 10-12 weeks=two hours, and 13-15 weeks=three hours). It may not be used to meet the research requirements of a M.S. degree. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

MSEN 5611. Research Communication Seminar of MS Students. 1 Hour. This course serves as a forum for MS students to develop oral presentation skills and to exchange research ideas. Research presentations will be on various topics in the area of micro to nanoscale materials, processing, and devices, with research management and planning also being addressed. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

MSEN 5713. Advanced Nanomaterials Chemistry. 3 Hours.
Science and engineering graduates are using more nanomaterials, and modern industry demands that its scientists and engineers have materials chemistry knowledge. Materials from the micro to nanoscale will be examined in this course from the perspective of fundamental chemistry principles to build a picture of tomorrow's materials. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{MSEN 5733L. Fabrication at the Nanoscale. 3 Hours.}

This hands-on lab course will cover the disciplines needed to make active electronic and photonic devices utilizing nanoscale structures and fabrication techniques presently used in research and industry. Prerequisite: Graduate standing and permission of the instructor. (Typically offered: Spring)

MSEN 5811. 1st Year Operations Seminar - Infrastructure Management. 1 Hour. Weekly seminar for 1st year Materials Science and Engineering graduate students to discuss issues that increase professional performance in technology-centered organizations. The discussions will focus on issues that affect organizational infrastructure, career planning, organizational structures, and may include examples from current events. Prerequisite: Graduate standing. (Typically offered: Fall)

MSEN 5821. Ethics for Scientists and Engineers. 1 Hour.
This course will introduce methods useful in the practice of ethical decision making in the high technology academic and industrial work place. An emphasis will be placed on applying the methods discussed in the text to student and instructor past professional experiences. Prerequisite: Graduate standing. (Typically offered: Summer)

MSEN 587V. Special Topics in Materials Science and Engineering. 1-4 Hour. Consideration of current materials science and engineering topics not covered in other courses. One section will be created for each topic only after a syllabus is submitted to the MSEN office by the faculty member teaching the course. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

MSEN 5911. 1st Year Operations Seminar - Personnel Management. 1 Hour. Weekly seminar for 1st year Materials Science and Engineering graduate students to discuss issues that increase professional performance in technologycentered organizations. The discussions will focus on issues that affect personnel management, team building and structures, and may include examples from current events. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{MSEN 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

MSEN 626V. Emerging Technologies in Industry Practicum. 1-3 Hour.
Students engage in demand-driven research projects inspired by Arkansas companies as part of the interdisciplinary IGNITE (Industry Generating New Ideas and Technology through Education) program. These projects, which often result from interactions with companies during MSEN 5253, include visiting company locations; developing project goals, budgets, and timelines; and performing research. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

\section*{MSEN 6313. Advanced Materials Science and Engineering. 3 Hours.}

This course will introduce students to the core principles of the design, nature and processing of advanced materials and the mechanisms of failure of materials. The course also integrates materials behavior and materials processing relevant to a wide range of industrial sectors while it covers traditional structural materials, functional materials, nanomaterials and biomaterials. Students learn to achieve enhanced functionality through convergence and integration of biological, organic, electronic, and structural materials; self-assembly creation of new materials; and tailoring of interfaces to produce nanocomposites. In this way, it will provide students with a depth of core knowledge and skills allowing students to make informed choices concerning applications, selection and design of advanced materials. Prerequisite: MSEN 5313 and permission of the Instructor. (Typically offered: Spring)

\section*{MSEN 6323. Materials Engineering Design. 3 Hours.}

This course will provide concrete training on the generation of a sound prototype design and R\&D plan, in addition to the generation of a quality proposal based on specific federal solicitation criteria. Finally, each student will pick a topic/prototype for which they will prepare a full preliminary design, R\&D plan and federal grant proposal from a list of real, suitable topics. The students will be required to follow the specific topic/solicitation instructions provided by the federal agency supporting the research. Prerequisite: Graduate standing or consent of the instructor. (Typically offered: Fall)

\section*{MSEN 6611. Research Communication Seminar of PhD Students. 1 Hour.}

This course serves as a forum for Ph.D. students to develop oral presentation skills and to exchange research ideas. Research presentations will be on various topics in the area of materials, processing, and devices, with research management and planning also being addressed. Prerequisite: Graduate standing. (Typically offered: Fall and Spring)

MSEN 6811. 2nd Year Operations Seminar - Management and Leadership. 1 Hour.
Weekly seminar for 2nd year Materials Science and Engineering graduate students to discuss issues that increase professional performance in technology-centered organizations. The discussions will focus on issues that affect management and leadership effectiveness and efficiency, and may include examples from current events. Prerequisite: Graduate standing. (Typically offered: Fall)

MSEN 6911. 2nd Year Operations Seminar - Advanced Management and Leadership. 1 Hour.
Weekly seminar for 2nd year Materials Science and Engineering graduate students to discuss advanced issues that increase professional performance in technologycentered organizations. The discussions will focus on the complex issues that affect management and leadership effectiveness and efficiency, and may include examples from current events. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{MSEN 700V. Doctoral Dissertation. 1-21 Hour.}

Doctoral dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Mathematics (MATH)}

\section*{Courses}

MATH 0001L. College Algebra Laboratory I. 1 Hour.
This course provides additional support and instruction for students enrolled in MATH 1203 who are required to take it based on the placement requirements stipulated for that course. Credit earned in this course will not be applied to the total hours required for a degree. One lab hour. (Typically offered: Fall, Spring and Summer)

\section*{MATH 0002L. College Algebra Laboratory II. 2 Hours.}

This course provides additional support and instruction for students enrolled in MATH 1203 who are required to take it based on the placement requirements stipulated for that course. Credit earned in this course will not be applied to the total hours required for a degree. Two lab hours. (Typically offered: Fall, Spring and Summer)

MATH 0131L. Quantitative Reasoning Laboratory. 1 Hour.
This course provides additional support and instruction for students enrolled in MATH 1313 who are required to take it based on the placement requirements stipulated for that course. Credit earned in this course will not be applied to the total hours required for a degree. One lab hour. (Typically offered: Fall, Spring and Summer)

MATH 1203. College Algebra (ACTS Equivalency = MATH 1103). 3 Hours. Topics include the solution and application of linear and quadratic equations and inequalities; functions, graphs, and theory of equations; matrix solutions of systems of equations and basic properties of matrices. Prerequisite: A score of at least 46 on ALEKS, at least 22 on the math component of the ACT exam, at least 540 on the math component of the new SAT or old SAT, at least 63 on the Accuplacer Classic College Math, at least 263 on the Accuplacer Next Generation QAS, at least 254 on the Accuplacer NG AAF, or at least 66 on the Compass Algebra. Students who score at least 30 on ALEKS, at least 19 on the math component of the ACT exam, at least 510 on the math component of the new SAT or 460 on the math component of the old SAT, at least 42 on the Accuplacer Classic College Math, at least 255 on the Accuplacer Next Generation QAS, at least 235 on the Accuplacer NG AAF, or at least 41 on the Compass Algebra must also register for MATH 0001L as a corequisite. Students who score below 30 on ALEKS, below 19 on the math component of the ACT exam, below 510 on the math component of the new SAT or 460 on the math component of the old SAT, below 42 on the Accuplacer Classic College Math, below 255 on the Accuplacer Next Generation QAS, below 235 on the Accuplacer NG AAF, or below 41 on the Compass Algebra must also register for MATH 0002L as a corequisite. (Typically offered: Fall, Spring and Summer)

MATH 1213. Plane Trigonometry (ACTS Equivalency = MATH 1203). 3 Hours. Basic topics in trigonometry including identities, formulas, and polar coordinate system. Credit will be allowed for only one of either MATH 1213 or MATH 1284C. Prerequisite: MATH 1203 or MATH 1204 with a grade of C or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

MATH 1284C. Precalculus Mathematics (ACTS Equivalency = MATH 1305). 4 Hours.
Topics in algebra and trigonometry. To be taken by students who expect to take MATH 2554. Corequisite: Drill component. Prerequisite: MATH 1203 with a grade of \(C\) or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

\section*{MATH 1313. Quantitative Reasoning (ACTS Equivalency = MATH 1113). 3} Hours.

Reasoning about quantitative information, and the use of mathematical tools and models as citizens, consumers, entrepreneurs and employees in today's complex technological society. Topics include modeling with functions; quantity, measurement and indices; finance; counting, probability, odds and risk. Prerequisite: A score of at least 40 on ALEKS, at least 19 on the ACT exam, at least 510 on the math component of the newSAT, at least 460 on the math component of the old SAT, at least 42 on the Accuplacer Classic College Math, at least 255 on the Accuplacer Next Generation QAS, at least 235 on the Accuplacer Next Generation AAF, or at least 41 on Compass Algebra. Students who score below 40 on ALEKS, below 19 on the math component of the ACT exam, below 510 on the math component of the new SAT, below 460 on the math component of the old SAT, below 42 on the Accuplacer Classic College Math, below 255 on the Accuplacer Next Generation QAS, below 235 on the Accuplacer Next Generation AAF, or below 41 on Compass Algebra must also register for MATH 0131L as a corequisite. (Typically offered: Fall and Spring)

MATH 1514. Calculus with Algebra and Trigonometry I. 4 Hours.
Topics in algebra, trigonometry and precalculus are integrated with elementary differential calculus. Part of a two semester sequence with MATH 2514; these two courses together are equivalent to MATH 1284C and MATH 2554C. MATH 1514 BY ITSELF NOT EQUIVALENT TO EITHER MATH 1284C OR MATH 2554C. This course must be taken with MATH 2514. Intended for students who place into MATH 1284C, but who would profit from an earlier exposure to calculus concepts. Closed to students with credit for MATH 2554C. Prerequisite: MATH 1203 with a grade of \(C\) or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall)
MATH 2043. Survey of Calculus (ACTS Equivalency = MATH 2203). 3 Hours. Selected topics in elementary calculus and analytic geometry for students in business, agriculture, and social sciences. Credit will be allowed for only one of MATH 2043 and MATH 2554. Prerequisite: MATH 1203 or MATH 1204 or MATH 1213 or MATH 1284C or MATH 2053 with a grade of \(C\) or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

\section*{MATH 2053. Finite Mathematics. 3 Hours.}

Selected topics in probability and statistics, review of algebraic matrices, and graphic analysis of linear programming for students in business, agriculture, and social sciences. Prerequisite: MATH 1203 or MATH 1213 or MATH 1284C or MATH 2043 with a grade of \(C\) or better, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

MATH 2183. Mathematical Reasoning in a Quantitative World. 3 Hours. Mathematical and statistical reasoning are required in contexts of growing complexity and sophistication. The purpose of this course is to cause students to possess the power and habit of mind to search out quantitative information, critique it, reflect upon it, and apply it in their public, personal and professional lives. Prerequisite: MATH 1203, or MATH 1313, or a score of at least 60 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall and Spring)

\section*{MATH 2213. Survey of Mathematical Structures I. 3 Hours.}

Sets and logic, systems of numerations, number systems and operations, and elementary number theory. Prerequisite: A grade of \(C\) or better in any of MATH 1203, MATH 1213, MATH 1284C, MATH 1313, MATH 2043, MATH 2053, MATH 2183 or MATH 2554, or a score of at least \(80 \%\) on the University of Arkansas Mastery of Algebra Exam, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

MATH 2223. Survey of Mathematical Structures II. 3 Hours.
Geometry and measurement, and statistics and probability. Prerequisite: A grade of C or better in MATH 2213. (Typically offered: Fall, Spring and Summer)

MATH 2445. Calculus I with Review (ACTS Equivalency = MATH 2405). 5 Hours. Derivative of functions of one variable, applications of the derivative, introduction of the integral, and applications. Credit will be allowed for only one of MATH 2445, MATH 2554 or MATH 2043. Prerequisite: MATH 1213 with a grade of \(C\) or better, or MATH 1284C with a grade of C or better, or a score of at least 70 on the Math Placement Test, or a score of at least 28 on the math component of the ACT exam, or a score of at least 640 on the math component of the old SAT or 660 on the math component of the new SAT, or a score of at least 2 on the Calculus AB or BC Advanced Placement Exam. (Typically offered: Fall, Spring and Summer) This course is equivalent to MATH 2554.

\section*{MATH 2514. Calculus with Algebra and Trigonometry II. 4 Hours.}

Continuation of MATH 1514. Topics in algebra, trigonometry and precalculus are integrated with elementary differential and integral calculus. Completion of MATH 1514 and MATH 2514 is equivalent to completion of MATH 1284C and MATH 2554C. This course is meant exclusively for students who have previously taken MATH 1514. MATH 2514 BY ITSELF NOT EQUIVALENT TO EITHER MATH 1284C OR MATH 2554C. Closed to students with credit for MATH 2554C. Prerequisite: MATH 1514 with a grade of C or better. (Typically offered: Spring)

\section*{MATH 2554. Calculus I (ACTS Equivalency = MATH 2405). 4 Hours.}

Derivative of functions of one variable, applications of the derivative, introduction of the integral, and applications. Credit will be allowed for only one of MATH 2554 and MATH 2043. Prerequisite: MATH 1213 with a grade of \(C\) or better, or MATH 1284C with a grade of \(C\) or better, or a score of at least 76 on the Math Placement Test, or a score of at least 28 on the math component of the ACT exam, or a score of at least 640 on the math component of the old SAT or 660 on the math component of the new SAT, or a score of at least 2 on the Calculus AB or BC Advanced Placement Exam. (Typically offered: Fall, Spring and Summer)

\section*{MATH 2554C. Calculus I (ACTS Equivalency = MATH 2405). 4 Hours.}

Derivative of functions of one variable, applications of the derivative, introduction of the integral, and applications. Credit will be allowed for only one of MATH 2554 and MATH 2043. Corequisite: Drill component. Prerequisite: MATH 1213 with a grade of C or better, or MATH 1284C with a grade of C or better, or a score of at least 76 on the Math Placement Test, or a score of at least 28 on the math component of the ACT exam, or a score of at least 640 on the math component of the old SAT or 660 on the math component of the new SAT, or a score of at least 2 on the Calculus AB or BC Advanced Placement Exam. (Typically offered: Fall, Spring and Summer) This course is equivalent to MATH 2554.

\section*{MATH 2554H. Honors Calculus I. 4 Hours.}

Topics in analytic geometry and calculus presented in a rigorous manner suitable for an honors student. Students may not receive credit for both MATH 2043 and MATH 2554. Prerequisite: Honors standing or departmental consent; and a score of at least 30 on the math component of the ACT exam, or a score of at least 680 on the math component of the old SAT or 710 on the math component of the new SAT. (Typically offered: Fall and Spring)
This course is equivalent to MATH 2554.

\section*{MATH 2564. Calculus II (ACTS Equivalency = MATH 2505). 4 Hours.}

Integral calculus of one variable and infinite series. Prerequisite: MATH 2554 with a grade of \(C\) or better. (Typically offered: Fall, Spring and Summer)

\section*{MATH 2564C. Calculus II. 4 Hours.}

Integral calculus of one variable and infinite series. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2554 with a grade of C or better. (Typically offered: Fall, Spring and Summer) This course is equivalent to MATH 2564.
MATH 2564H. Honors Calculus II. 4 Hours.
Integral calculus of one variable and infinite series. Prerequisite: MATH 2554 with a grade of A, or MATH 2554 H with a grade of A or B, or a score of 5 on the AP AB Calculus Exam. (Typically offered: Spring)
This course is equivalent to MATH 2564.

\section*{MATH 2574. Calculus III (ACTS Equivalency = MATH 2603). 4 Hours.}

Differential and integral calculus of several variables, and vector calculus.
Prerequisite: MATH 2564 with a grade of \(C\) or better. (Typically offered: Fall, Spring and Summer)

\section*{MATH 2574C. Calculus III. 4 Hours.}

Differential and integral calculus of several variables, and vector calculus. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2564 with a grade of \(C\) or better. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MATH 2574.
MATH 2574H. Honors Calculus III. 4 Hours.
Differential and integral calculus of several variables, and vector calculus.
Prerequisite: MATH 2564 with a grade of A, or MATH 2564 H with a grade of \(A\) or \(B\), or a score of 5 on the AP BC Calculus exam. (Typically offered: Fall and Spring) This course is equivalent to MATH 2574.

\section*{MATH 2584. Elementary Differential Equations. 4 Hours.}

First and second order ordinary differential equations, the Laplace transform, and matrix systems of ordinary differential equations. Prerequisite: MATH 2564 or MATH 2564C with a grade of C or better. (Typically offered: Fall, Spring and Summer)

\section*{MATH 2584C. Elementary Differential Equations. 4 Hours.}

First and second order ordinary differential equations, the Laplace transform, and matrix systems of ordinary differential equations. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2564 or MATH 2564C with a grade C or better. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MATH 2584.

\section*{MATH 2584H. Honors Elementary Differential Equations. 4 Hours.}

Topics in ordinary differential equations, systems of differential equations and the Laplace transform presented with an emphasis on modeling. Prerequisite: MATH 2564 with a grade of A, or MATH 2564 H with a grade of A or B, or a score of 5 on the AP BC Calculus exam. (Typically offered: Irregular) This course is equivalent to MATH 2584.

MATH 2603. Discrete Mathematics. 3 Hours.
Introductory study of sets, relations, logic, proofs, algorithms, counting methods, graph theory, trees, and Boolean algebras. Prerequisite: MATH 2554 with a grade of C or better or the equivalent. (Typically offered: Fall, Spring and Summer)
MATH 2801L. Transition to Advanced Mathematics Laboratory. 1 Hour. Introduction to mathematical software and application to career opportunities in mathematics. Pre- or corequisite: MATH 2803. (Typically offered: Fall and Spring)

\section*{MATH 2803. Transition to Advanced Mathematics. 3 Hours.}

An introduction to concepts encountered in advanced mathematics. Emphasis is placed on developing the student's problem solving skills and ability to correctly communicate abstract concepts. Topics to include set theory, logic, relations, functions and mathematical induction presented in the context of intriguing mathematical problems. Pre- or Corequisite: MATH 2801L and (MATH 2554 or MATH 2554C). (Typically offered: Fall and Spring)

\section*{MATH 2903. Functions, Foundations and Models. 3 Hours.}

An in-depth study of topics from secondary school mathematics, emphasizing the development of the concept function, function patterns in data sets, connections among the main topics associated with a secondary school curriculum, and the appropriate use of technology. Pre- or Corequisite: MATH 2564 or MATH 2564C. (Typically offered: Fall and Spring)

MATH 3013. Introduction to Probability. 3 Hours.
A calculus-based introduction to probability. Discrete probability spaces and counting techniques, discrete and continuous probability distributions, random variables, random samples, law of large numbers, central limit theorem. Prerequisite: MATH 2564 or MATH 2564C. (Typically offered: Fall, Spring and Summer) This course is cross-listed with STAT 3013.

\section*{MATH 3083. Linear Algebra. 3 Hours.}

Systems of linear equations, vector spaces, linear transformations, matrices, and determinants. Only one of MATH 3083 and MATH 3093 will count for credit.
Prerequisite: MATH 2554 or MATH 2043, with a grade of C or better. (Typically offered: Fall, Spring and Summer)

\section*{MATH 3093. Abstract Linear Algebra. 3 Hours.}

A proof-based course on vector spaces, linear transformations, matrices, determinants, eigenspaces and eigenvalues, with applications. Recommended for mathematics majors. Only one of MATH 3083 and MATH 3093 may be counted for credit. Pre- or Corequisite: MATH 2564 with a C or better. Prerequisite: MATH 2803 with a C or better. (Typically offered: Fall and Spring)
MATH 3103. Combinatorics. 3 Hours.
Basic combinatorial techniques including the study of the principle of inclusion and exclusion and generating functions. Additional topics may include modular arithmetic, algebraic coding theory, Polya's method of enumeration, and an introduction to abstract algebraic structures. Prerequisite: MATH 2603 or MATH 2803. Pre- or Corequisite: MATH 3083 or MATH 3093. (Typically offered: Fall and Spring)

\section*{MATH 3113. Introduction to Abstract Algebra I. 3 Hours.}

Introduction to algebraic structures with emphasis on rigorous justification of results. Prerequisite: MATH 2803 with a grade of C or better; and MATH 3083 or MATH 3093 with a grade of C or better. (Typically offered: Fall and Spring)

MATH 3133. History of Mathematics. 3 Hours.
Survey of the development of mathematical ideas from the ancient to the modern times. Prerequisite: MATH 2554, and MATH 2603 or MATH 2803, both with a grade of \(C\) or better. (Typically offered: Spring)

MATH 3203. Number Theory. 3 Hours.
Topics in elementary number theory. Prerequisite: MATH 2554, and MATH 2603 or MATH 2803, both with a grade of C or better. (Typically offered: Irregular)

MATH 3513. Elementary Analysis. 3 Hours.
A first rigorous course in analysis. The formal basis of the real number system, sequences and series, the Bolzano-Weierstrass Theorem, limits and continuity, the Intermediate Value Theorem, Rolle's Theorem, differentiation, the Mean Value Theorem and its consequences, Taylor's Theorem, L'Hopital's rules, convexity, Riemann integration, the Fundamental Theorem of Calculus. Only one of MATH 3513 and MATH 4513 may be counted for credit toward the major. Prerequisite: A grade of \(C\) or better in each of MATH 2554 or MATH 2554C, MATH 2564 or MATH 2564C, MATH 2574 or MATH 2574C, MATH 3083 or MATH 3093, and MATH 2803. (Typically offered: Fall)

MATH 3583. Foundations of Applied Mathematics. 3 Hours.
Introduction to the derivation and analysis of physical models. Topics include dimensional analysis, perturbation methods, the method of characteristics, continuum mechanics, and elastic, material and fluid equations. Case studies come from biology, fluid dynamics, engineering, chemistry and other areas. Prerequisite: MATH 2574 and MATH 2584. (Typically offered: Fall)
MATH 3773. Foundations of Geometry I. 3 Hours.
Axiomatic method; Euclidean geometry; non-Euclidean geometry. Prerequisite: MATH 2554, and MATH 2603 or MATH 2803, each with a grade of \(C\) or better. (Typically offered: Fall)

\section*{MATH 399VH. Honors Mathematics Course. 1-6 Hour.}

Honors thesis research and writing under the direction of a faculty member in the department. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

\section*{MATH 400V. Directed Readings. 1-7 Hour.}

Directed readings. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 7 hours of degree credit.

MATH 405V. Internship in Professional Practice. 1-3 Hour.
Professional work experience involving significant use of mathematics or statistics in business, industry or government. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{MATH 4103. Advanced Linear Algebra. 3 Hours.}

Linear functionals, matrix representation of linear transformations, scalar product, and spectral representation of linear transformations. Prerequisite: MATH 3083 or MATH 3093. (Typically offered: Irregular)

\section*{MATH 4113. Introduction to Abstract Algebra II. 3 Hours.}

Topics in abstract algebra including finite abelian groups, linear groups, factorization in commutative rings and Galois theory. Prerequisite: MATH 3113. (Typically offered: Spring)

\section*{MATH 4153. Mathematical Modeling. 3 Hours.}

Mathematical techniques for formulating, analyzing, and criticizing deterministic models taken from the biological, social, and physical sciences. Techniques include graphical methods, stability, optimization, and phase plane analysis. Prerequisite: MATH 2584. (Typically offered: Irregular)

MATH 4163. Dynamic Models in Biology. 3 Hours.
Mathematical and computational techniques for developing, executing, and analyzing dynamic models arising in the biological sciences. Both discrete and continuous time models are studied. Applications include population dynamics, cellular dynamics, and the spread of infectious diseases. Prerequisite: MATH 2554. (Typically offered: Irregular)
This course is cross-listed with BIOL 4163.

\section*{MATH 4253. Symbolic Logic I. 3 Hours.}

Rigorous analyses of the concepts of proof, consistency, equivalence, validity, implication, and truth. Full coverage of truth-functional logic and quantification theory (predicate calculus). Discussion of the nature and limits of mechanical procedures (algorithms) for proving theorems in logic and mathematics. Informal accounts of the basic facts about infinite sets. Prerequisite: MATH 2603, MATH 2803, or PHIL 2203. (Typically offered: Fall)
This course is cross-listed with PHIL 4253.

\section*{MATH 4303. Ordinary Differential Equations. 3 Hours.}

Existence, uniqueness, stability, qualitative behavior, and numerical solutions.
Prerequisite: MATH 2584 and (MATH 4513 or MATH 3513). (Typically offered: Fall)

\section*{MATH 4343. Introduction to Scientific Computing. 3 Hours.}

Provides an understanding of a diverse set of problems, as well as algorithms for solving them and implementing the algorithms using high performance computing resources and environments. The emphasis is on problem solving and offers multiple projects concerning applications in science and engineering. Prerequisite: MATH 3083 or MATH 3093. (Typically offered: Spring)

\section*{MATH 4353. Numerical Linear Algebra. 3 Hours.}

Numerical methods for problems of linear algebra, including the solution of very large systems, eigenvalues, and eigenvectors. Prerequisite: MATH 3083 or MATH 3093. (Typically offered: Spring)

MATH 4363. Numerical Analysis. 3 Hours.
General iterative techniques, error analysis, root finding, interpolation, approximation, numerical integration, and numerical solution of differential equations. Prerequisite: MATH 2584. (Typically offered: Fall)

MATH 4373. Finite Element Methods and Solution of Sparse Linear Systems. 3 Hours.
Provides an in-depth understanding of numerical methods for the solution of partial differential equations using Finite Element Methods, Direct and Iterative Methods for the Sparse Linear Systems. Prerequisite: MATH 4353. (Typically offered: Spring)

MATH 4403. Numerical Linear Algebra II. 3 Hours.
Provides an in-depth understanding of numerical methods for the solution of large scale eigenvalue problems arising in science and engineering applications including theory, implementation and applications. Prerequisite: MATH 4353. (Typically offered: Fall)
MATH 4423. Introduction to Partial Differential Equations. 3 Hours.
Separation of variables, Fourier transform, and Laplace transform methods for the solution of partial differential equations. Topics include Fourier series, Fourier-Bessel series, orthogonal expansions, and the error function. Prerequisite: MATH 2584 or MATH 2584C with a grade of C or better; and MATH 2574 with a grade of \(C\) or better. (Typically offered: Fall, Spring and Summer)

\section*{MATH 4443. Complex Variables. 3 Hours.}

Complex analysis, series, and conformal mapping. Additional applications for graduate credit. Prerequisite: MATH 2603 or MATH 2803, and MATH 2584 or MATH 2584C. (Typically offered: Fall)
MATH 4503. Differential Geometry. 3 Hours.
Topics include: classical differential geometry of curves and surfaces in 3-space, differential forms and vector fields. Prerequisite: MATH 2574 or MATH 2574C. (Typically offered: Irregular)

\section*{MATH 4513. Advanced Calculus I. 3 Hours.}

The real and complex number systems, basic set theory and topology, sequences and series, continuity, differentiation, and Taylor's theorem. Emphasis is placed on careful mathematical reasoning. Only one of MATH 3513 and MATH 4513 may be counted for credit toward the major. Prerequisite: MATH 2574, MATH 2803 and MATH 3083 or MATH 3093. (Typically offered: Fall and Spring)

\section*{MATH 4523. Advanced Calculus II. 3 Hours.}

The Riemann-Stieltjes integral, uniform convergence of functions, Fourier series, implicit function theorem, Jacobians, and derivatives of higher order. Prerequisite: MATH 4513. (Typically offered: Spring)

MATH 4703. Introduction to Point-Set Topology. 3 Hours.
A study of topological spaces including continuous transformations, connectedness and compactness. Prerequisite: MATH 4513. (Typically offered: Irregular)

\section*{MATH 4933. Mathematics Major Seminar. 3 Hours.}

Weekly seminars on topics of historical or cross-disciplinary interest, designed to address students' mathematical knowledge, problem-solving and communication skills, in which student presentations play a part. Also serves as a forum for sharing information about career opportunities and preparation for employment. Prerequisite: Senior standing and a mathematics major, or departmental consent. (Typically offered: Spring)

\section*{MATH 498V. Senior Thesis. 1-6 Hour.}

Senior thesis. (Typically offered: Fall, Spring and Summer)
MATH 499V. Research Topics in Mathematics. 1-3 Hour.
Current research interests in mathematics, at an advanced undergraduate or beginning graduate level. Prerequisite: Departmental consent. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.
MATH 5013. Abstract Algebra with Connections to School Mathematics. 3 Hours.
Basic structures of abstract algebra (rings, fields, groups, modules and vector spaces) with emphasis on rings and fields as generalizations of the ring of integers and field of rational numbers. Graduate degree credit will not be awarded for both MATH 4113 (or MATH 5123) and MATH 5013. Prerequisite: Graduate standing or departmental consent. (Typically offered: Irregular)

MATH 5023. Geometry with Connections to School Mathematics. 3 Hours.
School geometry from an advanced perspective including conformity to the Common Core State Standards for Mathematics. Study will include historical developments and geometry based on transformations of two- and three-dimensional space.
Prerequisite: Graduate standing. (Typically offered: Fall Odd Years)
MATH 5033. Advanced Calculus with Connections to School Mathematics Teaching. 3 Hours.

Rigorous development of the real numbers, continuity, differentiation, and integration. Graduate degree credit will not be awarded for both MATH 4513 (or MATH 5503) and MATH 5033. Prerequisite: Departmental consent. (Typically offered: Irregular)

\section*{MATH 504V. Special Topics for Teachers. 1-6 Hour.}

Current topics in mathematics of interest to secondary school teachers. Prerequisite: Graduate standing or departmental consent. (Typically offered: Irregular) May be repeated for degree credit.

\section*{MATH 5053. Probability \& Statistics with Connections to School Mathematics} 3 Hours.

An advanced perspective of probability and statistics as contained in the high school mathematics curriculum with connections to other components of school mathematics. The content is guided by the content of the high school probability and statistics of the Common Core State Standards for Mathematics. Prerequisite: Graduate standing. (Typically offered: Spring)

MATH 507V. Professional Development for Secondary Mathematics Teaching. 1-6 Hour.
Validated participation in professional development mathematics workshops or institutes sanctioned by national or international educational organizations such as the College Board, International Baccalaureate Program, and the National Board for Professional Teaching Standards. Prerequisite: Enrollment in Secondary Mathematics Teaching, MA degree program or departmental consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

MATH 510V. Mathematical Seminar. 1-3 Hour.
Members of the faculty and advanced students meet for presentation and discussion of topics. Prerequisite: Graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

\section*{MATH 5113. Introduction to Abstract Algebra II. 3 Hours.}

Topics in abstract algebra including finite abelian groups, linear groups, factorization in commutative rings and Galois theory. Graduate degree credit will not be given for both MATH 4113 and MATH 5113. Prerequisite: MATH 3113. (Typically offered: Spring)

MATH 5123. Algebra I. 3 Hours.
What the beginning graduate student should know about algebra: groups, rings, fields, modules, algebras, categories, homological algebra, and Galois Theory. Prerequisite: MATH 3113, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall)

MATH 5133. Algebra II. 3 Hours.
Continuation of MATH 5123. Prerequisite: MATH 5123, and graduate standing in mathematics or statistics. (Typically offered: Spring)

\section*{MATH 5153. Advanced Linear Algebra. 3 Hours.}

Linear functionals, matrix representation of linear transformations, scalar product, and spectral representation of linear transformations. Graduate degree credit will not be given for both MATH 4103 and MATH 5153. Prerequisite: Graduate standing. (Typically offered: Fall)

MATH 5163. Dynamic Models in Biology. 3 Hours.
Mathematical and computational techniques for developing, executing, and analyzing dynamic models arising in the biological sciences. Both discrete and continuous time models are studied. Applications include population dynamics, cellular dynamics, and the spread of infectious diseases. Graduate degree credit will not be given for both MATH 4163 and MATH 5163. Prerequisite: MATH 2554. (Typically offered: Irregular)

MATH 5213. Advanced Calculus I. 3 Hours.
The real and complex number systems, basic set theory and topology, sequences and series, continuity, differentiation, and Taylor's theorem. Emphasis is placed on careful mathematical reasoning. Graduate degree credit will not be given for both MATH 4513 and MATH 5213. Prerequisite: Graduate standing. (Typically offered: Fall)

MATH 5223. Advanced Calculus II. 3 Hours.
The Riemann-Stieltjes integral, uniform convergence of functions, Fourier series, implicit function theorem, Jacobians, and derivatives of higher order. Graduate degree credit will not be given for both MATH 4523 and MATH 5223. Prerequisite: MATH 4513 or MATH 5213 (formerly MATH 4513). (Typically offered: Spring)

MATH 525V. Internship in Professional Practice. 1-3 Hour.
Professional work experience involving significant use of mathematics or statistics in business, industry or government. Graduate degree credit will not be given for both MATH 405V and MATH 525V. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

MATH 5263. Symbolic Logic I. 3 Hours.
Rigorous analyses of the concepts of proof, consistency, equivalence, validity, implication, and truth. Full coverage of truth-functional logic and quantification theory (predicate calculus). Discussion of the nature and limits of mechanical procedures (algorithms) for proving theorems in logic and mathematics. Informal accounts of the basic facts about infinite sets. Graduate degree credit will not be given for both MATH 4253 and MATH 5263. Prerequisite: MATH 2603, MATH 2803, or PHIL 2203 (Typically offered: Fall)
This course is cross-listed with PHIL 5253.
MATH 5313. Partial Differential Equations. 3 Hours.
Laplace's equation, Heat equation, Wave Equation, Method of Characteristics. Prerequisite: MATH 4423, MATH 4513, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall)

MATH 5323. Partial Differential Equations II. 3 Hours.
Fourier Transforms, Sobolev Spaces, Elliptic Regularity. Prerequisite: MATH 5313 and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Spring)

\section*{MATH 5353. Mathematical Modeling. 3 Hours.}

Mathematical techniques for formulating, analyzing, and criticizing deterministic models taken from the biological, social, and physical sciences. Techniques include graphical methods, stability, optimization, and phase plane analysis. Graduate degree credit will not be given for both MATH 4153 and MATH 5353. Prerequisite: MATH 2584. (Typically offered: Irregular)

MATH 5363. Scientific Computation and Numerical Methods. 3 Hours.
An introduction to numerical methods used in solving various problems in engineering and the sciences. May not earn credit for this course and MATH 4353 or MATH 4363. Prerequisite: Graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall)
This course is cross-listed with PHYS 5363.
MATH 5373. Finite Element Methods and Solution of Sparse Linear. 3 Hours. Provides an in-depth understanding of numerical methods for the solution of partial differential equations using Finite Element Methods, Direct and Iterative Methods for the Sparse Linear Systems. Prerequisite: MATH 5393. (Typically offered: Spring)

\section*{MATH 5383. Numerical Analysis. 3 Hours.}

General iterative techniques, error analysis, root finding, interpolation, approximation, numerical integration, and numerical solution of differential equations. Graduate degree credit will not be given for both MATH 4363 and MATH 5383. Prerequisite: Graduate standing. (Typically offered: Fall)

MATH 5393. Numerical Linear Algebra. 3 Hours.
Numerical methods for problems of linear algebra, including the solution of very large systems, eigenvalues, and eigenvectors. Graduate degree credit will not be given for both MATH 4353 and MATH 5393. Prerequisite: Graduate standing. (Typically offered: Spring)
This course is equivalent to MATH 4353.

\section*{MATH 5403. Numerical Linear Algebra II. 3 Hours.}

Provides an in-depth understanding of numerical methods for the solution of large scale eigenvalue problems arising in science and engineering applications including theory, implementation and applications. Prerequisite: MATH 5393. (Typically offered: Fall)

MATH 5423. Introduction to Partial Differential Equations. 3 Hours.
Separation of variables, Fourier transform, and Laplace transform methods for the solution of partial differential equations. Topics include Fourier series, Fourier-Bessel series, orthogonal expansions, and the error function. Does not count towards degree credit in MATH. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

\section*{MATH 5443. Complex Variables. 3 Hours.}

Complex analysis, series, and conformal mapping. Graduate degree credit will not be given for both MATH 4443 and MATH 5443. Prerequisite: MATH 2603 or MATH 2803, and MATH 2584 or MATH 2584C. (Typically offered: Fall)

MATH 5453. Functional Analysis I. 3 Hours.
Banach Spaces, Hilbert Spaces, operator theory, compact operators, dual spaces and adjoints, spectral theory, Hahn-Banach, open mapping and closed graph theorems, uniform boundedness principle, weak topologies. Prerequisite: MATH 5513, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Spring Odd Years)

MATH 5503. Theory of Functions of a Real Variable I. 3 Hours.
Real number system, Lebesque measure, Lebesque integral, convergence theorems, differentiation of monotone functions, absolute continuity and the fundamental theorem of calculus L^P spaces, Holder and Minkowski inequalities, and bounded linear functionals on the L^P spaces. Prerequisite: MATH 4523 or MATH 5223 (formerly MATH 4523), and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall)

\section*{MATH 5513. Theory of Functions of a Real Variable II. 3 Hours.}

Measure and integration on abstract measure spaces, signed measures, Hahn decomposition, Radon-Nikdoym theorem, Lebesque decomposition, measures on algebras and their extensions, product measures, and Fubini's theorem. Prerequisite: MATH 5503, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Spring)

MATH 5523. Theory of Functions of a Complex Variable I. 3 Hours.
Complex numbers, analytic functions, power series, complex integration, Cauchy's Theorem and integral formula, maximum principle, singularities, Laurent series, and Mobius maps. Prerequisite: MATH 4513 or MATH 5213 (formerly MATH 4513). (Typically offered: Fall)

MATH 5533. Theory of Functions of a Complex Variable II. 3 Hours.
Riemann Mapping Theorem, analytic continuation, harmonic functions, and entire functions. Prerequisite: MATH 5523, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Spring)

MATH 5603. Differential Geometry. 3 Hours.
Topics include: classical differential geometry of curves and surfaces in 3-space, differential forms and vector fields. Graduate degree credit will not be given for both MATH 4503 and MATH 5603. Prerequisite: MATH 2574 or MATH 2574C. (Typically offered: Irregular)

\section*{MATH 5703. Topology I. 3 Hours.}

An introduction to topology. Topics include metric spaces, topological spaces and general point-set topology, homotopy and the fundamental group, covering spaces, the classification of surfaces. Prerequisite: MATH 4513 or MATH 5213 (formerly MATH 4513), and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall Even Years)

\section*{MATH 5713. Topology II. 3 Hours.}

The continuation of Topology I. Topics include: advanced homotopy and covering spaces, the Seifert-van Kampen theorem, homology and the Mayer-Vietoris sequence. Prerequisite: MATH 5703, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Spring Odd Years)

\section*{MATH 5723. Differential Topology I. 3 Hours.}

An introduction to the topology of smooth manifolds: applications of the inverse function theorem to smooth maps, Sard's theorem, transversality, intersection theory, degrees of maps, vector fields and differential forms on manifolds, integration on manifolds. Prerequisite: MATH 4513 or MATH 5213 (formerly MATH 4513) and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall Odd Years)

\section*{MATH 5733. Differential Topology II. 3 Hours.}

The continuation of Differential Topology I, with additional advanced topics. Possible advanced topics may include: Morse theory, de Rham cohomology theory, Poincare duality, Riemannian geometry, and Lie groups and Lie algebras. Prerequisite:
MATH 5723 and graduate standing in mathematics or statistics, or department consent. (Typically offered: Spring Even Years)

\section*{MATH 5803. Introduction to Point-Set Topology. 3 Hours.}

A study of topological spaces including continuous transformations, connectedness and compactness. Graduate degree credit will not be given for both MATH 4703 and MATH 5803. Prerequisite: MATH 4513 or MATH 5213 (formerly MATH 4513). (Typically offered: Irregular)

\section*{MATH 599V. Research Topics in Mathematics. 1-3 Hour.}

Current research interests in mathematics. Graduate degree credit will not be given for both MATH 499V and MATH 599V. Prerequisite: Departmental consent. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{MATH 610V. Directed Readings. 1-6 Hour.}

Directed readings. Prerequisite: Departmental consent. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

\section*{MATH 619V. Topics in Algebra. 1-6 Hour.}

Current research interests in algebra. Prerequisite: Graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{MATH 6203. Theory of Probability. 3 Hours.}

A rigorous mathematical treatment based on measure theory of the fundamental notions and results of the theory of probability. Topics covered include laws of large numbers, central limit theorems, conditional expectations. Additional topics that may be covered include martingales, Markov chains, Brownian motion and stochastic integration. Prerequisite: MATH 5513. (Typically offered: Fall)

\section*{MATH 6213. Mathematical Statistics. 3 Hours.}

A rigorous mathematical treatment of the fundamental principles and results in the theory of Statistics. Topics include exponential families of distributions, estimation of unknown parameters, the classical theory of theory of hypothesis testing, Large sample approximations, large sample properties of estimators. Prerequisite: MATH 6203. (Typically offered: Spring)

\section*{MATH 659V. Topics in Analysis. 1-6 Hour.}

Current research interests in analysis. Prerequisite: Graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{MATH 679V. Topics in Topology. 1-6 Hour.}

Current research interest in topology. Prerequisite: Graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{MATH 700V. Doctoral Dissertation. 1-18 Hour.}

Doctoral Dissertation. Prerequisite: Doctoral candidacy in mathematics. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Mechanical Engineering (MEEG)}

\section*{Courses}

MEEG 2003. Statics. 3 Hours.
Equilibrium and resultants of force systems in a plane and in space; analysis of structures, friction, centroids, moments of inertia, and virtual work method. Methods of analysis are emphasized. Corequisite: Drill component. Pre- or Corequisite: MATH 2574 or MATH 2574C. Prerequisite: PHYS 2054. (Typically offered: Fall, Spring and Summer)

\section*{MEEG 2013. Dynamics. 3 Hours.}

Kinematics and kinetics of particle and of rigid bodies; work and energy; impulse and momentum, and special topics. Corequisite: Drill component. Prerequisite: MEEG 2003 and MATH 2574. (Typically offered: Fall, Spring and Summer)

MEEG 2101. Computer-aided Design. 1 Hour.
The concept and application of solid-modeling, based on SolidWorks ComputerAided Design (CAD) software suite, are introduced in this course. They include sketches, parts modeling, assembly of parts, and drawing documentation. Prerequisite: GNEG 1121 or GNEG 1121H or GNEG 1103. (Typically offered: Fall and Spring)

\section*{MEEG 2103. Introduction to Machine Analysis. 3 Hours.}

Introduction to kinematics and kinetics of mechanisms, static and dynamic forces, gears and cam design and analysis. Recitation three hours per week and drill one hour per week. Corequisite: Drill component. Pre- or Corequisite: MEEG 2013. Prerequisite: PHYS 2054 and MEEG 2101. (Typically offered: Spring and Summer)

MEEG 2303. Introduction to Materials. 3 Hours.
A study of chemical, physical, and electrical properties of materials using fundamental atomistic approach. The materials of interest are: metals, polymers, ceramics, and composites. The interactive relationship between structure, properties, and processing of materials will be emphasized. For various engineering applications. Corequisite: Drill component. Prerequisite: MATH 2554, PHYS 2054 and CHEM 1103. (Typically offered: Fall and Spring)

MEEG 2403. Thermodynamics. 3 Hours.
A study of the 1st and 2nd laws of thermodynamics. Availability of energy, properties of liquids, gases, and vapors; nonflow and flow processes. Recitation 3 hours, drill 2 hours per week. Corequisite: Drill component. Prerequisite: PHYS 2054 and MATH 2564. (Typically offered: Fall, Spring and Summer)
MEEG 2703. Computer Methods in Mechanical Engineering. 3 Hours.
Use of computers and programming for solving engineering problems. Basic numerical methods including errors, equation solution, matrices, optimization, regression, integration, and differential equations. Corequisite: Drill component. Preor Corequisite: MATH 2584. (Typically offered: Spring and Summer)

\section*{MEEG 3013. Mechanics of Materials. 3 Hours.}

Stress and deformation of members in tension, compression, torsion, and bending, and the design of these members. Columns, statically indeterminate beams, and simple connections. Corequisite: Drill component. Prerequisite: MEEG 2003. (Typically offered: Fall, Spring and Summer)

MEEG 3013H. Honors Mechanics of Materials. 3 Hours.
Stress and deformation of members in tension, compression, torsion, and bending, and the design of these members. Columns, statically indeterminate beams, and simple connections. Corequisite: Drill component. Prerequisite: MEEG 2003 and honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MEEG 3013.

\section*{MEEG 3113. Fundamentals of Vibrations. 3 Hours.}

Time and frequency domain mathematical techniques for linear system vibrations are reviewed. Undamped system and viscously damped systems are analyzed. Equations of motion of single and multiple degrees-of-freedom systems are studied. Vibration of multi-degree-of-freedom systems are analyzed using modal analysis and modal summation methods. Eigenvalue problems as related vibrations are studied. Corequisite: Drill component. Prerequisite: MEEG 2103, MATH 2584 or MATH 2584C, MEEG 2703, and MEEG 2013. (Typically offered: Fall and Spring)
MEEG 3202L. Mechanical Engineering Laboratory I. 2 Hours.
Introduction to measurement, uncertainty, data acquisition, and instrumentation with an emphasis in materials and manufacturing. Corequisite: Drill component. Pre- or Corequisite: MEEG 3013 and ELEG 3903. Prerequisite: MEEG 2303 and PHYS 2074. (Typically offered: Fall and Spring)

\section*{MEEG 3212L. Mechanical Engineering Laboratory II. 2 Hours.}

Design and implementation of measurements, fabrication processes, data acquisition, and data analysis with emphasis in mechanical and fluid systems. Corequisite: Drill component. Prerequisite: MEEG 3202L, MEEG 3503 and MEEG 3113. (Typically offered: Fall and Spring)
MEEG 3223. Introduction to Mechatronics. 3 Hours.
This course is an introduction to design and control the mechatronic system, which requires integration of the mechanical and electrical knowledge within a unified framework. The topics covered in this course include basic electronics, diodes, transistors, power amplifiers, digital logic, operation amplifier, motor design, encoder, and programming in Arduino. Corequisite: Lab component. Prerequisite: MEEG 3202L. (Typically offered: Spring)

\section*{MEEG 3503. Mechanics of Fluids. 3 Hours.}

A study of fluids including fluid properties, pressure, and flow fields utilizing conservation of mass, energy, and momentum principles. Prerequisite: MEEG 2403 or CHEG 2313. Pre- or Corequisite: MATH 2584. (Typically offered: Fall and Summer)

\section*{MEEG 4003. Intermediate Dynamics. 3 Hours.}

Review of central-force motion of spacecraft, use of rotating reference frames, Coriolis acceleration. Kinematics of rigid bodies in 3-D space: velocities and accelerations in different moving reference frames, addition theorem of angular accelerations. Kinetics of rigid bodies in 3-D space: eigenvalues and eigenvectors of inertia matrices, momentum and kinetic energy of a rigid body in 3-D motion, Euler's equations of motion; precession, nutation, and spin of a gyroscope; forced steady precession, torque free steady precession, space cone, and body cone. Prerequisite: MEEG 2013. (Typically offered: Irregular)

\section*{MEEG 4023. Composite Materials: Analysis and Design. 3 Hours.}

A study of fibrous composite materials with emphasis on mechanical behavior, synthesis, and application. Topics include macro- and micromechanical analysis lamina, lamina theory, failure analysis in design, and manufacturing techniques. Prerequisite: MEEG 3013. (Typically offered: Irregular)

\section*{MEEG 4103. Machine Element Design. 3 Hours.}

This course introduces the static failure theories and fatigue failure theories, and how each of the theories can be applied in practical engineering problems in supporting the selection and design of machine elements. This course also introduces key design concepts, design principles, design process, and design guidelines for four commonly-used machine elements: spring, gear, bearing and shaft. Pre- or Corequisite: MEEG 3113. Prerequisite: MEEG 3013. (Typically offered: Fall, Spring and Summer)

\section*{MEEG 4103H. Honors Machine Element Design. 3 Hours.}

This course introduces the static failure theories and fatigue failure theories, and how each of the theories can be applied in practical engineering problems in supporting the selection and design of machine elements. This course also introduces key design concepts, design principles, design process, and design guidelines for four commonly-used machine elements: spring, gear, bearing and shaft. Advanced project required of honors students. Advanced project required. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MEEG 4103.

\section*{MEEG 4123. Finite Element Methods I. 3 Hours.}

Introduction to the use of the finite element method in mechanical engineering analysis and design. Use of commercial software to solve thermal and mechanical problems. Pre- or Corequisite: MEEG 3013 and MEEG 4413. (Typically offered: Irregular)

MEEG 4132. Professional Engineering Practices. 2 Hours.
Design proposal preparation, design codes, professional ethics, engineering economics, and the role of the engineer in society. Pre- or Corequisite: MEEG 4103 or MEEG 4483. (Typically offered: Fall and Spring)

\section*{MEEG 4143. Design for Safety. 3 Hours.}

This course provides an overview of safety engineering and a framework from which the students can evaluate and develop mechanical and thermal systems from a safety perspective. Pre- or Corequisite: MEEG 4413. Prerequisite: MEEG 3013. (Typically offered: Irregular)
MEEG 4153. Fundamentals of Mechanical Design. 3 Hours.
This class is designed to provide engineering students with a head start in industry as design engineers or working in an engineering related function. The course contents cover machine design and analysis experiences as related to working in industry and performing consulting work. Major topics include the design process, design procedures, fasteners, general design and numerous consulting experiences. A concept design exercise and two special design projects will be assigned to the students as homework. Prerequisite: MEEG 4103. (Typically offered: Fall)

\section*{MEEG 4173. Model-Based Systems Design and Analysis. 3 Hours.}

This course provides students with an introduction into the two main approaches to understanding and designing complex engineered systems. First, the course covers the unique technical challenge of systems engineering and design of systems. Second, the course covers concepts, methods and tools related to "model-based systems design." This covers formal modeling of the information content of complex systems. The third portion of the course will focus on modeling the complex behavior of the systems. This is often described as dynamical systems modeling. Students will utilize the methods and tools presented in class to model a complex engineered system of their choice (with instructor approval). The classes will alternate between presenting modeling methods to the students and students demonstrating their system to the class utilizing those methods. Students may not receive credit for both MEEG 4173 and MEEG 5173. Prerequisite: MEEG 4103 or Instructor consent. (Typically offered: Spring Even Years)

\section*{MEEG 4182. Creative Project Design I. 2 Hours.}

Students will select a capstone design project, and each student group will prepare a formal written proposal on their project for presentation to a panel of judges. This group project will be carried to completion in MEEG 4192. Corequisite: MEEG 4483. Prerequisite: MEEG 4103 and MEEG 3212L. (Typically offered: Fall and Spring)

\section*{MEEG 4192. Creative Project Design II. 2 Hours.}

Students choose their capstone project from a list of approved engineering problems. During the course of two semesters, students will learn and apply the design process along with project management skills to deliver the solution on time and on budget as a team. For the first semester (CP1) the team will focus on design of the best solution and development of a complete engineering package necessary to move forward. In the final semester (CP2) the team will implement and test the performance of their solution. Prerequisite: MEEG 4182. (Typically offered: Fall and Spring)

MEEG 4202L. Mechanical Engineering Laboratory III. 2 Hours.
Application of measurement techniques to mechanical engineering problems which emphasize mechanical and thermal systems. Corequisite: Drill component. Pre- or corequisite: MEEG 4483. Prerequisite: MEEG 3212L and MEEG 4103. (Typically offered: Fall, Spring and Summer)

\section*{MEEG 4213. Control of Mechanical Systems. 3 Hours.}

Mathematical modeling for feedback control of dynamic mechanical systems with design techniques using LaPlace transforms, state variables, root locus, frequency analysis, and criteria for performance and stability. Prerequisite: MEEG 3113. (Typically offered: Irregular)
MEEG 4233. Microprocessors in Mechanical Engineering I: Electromechanical Systems. 3 Hours.
Microcomputer architectural, programming, and interfacing. Smart product design (microprocessor-based design). Control of DC and stepper motors and interfacing to sensors. Applications to robotics and real-time control. Mobile robot project. Digital and analog electronics are reviewed where required. Prerequisite: ELEG 3903. (Typically offered: Irregular)

\section*{MEEG 4253. Introduction to Robotics. 3 Hours.}

This course serves as an introduction to robotics. The course covers the historical development of robotics as a field, and as mechatronic systems, the importance of integrating sensors, actuators and end-effectors. Topics covered in this course will include but not limited to the following: mathematical modeling of robots, rigid motions and homogeneous transformation, forward/inverse kinematics, and velocity kinematics. Prerequisite: MEEG 2703, MEEG 3113 and instructor consent. (Typically offered: Fall)

\section*{MEEG 4303. Materials Laboratory. 3 Hours.}

A study of properties, uses, testing, and heat treatment of basic engineering materials and related analytical techniques. Corequisite: Lab component. Prerequisite: MEEG 2303. (Typically offered: Irregular)

MEEG 4313. Introduction to Tribology. 3 Hours.
A study of science and technology of interacting surfaces in relative motion. Topics include solid surface characterization, contact between solid surfaces, adhesion, friction, wear, lubrication, micro/nanotribology, friction and wear screening test methods, and tribological components and applications. Prerequisite: MEEG 3013 and MEEG 3503 or graduate standing. (Typically offered: Irregular)

\section*{MEEG 4333. Hybrid Electric Vehicles. 3 Hours.}

This course is intended to provide an introduction to basics of hybrid and pure electrical vehicles (mainly passenger cars), covering history, architecture, constituents, working mechanisms, and key technologies. The course focuses on fundamental concepts of different hybrid electrical vehicles (HEVs) and their technical features and highlights the successes of the state-of-the-art pure electrical vehicles (EVs). In addition, this course will introduce various battery technologies used for electrical vehicles, covering traditional batteries, lithium-ion batteries, and batteries beyond lithium-ions. It is appropriate for engineering and natural science students interested in obtaining basic knowledge of hybrid and pure electrical vehicles to prepare for a career in developing alternate energy sources. Prerequisite: ELEG 3903 or BENG 3113, and senior standing. (Typically offered: Spring)

\section*{MEEG 4413. Heat Transfer. 3 Hours.}

Basic thermal energy transport processes; conduction, convection, and radiation; and the mathematical analysis of systems involving these processes in both steady and time-dependent cases. Prerequisite: MEEG 3503. (Typically offered: Spring and Summer)

\section*{MEEG 4423. Power Generation. 3 Hours.}

Study of design and operational aspects of steam, gas, and combined cycle power plants. Brief study of Nuclear and Alternative energy systems. Prerequisite: MEEG 3503. (Typically offered: Irregular)

\section*{MEEG 4433. Aerospace Propulsion. 3 Hours.}

Principles, operation, and characteristics of gas turbine and rocket engines. Brief study of novel spacecraft propulsion systems. Prerequisite: MEEG 3503. (Typically offered: Irregular)

\section*{MEEG 4453. Industrial Waste and Energy Management. 3 Hours.}

Applications of thermodynamics, heat transfer, fluid mechanics, and electric machinery to the analysis of waste streams and energy consumption for industrial facilities. Current techniques and technologies for waste minimization and energy conservation including energy-consuming systems and processes, utility rate analysis, economic analysis and auditing are taught. Prerequisite: MEEG 4413. (Typically offered: Irregular)

\section*{MEEG 4473. Indoor Environmental Control. 3 Hours.}

Gives student a thorough understanding of the fundamental theory of air conditioning design for commercial buildings, including calculating heating and cooling loads along with the proper selection and sizing of air conditioning equipment. Prerequisite: MEEG 4413. (Typically offered: Irregular)

MEEG 4483. Thermal Systems Analysis and Design. 3 Hours.
Analysis design and optimization of thermal systems and components with examples from such areas as power generation, refrigeration, and propulsion, Availability loss characteristics of energy systems and availability conservation methods.
Prerequisite: MEEG 4413. (Typically offered: Fall and Summer)
MEEG 4483H. Honors Thermal Systems Analysis and Design. 3 Hours.
Analysis design and optimization of thermal systems and components with examples from such areas as power generation, refrigeration, and propulsion. Availability loss characteristics of energy systems and availability conservation methods. Additional topics, with an additional design project and /or more rigorous approach to design projects for honors course. Advanced project required. Prerequisite: MEEG 4413
(Typically offered: Fall and Summer)
This course is equivalent to MEEG 4483.

\section*{MEEG 4503. Introduction to Flight. 3 Hours.}

The course will provide understanding in basic aerodynamics, airfoil design and characteristics, and flight control surfaces. Prerequisite: MATH 2584, MEEG 3503. (Typically offered: Fall)

\section*{MEEG 4503H. Honors Introduction to Flight. 3 Hours.}

The course will provide understanding in basic aerodynamics, airfoil design and characteristics, and flight control surfaces. Prerequisite: MATH 2584 and MEEG 3503. (Typically offered: Fall)
This course is equivalent to MEEG 4503.

\section*{MEEG 4523. Astronautics. 3 Hours.}

Study of spacecraft design and operations. Prerequisite: MEEG 2013 and MEEG 2403 or consent of instructor. (Typically offered: Irregular)

\section*{MEEG 4633. Additive Manufacturing. 3 Hours}

This course provides an overview of developing opportunities and critical challenges of additive manufacturing (AM, also known as 3-D printing). It covers existing and emerging additive manufacturing processes in the context of product design, materials selection and processing, and industrial and consumer applications. Students will learn to take advantage of the new capabilities of additive manufacturing technologies (e.g., design freedom) for existing and new applications and the implementation of their designs in a laboratory through project-based learning. Students may not receive credit for both MEEG 4633 and MEEG 5633. Prerequisite: MEEG 2101, MEEG 2303, MEEG 3013, and MEEG 3503 or instructor consent. (Typically offered: Spring)

MEEG 4703. Mathematical Methods in Engineering. 3 Hours.
Determinants, matrices, inverse of a matrix, simultaneous equations, eigenvalues, eigenvectors, coordinate transformations for matrices, diagonalization, square roots of a matrix, cryptography, and method of least squares. Vector algebra and calculus, Green's theorem, Strokes' theorem, and Gauss' divergence theorem. Index notation, epsilon-delta identity, and Cartesian tensors. Curvilinear coordinates, base vectors, and covariant and contravariant tensors. Applications to mechanics. Prerequisite: MATH 2574. (Typically offered: Irregular)

\section*{MEEG 4903H. Honors Mechanical Engineering Research. 3 Hours.}

Independent research for mechanical engineering honors students. Prerequisite: Honors standing and instructor consent. (Typically offered: Fall and Spring)

MEEG 491V. Special Topics in Mechanical Engineering. 1-6 Hour.
Consideration of current mechanical engineering topics not covered in other courses. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{MEEG 492V. Individual Study in Mechanical Engineering. 1-3 Hour.}

Individual study and research on a topic of mutually agreeable interest to the student and a faculty member. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer)

MEEG 492VH. Honors Individual Study in Mechanical Engineering. 1-3 Hour. Individual study and research on a topic of mutually agreeable interest to the student and a faculty member. Prerequisite: Senior standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to MEEG 492 V .

\section*{MEEG 5033. Advanced Mechanics of Materials I. 3 Hours.}

Combined stress, theories of failure, thick-walled cylinders, bending of unsymmetrical sections, torsion in noncircular section, plate stresses, and strain energy analysis. Prerequisite: MEEG 2013 and MEEG 3013. (Typically offered: Irregular)

MEEG 5153. Fundamentals of Mechanical Design. 3 Hours.
This class is designed to provide engineering students with a head start in industry as design engineers or working in an engineering related function. The course contents cover machine design and analysis experiences as related to working in industry and performing consulting work. Major topics include the design process, design procedures, fasteners, general design and numerous consulting experiences. A concept design exercise and two special design projects will be assigned to the students as homework. Graduate degree credit will not be given for both MEEG 4153 and MEEG 5153. Prerequisite: MEEG 4103. (Typically offered: Fall)

\section*{MEEG 5163. Advanced Product Design. 3 Hours.}

This course provides an in-depth and comparative study on the theories of engineering design and equips students to understand and utilize the tools and methodologies founded on those theories. (Typically offered: Fall)

MEEG 5173. Model-Based Systems Design and Analysis. 3 Hours.
This course provides students with an introduction into the two main approaches to understanding and designing complex engineered systems. First, the course covers the unique technical challenge of systems engineering and design of systems. Second, the course covers concepts, methods and tools related to "model-based systems design." This covers formal modeling of the information content of complex systems. The third portion of the course will focus on modeling the complex behavior of the systems. This is often described as dynamical systems modeling. Students will utilize the methods and tools presented in class to model a complex engineered system of their choice (with instructor approval). The classes will alternate between presenting modeling methods to the students and students demonstrating their system to the class utilizing those methods. Students may not receive credit for both MEEG 4173 and MEEG 5173. Prerequisite: MEEG 4103 or Instructor consent. (Typically offered: Spring Even Years)

\section*{MEEG 5203. Robot Modeling and Simulation. 3 Hours.}

This is a graduate level course in Robotics dealing with the behavioral study of robots. Topics covered in this course will include but not limited to the following: mathematical modeling of robots, rigid motions and homogeneous transformation, forward/inverse kinematics of robots, velocity kinematics, path and trajectory planning, robot dynamics, joint control, PD/PID control, and multivariable control. Advanced topics may include passivity-based motion control, geometric nonlinear control, computer vision, vision-based control, and sensor fusion. Prerequisite: Graduate standing in MEEG or ELEG and consent of the instructor. (Typically offered: Spring)

\section*{MEEG 5253. Bio-Mems. 3 Hours.}

Topics include the fundamental principles of microfluidics, Navier-Stokes Equation, bio/abio interfacing technology, bio/abio hybrid integration of microfabrication technology, and various biomedical and biological problems that can be addressed with microfabrication technology and the engineering challenges associated with it.
Lecture 3 hours per week. Prerequisite: MEEG 3503 or CVEG 3213 or CHEG 2133. (Typically offered: Spring)
This course is cross-listed with BENG 5253.
MEEG 5263. Introduction to Micro Electro Mechanical Systems. 3 Hours.
A study of mechanics and devices on the micro scale. Course topics will include: introduction to micro scales, fundamentals of microfabrication, surface and bulk micromachining, device packaging, device reliability, examples of micro sensors and actuators. Recitation three hours per week. (Typically offered: Fall)

MEEG 5283. Microelectronics Reliability. 3 Hours.
In this course, students will learn about common failure modes experienced in electronic packaging and devices, with special attention on mechanical and thermally driven failure mechanisms. Additionally, students will gain familiarity with accelerated testing methods and the associated governing standards associated with electronics reliability qualifications used in identifying and certifying electronics for various applications. Prerequisite: ELEG 5273 or instructor consent. (Typically offered: Fall Even Years)

MEEG 5333. Introduction to Tribology. 3 Hours.
A study of science and technology of interacting surfaces in relative motion. Topics include solid surface characterization, contact between solid surfaces, adhesion, friction, wear, lubrication, micro/nanotribology, friction and wear screening test methods, and tribological components and applications. Students may not earn credit for both MEEG 5333 and MEEG 4313. Prerequisite: Graduate standing. (Typically offered: Irregular)

MEEG 5343. Computational Material Science. 3 Hours.
This course provides students with an overview of different modeling techniques in material science. Applications will be presented on a broad range of modeling techniques including atomistic simulation methods, Monte Carlo techniques, molecular mechanics, and molecular dynamics. Prerequisite: Graduate standing. (Typically offered: Irregular)

MEEG 5353. Lithium-ion Batteries and Beyond: Materials, Characterization, and Performance. 3 Hours.
This course is intended to provide students an overview of various battery systems and help students establish the concepts of primary and secondary batteries. The course materials will focus on lithium-ion batteries (LIBs), covering their electrochemical mechanisms, components, materials synthesis, materials characterization, and performance evaluations. Prerequisite: CHEM 1103 and MEEG 2303. (Typically offered: Fall)

MEEG 5403. Advanced Thermodynamics. 3 Hours.
An in-depth review of classical thermodynamics, including availability analysis, combustion, and equilibrium, with an introduction to quantum mechanics and statistical thermodynamics. Prerequisite: Graduate standing in Engineering or consent of instructor. (Typically offered: Spring)

MEEG 5453. Advanced Heat Transfer. 3 Hours.
More in-depth study of topics covered in MEEG 4413, Heat Transfer, and coverage of some additional topics. Prerequisite: MEEG 4413 or equivalent. (Typically offered: Fall)

\section*{MEEG 5473. Radiation Heat Transfer. 3 Hours.}

Spectral analysis, radiant exchange in gray and non-gray enclosures, gas radiation, and multi-mode heat transfer. Prerequisite: MEEG 5453 or equivalent. (Typically offered: Summer Even Years)

\section*{MEEG 5483. Thermal Systems Analysis and Design. 3 Hours.}

Analysis design and optimization of thermal systems and components with examples from such areas as power generation, refrigeration, and propulsion, Availability loss characteristics of energy systems and availability conservation methods. Graduate degree credit will not be given for both MEEG 4483 and MEEG 5483. Prerequisite: MEEG 4413. (Typically offered: Fall and Summer)

\section*{MEEG 5503. Advanced Fluid Dynamics I. 3 Hours.}

A basic survey of the characteristics of fluid flow under a variety of conditions with examples. Begins with a derivation of the Navier-Stokes equations and an evaluation of the dimensionless groups found from these equations. Topics to be covered include viscous laminar and turbulent boundary layers, jets and wakes, Stokes flow, inviscid flows with and without free surfaces and turbulence. Prerequisite: MEEG 3503 and MATH 2584. (Typically offered: Spring)

\section*{MEEG 5513. Introduction to Flight. 3 Hours.}

The course will provide understanding in basic aerodynamics, airfoil design and characteristics, and flight control surfaces. Graduate degree credit will not be given for both MEEG 4503 and MEEG 5513. Prerequisite: MATH 2584, MEEG 3503. (Typically offered: Fall)

MEEG 5523. Astronautics. 3 Hours.
Study of spacecraft design and operations. Graduate degree credit will not be give for both MEEG 4523 and MEEG 5523. Prerequisite: MEEG 2013 and MEEG 2403 or consent of instructor. (Typically offered: Irregular)

\section*{MEEG 5533. Fundamentals of Aerodynamics. 3 Hours.}

A study of external-flow fluid mechanics applied to Aerodynamics. Topics include integral and differential forms of the basic fluid equations (continuity, momentum, and energy), potential flow, and supersonic flow. Prerequisite: MEEG 3503. (Typically offered: Spring)

MEEG 5633. Additive Manufacturing. 3 Hours.
This course provides an overview of developing opportunities and critical challenges of additive manufacturing (AM, also known as 3-D printing). It covers existing and emerging additive manufacturing processes in the context of product design materials selection and processing, and industrial and consumer applications. Students may not receive credit for both MEEG 4633 and MEEG 5633. Prerequisite: MEEG 2101, MEEG 2303, MEEG 3013, and MEEG 3503 or instructor consent. (Typically offered: Spring)

\section*{MEEG 5733. Advanced Numerical Methods. 3 Hours.}

Numerical methods for the solution of linear and non-linear ordinary and partia differential equations; initial and boundary value problems; one-step and multi-step methods; predominantly finite difference but also finite element and control volume techniques; and computer applications. Graduate standing in Engineering or consent of instructor. (Typically offered: Irregular)

MEEG 5833. Aerospace Propulsion. 3 Hours.
Principles, operation, and characteristics of gas turbine and rocket engines. Brief study of novel spacecraft propulsion systems. Graduate degree credit will not be given for both MEEG 4433 and MEEG 5833. Prerequisite: MEEG 3503. (Typically offered: Irregular)

MEEG 5853. Industrial Waste and Energy Management. 3 Hours.
This course in a basic application of thermodynamics, heat transfer, fluid mechanics, and electric machinery to the analysis of energy consumption and waste streams in industrial manufacturing facilities. There is also application toward energy conservation in commercial buildings. Current techniques and technologies for energy conservation and waste minimization are covered, including energyconsuming systems and processes, utility rate analysis, economic analysis and auditing. This course may be of interest to engineers in industry, consulting, facilities, environmental sustainability, and others. Prerequisite: MEEG 4413 or consent of instructor. (Typically offered: Irregular)

MEEG 5873. Indoor Environmental Control. 3 Hours.
This course is a broad use of thermal-fluid concepts toward understanding and applying fundamental theories of heating, ventilating, and air conditioning (HVAC) design. Upon completion of the course, students will be able to apply current engineering techniques and methodologies to design HVAC systems, including heating and cooling loads, and proper selection and sizing of air conditioning equipment. Moreover, through this class, students will gain a physical understanding of HVAC systems and buildings, which is needed for today's HVAC designs. This course may be of interest to engineers in industry, consulting, facilities, and others. Prerequisite: MEEG 4413 or consent of instructor. (Typically offered: Irregular)

MEEG 591V. Special Topics in Mechanical Engineering. 1-6 Hour.
Consideration of current advanced mechanical engineering topics not covered in other courses. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

MEEG 592V. Individual Study in Mechanical Engineering. 1-6 Hour. Opportunity for individual study of advanced subjects related to a graduate mechanical engineering program to suit individual requirements. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

MEEG 5953. Fundamentals of Fracture and Fatigue in Structures. 3 Hours. The course will cover the concepts of linear-elastic, elastic-plastic and timedependent Fracture Mechanics as applied to fracture in a variety of materials, structures, and operating conditions. The examples will include fracture in large components such as aircraft, bridges and pressure vessels and also in bones and in soft materials and human tissue. Prerequisite: Graduate standing in Civil, Mechanical or Biomedical Engineering or consent of the instructor. (Typically offered: Fall and Spring)
This course is cross-listed with BMEG 5953, CVEG 5953.
MEEG 5963. Advanced Fracture Mechanics and Structural Integrity. 3 Hours. This course provides an in-depth treatment of advanced topics in fracture mechanics such as stress analysis of cracks under elastic-plastic loading, crack initiation and growth under elastic-plastic and time-dependent creep and creep-fatigue conditions. The course emphasizes fundamental underpinnings of nonlinear fracture mechanics and its use in material evaluation and life prediction methodology for structural components. Micro-mechanics of fracture and crack growth processes are also covered. Prerequisite: MEEG 5953, or BMEG 5953, or CVEG 5953 or equivalent, or instructor consent. (Typically offered: Fall and Spring)
MEEG 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{MEEG 6800. Graduate Seminar. 0 Hours.}

A periodic seminar devoted to mechanical engineering research topics. Course includes letter grades A, B, C, D, and F as well as CR. (Typically offered: Fall and Spring)

MEEG 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Medical Humanities (MEDH)}

\section*{Courses}

MEDH 3223. Special Topics in Medical Humanities. 3 Hours.
Examines the intersections between medical and health topics with humanities or social science fields. (Typically offered: Spring Odd Years) May be repeated for degree credit.

\section*{Medieval and Renaissance Studies (MRST)}

\section*{Courses}

MRST 2013. Introduction to Medieval and Renaissance Studies. 3 Hours.
An interdisciplinary introduction to the major historical and cultural developments in northern Europe and the Mediterranean basin from approximately 500 to 1600 C.E. (Typically offered: Fall Even Years)

MRST 3013. Special Topics in Medieval Studies. 3 Hours.
In-depth study of some topic or period of medieval literature, art, history and philosophy. Prerequisite: Sophomore standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

MRST 3013H. Honors Special Topics in Medieval Studies. 3 Hours. In-depth study of some topic or period of medieval literature, art, history and philosophy. Prerequisite: Sophomore standing. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is equivalent to MRST 3013.
MRST 3023. Special Topics in Early Modern Studies. 3 Hours.
In-depth study of some topic or period of Early Modern literature, art, history and philosophy. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

MRST 4003. Medieval and Renaissance Studies Colloquium. 3 Hours. Advanced study of some more narrowly focused aspect of medieval and/or Renaissance studies. Prerequisite: Sophomore standing. (Typically offered: Spring Odd Years) May be repeated for up to 6 hours of degree credit.
MRST 4113. Italian Fairy Tales in Literature, Visual Arts, and Cinema. 3 Hours. Explores different typologies of fables and examines the evolution of the genre from the Middle Ages to contemporary times. Taught in Italian. Prerequisite: ITAL 3113 or ITAL 3123 or instructor's consent. (Typically offered: Spring Even Years) This course is cross-listed with ITAL 4113.

MRST 4133. The Power of Women: Representations of from Italian Women from Middle Ages to Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with GNST 4133, ITAL 4133.
MRST 5133. The Power of Women: Representations of \(\&\) from Italian Women from Middle Ages to Early Modern Period. 3 Hours.
Examines the various representations of women through diverse genres, by both male and female authors, from the Middle Ages to the Early Modern period in Italy. Taught in English. (Typically offered: Spring)
This course is cross-listed with GNST 5133, ITAL 5133.

\section*{Middle East Studies (MEST) \\ Courses}

MEST 2003. Introduction to Islam. 3 Hours.
This course introduces Islam as a global religion and world civilization, including study of the Qur'an, prophet Muhammad, ritual and community practices, metaphysics, mysticism, art, literature, and sacred and critical history. (Typically offered: Irregular)

MEST 2003H. Honors Introduction to Islam. 3 Hours.
This course introduces Islam as a global religion and world civilization, including study of the Qur'an, prophet Muhammad, ritual and community practices, metaphysics, mysticism, art, literature, and sacred and critical history. (Typically offered: Irregular)
This course is equivalent to MEST 2003.

\section*{MEST 2013. Introduction to Middle East Studies. 3 Hours.}

This course is designed to provide students with fundamental building blocks for understanding the contemporary Middle East//slamic World. Students will be introduced to a variety of disciplinary approaches to the study of the geo-cultural region, including history, politics, arts and literature, religions and cultures, social geography, and economics. (Typically offered: Fall)

\section*{MEST 3003. Islam: Beliefs and Practices. 3 Hours.}

Explores the relationship between teachings, norms, customary practices and Muslim perception of Islam. Examines theoretical concepts and practices, such as war and peace, democracy, pluralism, modernity, human rights, environment, gender, Islamic law, nation-state, and citizenship in addition to the basic tenets of Islam. (Typically offered: Spring)

\section*{MEST 3003H. Honors Islam: Beliefs and Practices. 3 Hours.}

Explores the relationship between teachings, norms, customary practices and Muslim perception of Islam. Examines theoretical concepts and practices, such as war and peace, democracy, pluralism, modernity, human rights, environment, gender, Islamic law, nation-state, and citizenship in addition to the basic tenets of Islam. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to MEST 3003.

\section*{MEST 340V. MEST Independent Study. 1-3 Hour.}

An exploration of varied topics related to the Middle East and North Africa studied independently with the supervision of a faculty member. Credit arranged with instructor. Prerequisite: Instructor consent and junior standing (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

MEST 340VH. Honors MEST Independent Study. 1-3 Hour.
An exploration of varied topics related to the Middle East and North Africa studied independently with the supervision of a faculty member. Credit arranged with instructor. Prerequisite: Instructor consent, junior standing and honors standing. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.
This course is equivalent to MEST 340 V .
MEST 399V. MEST: Honors Thesis. 1-6 Hour.
Middle East Studies Honors research, readings and thesis. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{MEST 4003. Middle East Studies Colloquium. 3 Hours.}

An interdepartmental colloquium with an annual change in subject required of all students in the Middle East studies program. Prerequisite: Sophomore standing. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

\section*{MEST 4003H. Honors Middle East Studies Colloquium. 3 Hours.}

Honors colloquium. (Typically offered: Spring) May be repeated for up to 3 hours of degree credit.
This course is equivalent to MEST 4003.

MEST 4103. Special Topics in Middle East Studies. 3 Hours.
Courses in lecture or seminar format to be offered in a variety of disciplines relating to the history, culture, politics, geography, languages, literature, arts, and religions of the Middle East, North Africa, and/or Islamic world. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{Music (MUSC)}

\section*{Courses}

MUSC 3923H. Honors Colloquium in Music. 3 Hours.
Covers a special topic or issue offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in Music). (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{MUSC 490VH. Honors Essay. 1-6 Hour.}

An honors research paper in Music History or literature, Ethnomusicology, Music
Theory, or Music Education. Open to seniors in honors. (Typically offered: Irregular)

\section*{MUSC 5011. Gospel Songwriting and Arranging. 1 Hour.}

Basic songwriting styles and techniques specific to Gospel Music, focusing on melody writing and lyric structure. (Typically offered: Irregular)
MUSC 5102. Black Gospel Conducting Methods. 2 Hours.
Instruction in fundamental conducting gesture indicative of the Black Gospel Music styles. Includes appropriate posture, the use of the gesture to emphasize syllabic stress, expressive and independent use of both hands, beat patterns, cueing, and control of tempo, dynamics and phrase shaping. Corequisite: MUSC 5111L. (Typically offered: Fall, Spring and Summer)

\section*{MUSC 5111L. Black Gospel Conducting Methods Lab. 1 Hour.}

Lab instruction in the fundamentals of effective teaching pedagogy with an emphasis in Black Sacred Music. Corequisite: MUSC 5102. (Typically offered: Fall, Spring and Summer)
MUSC 5212. Hymnology. 2 Hours.
Historical study of the origins and purposes of the hymns of the church, including examination of hymns as literature, theological expression, devotional material, and musical expression. (Typically offered: Fall, Spring and Summer)
MUSC 5222. Theological Perspectives and The Black Church Experience. 2 Hours.
Explores the ministry of the Black church. Examines its underlying theological rationale and practical implications for those aspiring to a vocation in the Black church. Emphasizes the perspective of cultural pluralism in the Black experience. (Typically offered: Fall, Spring and Summer)
MUSC 5232. Seminar in Worship Arts. 2 Hours.
Introductory study of creative worship and technologies used in worship ministry. Lighting design, audio and video production, presentation software, movement, staging, worship leadership, worship planning, and a variety of multi-media possibilities will be explored. (Typically offered: Fall, Spring and Summer)
MUSC 5242. Vocal Literature of Black and African Diasporic Composers. 2 Hours.
An in-depth survey of vocal music of African American and the African diasporic composers highlighting its history and vocal literature. (Typically offered: Irregular)
MUSC 5253. Research Methods in Black Sacred Music. 3 Hours.
Research methods for evaluating primary genres of Black music, from the slave trade to Black music futures. Emphasis is placed on listening to and interpreting the musical, sonic, and silent features of traditions and examining the ways in which they are interrelated and are cultural objects for appropriation. (Typically offered: Fall, Spring and Summer)

MUSC 5273. Pop Music of the African Diaspora. 3 Hours.
Explores various forms of popular musical expression from the African Diaspora as social practice across diverse locations, media, and societies. Examines the participatory, presentational, and political components of music making. (Typically offered: Fall, Spring and Summer)

\section*{MUSC 5421. Gospel Improvisation. 1 Hour.}

Explores Gospel/Jazz chord voicings and interpretations of melodies and phrases rooted in any of the Gospel music-influenced styles. (Typically offered: Irregular)

\section*{MUSC 5773. Special Topics in Black Sacred Music. 3 Hours.}

Subject matter not covered in other courses including specific performance techniques, in-depth research into various elements of theological and worship practice, and instructor-specific expertise. (Typically offered: Summer)

MUSC 5983. The Black Messiah: Music, Religion, and Activism. 3 Hours. Considering Black religious traditions and the evolution of African American oral traditions, explores the creative work of African descendants who have sought to address oppression, white supremacy, gender inequity, socio-economic disinheritance, and political subjugation. Juxtaposes religious, performative, symbolic, and ritual perspectives on the study of Black messianic musical performance. (Typically offered: Irregular)

MUSC 600V. Master's Thesis. 2-6 Hour.
Preparation of a master's thesis as partial fulfillment of the requirement for the master's degree. (Typically offered: Irregular) May be repeated for degree credit.

MUSC 605V. Independent Study in Black Sacred Music. 1-3 Hour.
Individually designed and conducted worship planning project under the guidance of a faculty member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

MUSC 700V. Doctoral Dissertation. 3-18 Hour.
Dissertation. (Typically offered: Irregular) May be repeated for degree credit.

\section*{Music Education (MUED)}

\section*{Courses}

MUED 1371. Teaching the Beginning Percussionist. 1 Hour.
A study of the pedagogy and techniques needed to instruct middle school and junior high percussionists. Emphasis on elementary snare drum and marimba performance. Study of junior high band and orchestra methods, solos and ensemble music. Prerequisite: MUEDBM major. (Typically offered: Fall and Spring)

\section*{MUED 2012. Introduction to Music Education. 2 Hours.}

A course designed to provide early experiences for the prospective music teacher. Students will become familiar with professional trends, music classroom organizational and management issues, and principles of effective education. Emphases will include basic psychological and philosophical orientation, as well as observations in public school classrooms. Required of all prospective Music Education majors. (Typically offered: Spring)

MUED 2532. Class Instruction in Woodwind Instruments. 2 Hours.
Familiarizes students with elementary and intermediate skills, techniques and pedagogy needed to teach woodwind instruments--flute, clarinet, saxophone, oboe, and bassoon--in a class setting. Corequisite: Lab component. Prerequisite: MUEDBM major. (Typically offered: Fall and Spring)

MUED 2542. Class Instruction in Brass Instruments. 2 Hours
Familiarizes students with elementary and intermediate skills, techniques and pedagogy needed to teach brass instruments--trumpet, French horn, trombone euphonium, and tuba--in a class setting. Corequisite: Lab component. Prerequisite MUEDBM major. (Typically offered: Fall and Spring)

MUED 2552. Class Instruction in Orchestral String Instruments. 2 Hours. Familiarizes students with elementary and intermediate skills, techniques and pedagogy needed to teach orchestral stringed instruments in a class setting. Includes a lab that specifically focuses on peer teaching of concepts and skills related to teaching stringed instruments. Corequisite: Lab component. Prerequisite: MUEDBM major. (Typically offered: Fall and Spring)

MUED 3021. Supervised Practicum in Teaching Musical Skills. 1 Hour. Provides for supervised teaching opportunities with public school students in instrumental, choral, and elementary classes. Prerequisite: MUEDBM major and MUED 2012. (Typically offered: Spring)

MUED 3833. Music Education in the Elementary School. 3 Hours. Concepts of elementary music education; methods, materials, curriculum design and supervision in elementary school music. Prerequisite: MUED 2012. (Typically offered: Fall and Spring)

MUED 3911. Classroom Instruments in Music Education. 1 Hour. The study of instruments utilized in the general music classroom, including but not limited to the Orff Instrumentarium, pitched and unpitched hand-held percussion, frame and various ethnic drums, guitar, and recorder. Elementary and secondary general music classroom preparation with an emphasis on orchestration, composition, and improvisation with instruments commonly utilized in required music classes in public schools. Open to music education majors or with instructor's consent. Pre- or Corequisite: MUED 3833. Prerequisite: MUED 2012. (Typically offered: Fall)

MUED 4031. Seminar for Professional Entry into Music Education. 1 Hour. A seminar offered during student teaching semester to prepare the student for the role of a professional educator. Content includes professional ethics and conduct, classroom management, evaluation and grading, and application for employment. (Typically offered: Fall and Spring)

\section*{MUED 4112. Pedagogy in Music Education. 2 Hours.}

A course presenting broad music teaching concepts and specific teaching behaviors. Students will experience the pedagogical teaching situation through the construct of effective communication practice. Emphases will be on providing a laboratory environment representative of public school classrooms. Required of all Music Education majors. Prerequisite: MUED 3833. (Typically offered: Fall)

MUED 4273. Methods for Teaching String Instruments. 3 Hours.
Methods and materials for students preparing to teach orchestral instruments and ensembles in the public schools. Prerequisite: MUED 1371, MUED 2012, MUED 2532, MUED 2542, MUED 2552, and MUED 3021. (Typically offered: Fall Odd Years)

MUED 4283. Teaching Vocal Music. 3 Hours.
Methods and materials used in teaching secondary choral music. Prerequisite: MUED 2012 . (Typically offered: Irregular)

MUED 4293. Instrumental Methods. 3 Hours.
Problems of teaching instrumental music in the public schools. Prerequisite: MUED 1371, MUED 2012, MUED 2532, MUED 2542, MUED 2552, and MUED 3021. (Typically offered: Fall)

MUED 451V. Student Teaching: Elementary Music. 4-8 Hour.
A minimum of five weeks and a maximum of ten weeks will be spent in an offcampus school, where the student will teach under supervision in the elementary classroom and will participate in other activities involving the school and community. Enrollment requirement is for a total of 12 hours and 15 weeks involvement in MUED 452 V and MUED 451V. Successful completion of a criminal background check is required prior to beginning student teaching. Corequisite: MUED 452V. Prerequisite: Bachelor of Music degree in Music Education. (Typically offered: Fall and Spring)

\section*{MUED 452V. Student Teaching: Secondary Music. 4-8 Hour.}

A minimum of five weeks and a maximum of ten weeks will be spent in an offcampus school, where the student will teach under supervision in the elementary classroom and will participate in other activities involving the school and community. Enrollment requirement is for a total of 12 hours and 15 weeks involvement in MUED 452 V and MUED 451V. Successful completion of a criminal background check is required before beginning student teaching. Corequisite: MUED 451V. Prerequisite: Bachelor of Music degree in Music Education. (Typically offered: Fall and Spring)

\section*{MUED 4743. Characteristics of Special Needs Students in the Music} Classroom. 3 Hours.
Provides an overview to special needs students in the music classroom. Explores the characteristics of special needs students in six domains: cognitive, communicative, emotional, behavioral, and medical and physical. Requires outside class time working with special needs students. Prerequisite: Instructor's consent. (Typically offered: Fall)

\section*{MUED 477V. Special Topics in Music Education. 1-4 Hour.}

Subject matter not covered in other sources. With permission, may be repeated for credit if topics are different. (Typically offered: Irregular) May be repeated for degree credit.

MUED 5513. Seminar: Resources in Music Education. 3 Hours.
Study of the analytical and writing skills necessary for academic research in music education. Each student identifies one problem specific to music education, finds and reviews related literature and sources, develops a comprehensive bibliography, and writes a paper which synthesizes the research. Open to graduate students and undergraduates in honors in music education. (Typically offered: Irregular)

\section*{MUED 5653. Seminar: Issues in Music Education. 3 Hours.}

A seminar exploring the relationships between the profession of teaching music and selected views about learning theories, teaching methods, philosophy, psychology, and other selected topics relevant to contemporary music education. (Typically offered: Irregular)

\section*{MUED 5733. Music Education in the Elementary School. 3 Hours.}

Concepts of elementary music education; methods, materials, curriculum design, and supervision in elementary school music. (Typically offered: Irregular)

\section*{MUED 5743. Characteristics of Special Needs Students in the Music} Classroom. 3 Hours.
A review of characteristics and behaviors of students in the music classroom that have identified or unidentified disabilities in learning. Prerequisite: Admittance into Music Education for Special Needs Students Graduate Certificate. (Typically offered: Fall)

MUED 5753. Teaching Music to Students with Special Needs. 3 Hours. Instructs students how to construct and implement curriculum and assessments for students with special needs in a music classroom. Prerequisite: MUED 5743. (Typically offered: Spring)

MUED 5763. Practicum in Teaching Music to Students with Special Needs. 3 Hours.
Students will utilize and evaluate designed curriculum and assessment from MUED 5753 in a music classroom. Prerequisite: MUED 5743. Corequisite: MUED 5753. (Typically offered: Spring)

MUED 577V. Special Topics in Music Education. 1-4 Hour.
Subject matter not covered in other sources. With permission, may be repeated for credit if topics are different. Graduate degree credit will not be given for both MUED 477V and MUED 577V. (Typically offered: Irregular) May be repeated for degree credit.

MUED 5811. Curriculum Design in Music. 1 Hour.
Goals and objectives in music education. Student will develop a curriculum for an actual or hypothetical music education program. (Typically offered: Irregular)

MUED 5973. Tests and Measurement in Music. 3 Hours.
This course will address the psychometric concepts of tests and measurement of music achievement, aptitude, attitude, and self-assessment. The course will focus on the teaching and assessment of musical skills, musical responses, and will critically examine existing aptitude tests (Seashore, Watkins Farnum, Gordon, etc.). Basic statistical concepts and data analysis used in common testing scenarios will be introduced. Prerequisite: Graduate standing in music. (Typically offered: Irregular)

\section*{MUED 5983. Psychology of Music Behavior. 3 Hours.}

This course is an introduction to the psychology of music, and will adopt an interdisciplinary view toward the field, covering such topics as philosophical and sociological questions about the nature and function of music, the physiology of the ear, the physical and perceptual properties of sounds (acoustics), performance anxiety, preference and taste research, social and pedagogical attributes of performance, and behavioral musical responses. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{MUED 600V. Master's Thesis. 1-6 Hour.}

Preparation of a master's thesis as partial fulfillment of the requirement for the master's degree. (Typically offered: Irregular) May be repeated for degree credit.

MUED 605V. Independent Study. 1-6 Hour.
Provides students with an opportunity to pursue special study of problems in music education. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{MUED 6313. Teaching Music in Higher Education. 3 Hours.}

Designed to develop pedagogical techniques for teaching music at the collegiate level. (Typically offered: Irregular)

\section*{Music Ensemble (MUEN)}

\section*{Courses}

MUEN 1211. Latin American Ensemble I. 1 Hour.
Plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1221. World Music Ensemble I. 1 Hour.}

Study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1231. Songwriters' Ensemble I. 1 Hour.
A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1241. Beginning Jazz Combo. 1 Hour.}

Introductory ensemble experience offering a repertoire-based approach to learning basic improvisation skills and the performance of common jazz styles. Open to both music and non-music majors. (Typically offered: Spring)

MUEN 1251. Arkansas Soul Band I. 1 Hour.
Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1261. Intermediate Jazz Combo I. 1 Hour}

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1271. Advanced Jazz Combo I. 1 Hour.}

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1281. Vocal Jazz Ensemble I. 1 Hour.}

Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1401. Opera Theatre I. 1 Hour.
Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1411. Razorback Chorus I. 1 Hour.}

Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenorbass range. Admission is open to any student on campus that can sing in the tenorbass range. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1421. Inspirational Chorale I. 1 Hour.}

Performance of African American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music, and sacred world music. Rehearsal 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1431. Symphony Orchestra I. 1 Hour.}

Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1441. Marching Band I. 1 Hour.}

Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles. Rehearsal 8 hours per week. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1451. Schola Cantorum I. 1 Hour.}

Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1461. Wind Symphony I. 1 Hour.}

Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1471. Jazz Orchestra. 1 Hour.}

Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1481. Campus Band I. 1 Hour.
Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Corequisite: Lab component. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
MUEN 1491. Concert Band I. 1 Hour.
Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1501. Chamber Music I. 1 Hour.}

Performance of small ensemble music for any combination of instruments and/ or voice. Rehearsal 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1511. Symphonic Band I. 1 Hour.}

Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1521. Woodwind Quintet I. 1 Hour.}

Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1541. Accompanying I. 1 Hour.}

Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: MUAP 110V. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1551. Percussion Ensemble I. 1 Hour.}

Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1561. Musical Theater Orchestra I. 1 Hour.
Instrumental ensemble with focus on the preparation and performance of musical theater pit orchestra music, in conjunction with UA Theater's mainstage musical. Admission by audition or director's approval. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1581. Chamber Choir I. 1 Hour.}

Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1591. Treble Chorus I. 1 Hour.}

Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the treble range. Admission is open to any student on campus that can sing in the treble range. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1691. Wind Ensemble I. 1 Hour.}

Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 1721. Clarinet Ensemble I. 1 Hour.
Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1731. Saxophone Ensemble I. 1 Hour.}

Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1741. Chamber Orchestra I. 1 Hour.}

Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1761. New Music Ensemble I. 1 Hour.}

Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 1771. Trombone Ensemble I. 1 Hour.}

Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2211. Latin American Ensemble II. 1 Hour.}

This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2221. World Music Ensemble II. 1 Hour.}

Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2231. Songwriters' Ensemble II. 1 Hour.}

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2251. Arkansas Soul Band II. 1 Hour.}

Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 2261. Intermediate Jazz Combo II. 1 Hour.
Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2271. Advanced Jazz Combo II. 1 Hour.}

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2281. Vocal Jazz Ensemble II. 1 Hour.}

Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2401. Opera Theatre II. 1 Hour.}

Continuation of Opera Theatre I. Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2411. Razorback Chorus II. 1 Hour.}

Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenorbass range. Admission is open to any student on campus that can sing in the tenor-bass range. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
MUEN 2421. Inspirational Chorale II. 1 Hour.
Continuation of Inspirational Chorale I. Performance of African American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music, and sacred world music. Rehearsal 3 hours per week. Admission with director's approval. Prerequisite: Sophomore standing, audition and approval of director. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2431. Symphony Orchestra II. 1 Hour.}

Continuation of Symphony Orchestra I. Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Sophomore standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2441. Marching Band II. 1 Hour.}

Continuation of Marching Band I. Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles. Rehearsal 8 hours per week. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2451. Schola Cantorum II. 1 Hour.}

Continuation of Schola Cantorum I. Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Sophomore standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2461. Wind Symphony II. 1 Hour.}

Continuation of Wind Symphony I. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Sophomore standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2471. Jazz Orchestra II. 1 Hour.}

Continuation of Jazz Performance Laboratory II. Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2481. Campus Band II. 1 Hour.}

Continuation of Campus Band I. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Corequisite: Lab component. Prerequisite: Sophomore standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 2491. Concert Band II. 1 Hour.
Continuation of Concert Band I. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Prerequisite: Sophomore standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1491.
MUEN 2501. Chamber Music II. 1 Hour.
Continuation of Chamber Music I. Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2511. Symphonic Band II. 1 Hour.}

Continuation of Symphonic Band I. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Sophomore standing; director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2521. Woodwind Quintet II. 1 Hour.}
continuation of Woodwind Quintet I. Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2541. Accompanying II. 1 Hour.}

Continuation of Accompanying I. Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: Sophomore standing and MUAP 210V. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2551. Percussion Ensemble II. 1 Hour.}

Continuation of Percussion Ensemble I. Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. Prerequisite: Sophomore standing. (Typically offered: Spring and Summer) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2561. Musical Theater Orchestra II. 1 Hour.}

Instrumental ensemble with focus on the preparation and performance of musical theater pit orchestra music, in conjunction with UA Theater's mainstage musical. Admission by audition or director's approval. Prerequisite: Sophomore standing. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

MUEN 2581. Chamber Choir II. 1 Hour.
Continuation of Chamber Choir I. Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2591. Treble Chorus II. 1 Hour.}

Continuation of Women's Chorus I. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the treble range. Admission is open to any student on campus that can sing in the treble range. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2691. Wind Ensemble II. 1 Hour.}

Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit. This course is equivalent to MUEN 1691.

\section*{MUEN 2721. Clarinet Ensemble II. 1 Hour.}

Continuation of Clarinet Ensemble I. Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2731. Saxophone Ensemble II. 1 Hour.}

Continuation of Saxophone Ensemble I. Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2741. Chamber Orchestra II. 1 Hour.}

Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Sophomore standing and instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2761. New Music Ensemble II. 1 Hour.}

Continuation of New Music Ensemble I. Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2771. Trombone Ensemble II. 1 Hour.}

Continuation of Trombone Ensemble I. Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 2781. Tuba Ensemble II. 1 Hour.}

Continuation of Tuba Ensemble I. Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets, quintets, and low brass choir. Rehearsal 2 hours per week. Prerequisite: Sophomore standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3211. Latin American Ensemble III. 1 Hour.}

This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-
Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3221. World Music Ensemble III. 1 Hour.}

Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3231. Songwriters' Ensemble III. 1 Hour.}

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3251. Arkansas Soul Band III. 1 Hour.}

Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3261. Intermediate Jazz Combo III. 1 Hour.}

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3271. Advanced Jazz Combo III. 1 Hour.}

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3281. Vocal Jazz Ensemble III. 1 Hour.
Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3401. Opera Theatre III. 1 Hour.}

Continuation of Opera Theatre II. Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval.
Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3411. Razorback Chorus III. 1 Hour.}

Continuation of Men's Chorus II. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenor-bass range. Admission is open to any student on campus that can sing in the tenor-bass range. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3421. Inspirational Chorale III. 1 Hour.}

Continuation of Inspirational Chorale II. Performance of African American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music, and sacred world music. Rehearsal 3 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3431. Symphony Orchestra III. 1 Hour.}

Continuation of Symphony Orchestra II. Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Junior standing; director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3441. Marching Band III. 1 Hour.}

Continuation of Marching Band II. Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles. Rehearsal 8 hours per week. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3451. Schola Cantorum III. 1 Hour.}

Continuation of Schola Cantorum II. Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Junior standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3461. Wind Symphony III. 1 Hour.}

Continuation of Wind Symphony II. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Junior standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3471. Jazz Orchestra III. 1 Hour.
Continuation of Jazz Performance Lab II. Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3481. Campus Band III. 1 Hour.}

Continuation of Campus Band II. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Corequisite: Lab component. Prerequisite: Junior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3491. Concert Band III. 1 Hour.}

Continuation of Concert Band II. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Prerequisite: Junior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1491.
MUEN 3501. Chamber Music III. 1 Hour.
Continuation of Chamber Music II. Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3511. Symphonic Band III. 1 Hour.}

Continuation of Symphonic Band II. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Junior standing and director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3521. Woodwind Quintet III. 1 Hour.
Continuation of Woodwind Quintet II. Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3541. Accompanying III. 1 Hour.}

Continuation of Accompanying II. Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: Junior standing and MUAP 310V. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3551. Percussion Ensemble III. 1 Hour.}

Continuation of Percussion Ensemble II. Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3581. Chamber Choir III. 1 Hour.
Continuation of Chamber Choir II. Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3591. Treble Chorus III. 1 Hour.}

Continuation of Women's Chorus II. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the treble range. Admission is open to any student on campus that can sing in the treble range. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3691. Wind Ensemble III. 1 Hour.
Continuation of Wind Ensemble II. Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1691.
MUEN 3721. Clarinet Ensemble III. 1 Hour.
Continuation of Clarinet Ensemble II. Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit

\section*{MUEN 3731. Saxophone Ensemble III. 1 Hour.}

Continuation of Saxophone Ensemble II. Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3741. Chamber Orchestra III. 1 Hour.
Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Junior standing and instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3761. New Music Ensemble III. 1 Hour.}

Continuation of New Music Ensemble II. Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 3771. Trombone Ensemble III. 1 Hour.}

Continuation of Trombone Ensemble II. Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 3781. Tuba Ensemble III. 1 Hour.
Continuation of Tuba Ensemble II. Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets, quintets, and low brass choir. Rehearsal 2 hours per week. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4211. Latin American Ensemble IV. 1 Hour.}

This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4221. World Music Ensemble IV. 1 Hour.}

Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4231. Songwriters' Ensemble IV. 1 Hour.}

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

MUEN 4251. Arkansas Soul Band IV. 1 Hour.
Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4261. Intermediate Jazz Combo IV. 1 Hour.}

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4271. Advanced Jazz Combo IV. 1 Hour.}

Advanced small jazz ensemble focused on improvisation in the context of bebop free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4281. Vocal Jazz Ensemble IV. 1 Hour.}

Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4311. Latin American Ensemble V. 1 Hour.}

This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4321. World Music Ensemble V. 1 Hour.}

Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4331. Songwriters' Ensemble V. 1 Hour.
A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

MUEN 4351. Arkansas Soul Band V. 1 Hour.
This ensemble performs historical and contemporary popular music from the African American tradition. These genres include but are not limited to soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills as well as analysis of performance, arrangements and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4361. Intermediate Jazz Combo V. 1 Hour.}

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. Prerequisite: Two semesters of MUEN 4261. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4371. Advanced Jazz Combo V. 1 Hour.}

Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4401. Opera Theatre IV. 1 Hour.}

Continuation of Opera Theatre III. Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval.
Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4411. Razorback Chorus IV. 1 Hour.}

Continuation of Men's Chorus III. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenor-bass range. Admission is open to any student on campus that can sing in the tenor-bass range. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4421. Inspirational Chorale IV. 1 Hour.}

Continuation of Inspirational Chorale III. Performance of African American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music, and sacred world music. Rehearsal 3 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4431. Symphony Orchestra IV. 1 Hour.}

Continuation of Symphony Orchestra III. Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Senior standing; director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4441. Marching Band IV. 1 Hour.}

Continuation of Marching Band III. Large ensemble performs at football games. Emphasis on high performance standards and a variety of performing styles.
Rehearsal 8 hours per week. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4451. Schola Cantorum IV. 1 Hour.}

Continuation of Schola Cantorum III. Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Senior standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4461. Wind Symphony IV. 1 Hour.}

Continuation of Wind Symphony III. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Senior standing and director's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4471. Jazz Orchestra IV. 1 Hour.}

Continuation of Jazz Performance Lab III. Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4481. Campus Band IV. 1 Hour.}

Continuation of Campus Band III. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Corequisite: lab component. Prerequisite: Senior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4491. Concert Band IV. 1 Hour.}

Continuation of Concert Band III. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Prerequisite: Senior standing. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1491.
MUEN 4501. Chamber Music IV. 1 Hour.
Continuation of Chamber Music III. Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4511. Symphonic Band IV. 1 Hour.}

Continuation of Symphonic Band III. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Senior standing and director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4521. Woodwind Quintet IV. 1 Hour.
Continuation of Woodwind Quintet III. Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4541. Accompanying IV. 1 Hour.}

Continuation of Accompanying III. Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: Senior standing and MUAP 410V. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4551. Percussion Ensemble IV. 1 Hour.}

Continuation of Percussion Ensemble III. Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4561. Musical Theater Orchestra IV. 1 Hour.
Instrumental ensemble with focus on the preparation and performance of musical theater pit orchestra music, in conjunction with UA Theater's mainstage musical. Admission by audition or director's approval. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4581. Chamber Choir IV. 1 Hour.}

Continuation of Chamber Choir III. Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4591. Treble Chorus IV. 1 Hour.}

Continuation of Women's Chorus III. Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the treble range. Admission is open to any student on campus that can sing in the treble range. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
MUEN 4601. Opera Theatre V. 1 Hour.
Continuation of Opera Theatre IV. Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval.
Prerequisite: Two semesters of MUEN 4401. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4631. Symphony Orchestra V. 1 Hour.}

Continuation of Symphony Orchestra IV. Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. Prerequisite: Two semesters of MUEN 4431. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4651. Schola Cantorum V. 1 Hour.}

Continuation of Schola Cantorum IV. Large, select choral ensemble with focus on the study and performance of a range of choral literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced singers; by audition only. Prerequisite: Two semesters of MUEN 4451. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4661. Wind Symphony V. 1 Hour.
Continuation of Wind Symphony IV. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission by audition. Prerequisite: Two semesters of MUEN 4461. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4671. Jazz Orchestra V. 1 Hour.
Continuation of Jazz Performance Laboratory IV. Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. Prerequisite: Two semesters of MUEN 4471. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4691. Wind Ensemble IV. 1 Hour.
Continuation of Wind Ensemble III. Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1691.
MUEN 4721. Clarinet Ensemble IV. 1 Hour.
Continuation of Clarinet Ensemble III. Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4731. Saxophone Ensemble IV. 1 Hour.}

Continuation of Saxophone Ensemble III. Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4741. Chamber Orchestra IV. 1 Hour.}

Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Senior standing and instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4761. New Music Ensemble IV. 1 Hour.}

Continuation of New Music Ensemble III. Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4771. Trombone Ensemble IV. 1 Hour.}

Continuation of Trombone Ensemble III. Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. Prerequisite: Senior standing. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

MUEN 4781. Tuba Ensemble IV. 1 Hour.
Continuation of Tuba Ensemble III. Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets quintets, and low brass choir. Rehearsal 2 hours per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 4801. Chamber Music V. 1 Hour.}

Continuation of Chamber Music IV. Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week. Prerequisite: Two semesters of MUEN 4501. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4811. Symphonic Band V. 1 Hour.
Continuation of Symphonic Band IV. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public are required. Admission is by audition or special approval. Prerequisite: Two semesters of MUEN 4511 and director's consent. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4831. Concert Band V. 1 Hour.
Continuation of Concert Band IV. Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. Prerequisite: Two semesters of MUEN 4491. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit This course is equivalent to MUEN 1491.

MUEN 4861. Wind Ensemble V. 1 Hour.
Continuation of Wind Ensemble IV. Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition Prerequisite: Two semesters of MUEN 4691. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
This course is equivalent to MUEN 1691.
MUEN 4881. Chamber Choir V. 1 Hour
Continuation of Chamber Choir IV. Study and performance of vocal chamber music Rehearsal 2 hours per week for 1 hour of credit. Prerequisite: Two semesters of MUEN 4581. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 4891. Women's Chorus V. 1 Hour.
Continuation of Women's Chorus IV. Select performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to repertory of the greater treble chorus canon. Admission by audition or director's consent. Prerequisite: Two semesters of MUEN 4591. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit

MUEN 4941. Marching Band V. 1 Hour
Continuation of Marching Band IV. Large ensemble performs at football games Emphasis on high performance standards and a variety of performing styles.
Rehearsal 8 hours per week. Prerequisite: Two semesters of MUEN 4441. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

MUEN 5211. Latin American Ensemble. 1 Hour.
This ensemble plays music of Latin America with particular focus on Afro-Caribbean music and its performance practices. Students will have an opportunity to perform, improvise, arrange and compose in a variety of styles such as Son, Danzon, Cha-Cha-Cha, Mambo, Latin Jazz, Salsa, and Timba. The ensemble will perform at least one concert per semester and occasionally will perform at other activities on and off campus. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 5221. World Music Ensemble. 1 Hour.
Students in the World Music Ensemble will closely study music and practices from a variety of musical cultures, while simultaneously acquiring solid grounding in music theory, musicianship skills, music history, and literature. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 5231. Songwriters' Ensemble. 1 Hour.}

A combined songwriting course and contemporary music ensemble. Students build a portfolio of original songs while studying elements of modern songwriting including harmony, lyrics, form, arranging, production and style. The class acts as an ensemble to present a recital of original music for the final performance. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

MUEN 5241. Beginning Jazz Combo. 1 Hour.
Introductory ensemble experience offering a repertoire-based approach to learning basic improvisation skills and the performance of common jazz styles. Open to both music and non-music majors. (Typically offered: Spring)

MUEN 5251. Arkansas Soul Band. 1 Hour.
Perform historical and contemporary popular music from the African American tradition. These genres include, but are not limited to, soul, blues, funk, R\&B, and hip-hop. Students will develop arranging and musical direction skills, as well as analysis of performance, arrangements, and compositions/songwriting in these styles. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 5261. Intermediate Jazz Combo. 1 Hour.}

Intermediate small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 5271. Advanced Jazz Combo. 1 Hour.
Advanced small jazz ensemble focused on improvisation in the context of bebop, free jazz, fusion, and related styles. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 5281. Vocal Jazz Ensemble. 1 Hour.
Presents the opportunity for vocal students interested in jazz to perform music as an ensemble. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit

MUEN 5401. Opera Theatre. 1 Hour.
Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval. (Typically offered: Fall and Spring) May be repeated for degree credit

\section*{MUEN 5411. Razorback Chorus. 1 Hour}

Performance-based choral ensemble designed to improve individual and collective vocal skills, develop sight-reading skills, improve the individual's grasp of the essential elements of music, and expose students to choral repertory in the tenorbass range. Admission is open to any student on campus that can sing in the tenorbass range. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUEN 5421. Inspirational Chorale. 1 Hour.
Performance of African-American literature with particular emphasis on Negro spirituals, traditional/contemporary gospel music and sacred world music. Rehearsal 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit

MUEN 5431. Symphony Orchestra. 1 Hour.
Rehearsal 3 hours per week with extra rehearsals at director's discretion. Admission with director's approval. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUEN 5441. Marching Band. 1 Hour.}

Rehearsal 8 hours per week. Admission with director's approval. (Typically offered: Fall) May be repeated for degree credit.

\section*{MUEN 5451. Schola Cantorum. 1 Hour.}

Vocal ensemble limited to the more experienced singers. Rehearsal 5 hours per week. Admission with director's approval. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUEN 5461. Wind Symphony. 1 Hour.
Rehearsal 3 to 5 hours per week. Admission by audition and approval of the conductor. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUEN 5471. Jazz Orchestra. 1 Hour.
Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUEN 5491. Concert Band. 1 Hour.}

Large ensemble setting with emphasis on performing wind band literature and enhancing the musicianship of members. Focus on performance standards through style and interpretation. Concerts of artistic merit which serve the campus community and general public may be required. Admission is by audition or special approval. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 5501. Chamber Music. 1 Hour.}

Performance of small ensemble music for any combination of instruments and/ or voice. Rehearsal 3 hours per week. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUEN 5521. Woodwind Quintet. 1 Hour.}

Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision.
Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUEN 5541. Accompanying. 1 Hour.}

Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Pre- or Corequisite: MUAP 510V. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUEN 5551. Percussion Ensemble. 1 Hour.
Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week. (Typically offered: Spring and Summer) May be repeated for degree credit.

\section*{MUEN 5691. Wind Ensemble. 1 Hour.}

Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation.
Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 5721. Clarinet Ensemble. 1 Hour.
Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUEN 5741. Chamber Orchestra. 1 Hour.}

Explores the string orchestra literature with a focus on proficient string orchestra performance practices and effective music preparation strategies. Explores balance, blend, articulation, style, and rehearsal technique that is inherent to a string ensemble or a string section. Prerequisite: Graduate standing and instructor's consent. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

MUEN 5761. New Music Ensemble. 1 Hour.
Small, select ensemble with emphasis on music written in the last hundred years, especially by important living composers. Focus on audience engagement through high performance standards, unconventional settings, and programs unique to the region. Off-campus appearances and outreach activities are required. Admission by consent. (Typically offered: Fall and Spring)

MUEN 5771. Trombone Ensemble. 1 Hour.
Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week. (Typically offered: Irregular) May be repeated for degree credit.

MUEN 5781. Tuba Ensemble. 1 Hour.
Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets, quintets, and low brass choir. Rehearsal 2 hours per week. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUEN 5881. Chamber Choir. 1 Hour.
Continuation of Chamber Choir V for graduate students. Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. (Typically offered: Fall and Spring)

\section*{MUEN 6431. Symphony Orchestra VI. 1 Hour.}

Large, select orchestral ensemble setting with a focus on the study and performance of a range of symphonic literature. Emphasis on high artistic standards through style and interpretation. Enrollment limited to more experienced players; by audition only. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 6451. Schola Cantorum VI. 1 Hour.}

Vocal ensemble limited to the more experienced singers. Rehearsal 5 hours per week. Admission with director's approval. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

MUEN 6691. Wind Ensemble VI. 1 Hour.
Large ensemble setting performing orchestral wind and symphonic band literature with emphasis on high performance standards through style and interpretation. Concerts of high artistic merit which serve the campus community and general public are required. Admission is by audition. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{MUEN 6881. Chamber Choir. 1 Hour.}

Continuation of Chamber Choir V for doctoral students. Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{Music History (MUHS) \\ \\ Courses} \\ \\ Courses}

MUHS 3503. Jazz History. 3 Hours.
This course includes overviews of major jazz styles, significant musicians, related historical events, and critical approaches in the field of jazz studies. Students will build skills in active listening, transcription, and academic reading and writing while expanding their familiarity with musical techniques and the cultural history of jazz. Prerequisite: MLIT 1013 or MLIT 1013H. (Typically offered: Fall)

MUHS 3703. Music in Western Civilization. 3 Hours.
Introduction to the study of Western music, history, scholarship, and research methods. Analyzes musical monuments as aesthetic objects and considers their relation to such issues as exoticism, politics and religious belief, as well as the status of this canon in the early twenty-first century. Prerequisite: (MLIT 1013 or MLIT 1013H) and MUTH 1603 or instructor's consent. (Typically offered: Fall and Spring)

\section*{MUHS 3713. Topics in Musicology. 3 Hours.}

Topics in Western, world, and popular musics. Prerequisite: ((MLIT 1013 or MLIT 1013H) and MUTH 1603) or instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{MUHS 4253. Capstone Project Seminar. 3 Hours.}

Develop a project related to a specific area of musical study. Options include musicological research papers, music theoretical analyses, music cognition research projects, performance lecture recitals, and recording projects with a written component. Prerequisite: MUHS 3703 and MUHS 3713. (Typically offered: Fall and Spring)

\section*{MUHS 4253H. Honors Capstone Project Seminar. 3 Hours.}

Develop a project related to a specific area of musical study. Options include musicological research papers, music theoretical analyses, music cognition research projects, performance lecture recitals, and recording projects with a written component. Prerequisite: MUHS 3703 and MUHS 3713 and honors standing. (Typically offered: Spring)
This course is equivalent to MUHS 4253.

\section*{MUHS 4623. Music History Review. 3 Hours}

Review of the central data and concepts of music history, with emphasis on individual periods as needed by students enrolled. Credit in this course may not count toward the Master of Music or Master of Education degree. (Typically offered: Fall)

\section*{MUHS 4703. Survey of String Literature. 3 Hours.}

A survey of solo and chamber music literature involving stringed instruments. Prerequisite: MUAP 110V and MUTH 3613. (Typically offered: Fall Even Years)

MUHS 4733. Survey of Symphonic Literature. 3 Hours.
A survey of the symphonic literature from its beginning to the present. (Typically offered: Fall Odd Years)

MUHS 4763. Survey of Vocal Literature I. 3 Hours.
A survey of concert literature for the solo voice. (Typically offered: Fall Even Years)
MUHS 4773. Survey of Vocal Literature II. 3 Hours.
A survey of concert literature for the solo voice. Prerequisite: MUHS 4763. (Typically offered: Spring Odd Years)

MUHS 4793. Band Literature. 3 Hours.
A study of literature written for performance by concert band, symphonic band, and wind ensemble, representative of the following five periods in Music History: Renaissance (1420-1600), Baroque (1600-1750), Classical (1750-1820), Romantic (1820-1900), and Contemporary (1900-present). (Typically offered: Irregular)

\section*{MUHS 4803. Survey of Keyboard Literature I. 3 Hours.}

A survey of the piano works of outstanding composers. Prerequisite: MUAP 110V. (Typically offered: Fall Even Years)

\section*{MUHS 4813. Survey of Keyboard Literature II. 3 Hours.}

A survey of the piano works of outstanding composers. Prerequisite: MUHS 4803. (Typically offered: Spring Odd Years)

MUHS 489V. Seminar in Music History. 1-4 Hour.
Subject matter not covered in other courses. With permission, may be repeated for credit if topics are different. (Typically offered: Irregular) May be repeated for degree credit.

\section*{MUHS 5253. Special Topics in Music History. 3 Hours.}

Topics in world, Western, and popular musics. May be required based on graduate musicology entrance exam. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{MUHS 5263. History of Black Sacred Music. 3 Hours.}

Explores the major forms of Black Sacred Music indigenous to the United States. Students are engaged in multi-layered experiences of history, aesthetics, and ethnography. (Typically offered: Summer)

MUHS 5563. Collaborative Piano Literature I, Woodwind and Brass Repertoire. 3 Hours.
Survey of collaborative literature for piano and wind or brass instruments. Focus on music for the collaborative duo (instrument and piano) including sonatas and concerti. (Typically offered: Fall Even Years)

MUHS 5573. Collaborative Piano Literature II, String Repertoire. 3 Hours.
Survey of collaborative literature for the piano. Focus on the repertoire of sonatas, concerti and concert works for the piano and instrument (violin, viola, cello, and double bass). (Typically offered: Spring Odd Years)

MUHS 5633. Survey of Symphonic Literature. 3 Hours.
A survey of the symphonic literature from its beginning to the present. Graduate degree credit will not be given for both MUHS 4733 and MUHS 5633. (Typically offered: Fall Odd Years)

\section*{MUHS 5673. Survey of Vocal Literature II. 3 Hours.}

A survey of concert literature for the solo voice. Graduate degree credit will not be given for both MUHS 4773 and MUHS 5673. Prerequisite: MUHS 4763. (Typically offered: Spring Odd Years)

\section*{MUHS 5693. Band Literature. 3 Hours.}

A study of literature written for performance by concert band, symphonic band, and wind ensemble, representative of the following five periods in Music History: Renaissance (1420-1600), Baroque (1600-1750), Classical (1750-1820), Romantic (1820-1900), and Contemporary (1900-present). Graduate degree credit will not be given for both MUHS 4793 and MUHS 5693. (Typically offered: Irregular)

\section*{MUHS 5703. Survey of String Literature. 3 Hours.}

A survey of solo and chamber music literature involving stringed instruments. Graduate degree credit will not be given for both MUHS 4703 and MUHS 5703. Prerequisite: MUAP 110V and MUTH 3613. (Typically offered: Fall Even Years)

MUHS 5722. Directed Studies in Music Literature I. 2 Hours.
Research in music literature in the performance field of the individual student. (Typically offered: Fall and Spring)

MUHS 5732. Directed Studies in Music Literature II. 2 Hours.
Research in music literature in the performance field of the individual student. Prerequisite: MUHS 5722. (Typically offered: Fall and Spring)

MUHS 5763. Survey of Vocal Literature I. 3 Hours.
A survey of concert literature for the solo voice. Graduate degree credit will not be given for both MUHS 4763 and MUHS 5763. (Typically offered: Fall Even Years)

MUHS 5803. Survey of Keyboard Literature I. 3 Hours.
A survey of the piano works of outstanding composers. Graduate degree credit will not be given for both MUHS 4803 and MUHS 5803. Prerequisite: MUAP 110V. (Typically offered: Fall Even Years)

\section*{MUHS 5813. Survey of Keyboard Literature II. 3 Hours.}

A survey of the piano works of outstanding composers. Graduate degree credit will not be given for both MUHS 4813 and MUHS 5813. Prerequisite: MUHS 4803. (Typically offered: Spring Odd Years)

\section*{MUHS 589V. Seminar in Music History. 1-4 Hour.}

Subject matter not covered in other courses. With permission, may be repeated for credit if topics are different. Graduate degree will not be given for both MUHS 489V and MUHS 589V. (Typically offered: Irregular) May be repeated for degree credit.

MUHS 5903. Seminar in Musicology. 3 Hours.
Focuses on specialized topics and repertoires within the history of Western music and introduces students to musicological approaches to these subjects. Prerequisite: MUHS 5973 or instructor consent. (Typically offered: Spring) May be repeated for degree credit.

\section*{MUHS 5952. Choral History and Literature I. 2 Hours.}

Detailed study of choral history and literature from Gregorian chant to J.S. Bach. (Typically offered: Irregular)

MUHS 5962. Choral History and Literature II. 2 Hours.
Detailed study of choral history and literature from J.S. Bach to the present. (Typically offered: Irregular)

MUHS 5973. Seminar in Bibliography and Methods of Research. 3 Hours.
A survey of the methods and materials of musical research, including bibliography, methods of analysis, and style in the presentation of research results. Open to graduate students and to juniors in Honors. (Typically offered: Fall)

\section*{MUHS 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{MUHS 6633. Survey of Symphonic Literature. 3 Hours.}

A survey of the symphonic literature from its beginning to the present. (Typically offered: Irregular)

\section*{MUHS 6693. Band Literature. 3 Hours.}

A study of literature written for performance by concert band, symphonic band, and wind ensemble, representative, but not limited to, the following five periods in Music History: Renaissance (1420-1600), Baroque (1600-1750), Classical (1750-1820), Romantic (1820-1900), and Contemporary (1900-present). (Typically offered: Irregular)

\section*{MUHS 6903. Seminar in Musicology. 3 Hours.}

Specialized topics and repertoires within the history of music and introduces students to musicological approaches to these subjects. (Typically offered: Irregular)

\section*{MUHS 6952. Choral History and Literature I. 2 Hours.}

Detailed study of choral history and literature from Gregorian chant to J.S. Bach. (Typically offered: Fall)

MUHS 6962. Choral History and Literature II. 2 Hours.
Detailed study of choral history and literature from J.S. Bach to the present. (Typically offered: Spring)

MUHS 6973. Seminar in Bibliography and Methods of Research. 3 Hours.
Methods and materials of musical research, including bibliography, methods of analysis, and style in the presentation of research results. (Typically offered: Spring)

\section*{Music Industry (MUIN)}

\section*{Courses}

MUIN 2011. Contemporary Commercial Songwriting. 1 Hour.
Introduction to the songwriting craft and profession by studying songwriting techniques, creating original songs, and exploring business aspects of the songwriting component of the music industry. No prior music courses or experience required. Instrumental, vocal, or music technology skills encouraged. (Typically offered: Fall, Spring and Summer)

\section*{MUIN 3213. 21st Century Music Industry. 3 Hours.}

An overview of the 21st-century music industry focusing on history, current developments, and foundational concepts. Includes an in-depth examination of the publishing, recording, and live entertainment components of the music industry as well as contemporary entrepreneurial pathways. (Typically offered: Fall and Spring)

MUIN 3313. The Art of Music Production. 3 Hours.
Foundational skills used in creating, editing, mixing, producing recordings using digital production techniques. Topics include properties of sound, tools of the audio trade, philosophy and methodology of recording, and how to manipulate sound in a variety of ways once captured. (Typically offered: Fall and Spring)

\section*{MUIN 3403. Composing for Film and Television. 3 Hours.}

Develop the tools needed to create original music for visual media. Focuses on the aesthetics, procedures, and technical aspects of scoring for film and television. Completion of MUTH 3613 Form and 20th Century Techniques or MUTH 3723 Jazz Analysis is recommended. Prerequisite: (MUAC 2112 and MUTH 2603) or instructor consent. (Typically offered: Fall and Spring)

MUIN 405V. Independent Study in Music Industry. 1-3 Hour.
Students will complete a research project, a business or entrepreneurship project, or an artistic project working closely with faculty from multiple music industry disciplines. Prerequisite: MUIN 3213 and Instructor Consent. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

MUIN 4103. Legal Aspects of the Music Industry. 3 Hours.
Presents an in-depth look at the many types of legal agreements and concepts in the music industry commonly utilized by artists, composers, and corporations. Topics include copyright, trademark, recording contracts, management, publishing and licensing. (Typically offered: Fall and Spring)
MUIN 4553. Live Music Business. 3 Hours.
The applied component of the live music business corresponding to the studentrun record label services project in the department of music. Incorporates live music project cycles, digital marketing of live music, booking venues, routing tours, creating showcase events for student-run record label artists. Corequisite: Lab component. (Typically offered: Fall)

\section*{MUIN 4563. Artist Development. 3 Hours.}

The applied component of the artist development side of the music department's student-run label services project. Students will work on project cycles involving selecting artists, recording and producing music, organizing music releases and media campaigns, creating online promotional strategies, and mapping the development of musical artists' careers. Corequisite: Lab component. (Typically offered: Spring)

\section*{MUIN 5102. Production Internship. 2 Hours.}

Explores the acoustical, musical, visual, technical, and business aspects of live performance. Practical experiences in evaluating and comparing several different live and studio recording techniques. (Typically offered: Irregular)

\section*{MUIN 5553. Live Music Business. 3 Hours.}

The applied component of the live music business corresponding to the studentrun record label services project in the department of music. Incorporates live music project cycles, digital marketing of live music, booking venues, routing tours, creating showcase events for student-run record label artists. (Typically offered: Fall)

\section*{MUIN 5563. Artist Development. 3 Hours.}

The applied component of the artist development side of the music department's student-run label services project. Students will work on project cycles involving selecting artists, recording and producing music, organizing music releases and media campaigns, creating online promotional strategies, and mapping the development of musical artists' careers. (Typically offered: Spring)

\section*{Music Literature (MLIT)}

\section*{Courses}

MLIT 1003. Experiencing Music (ACTS Equivalency = MUSC 1003). 3 Hours. Examines how music reflects and impacts culture while familiarizing students with various musical styles, forms and ideas. Develops listening skills and introduces basic music vocabulary and fundamentals. (Typically offered: Fall, Spring and Summer)
MLIT 1003H. Honors Experiencing Music. 3 Hours.
Examines how music reflects and impacts culture while familiarizing students with various musical styles, forms and ideas. Develops listening skills and introduces basic music vocabulary and fundamentals. (Typically offered: Fall and Spring) This course is equivalent to MLIT 1003.

\section*{MLIT 1013. Music and Society. 3 Hours.}

Introduction to academic study of Western art music, jazz, popular music, and world music. Students will gain experience in guided listening and in reading, writing, and critical thinking about musical cultures and their roles in society. Required for music majors. Prerequisite: Music major or music minor or instructor consent. (Typically offered: Spring)

MLIT 1013H. Honors Music and Society. 3 Hours.
Introduction to academic study of Western art music, jazz, popular music, and world music. Students will gain experience in guided listening and in reading, writing, and critical thinking about musical cultures and their roles in society. Required for music majors. Prerequisite: Music major or music minor and honors standing or instructor consent. (Typically offered: Fall)
This course is equivalent to MLIT 1013.
MLIT 1333. Popular Music. 3 Hours.
Covers the history of popular music during the 20th and 21 st centuries within its social and cultural contexts. Examines the origins, evolution, and stylistic features of prominent popular genres, such as country, rock, blues, hip hop, and soul. (Typically offered: Fall and Spring)

\section*{Music Pedagogy (MUPD)}

\section*{Courses}

MUPD 3801. Conducting I. 1 Hour.
A study of the elementary techniques of conducting instrumental and choral groups. Prerequisite: MUTH 2603. (Typically offered: Fall)

MUPD 3811. Conducting II: Instrumental Music. 1 Hour.
Continuation of study of the technique of conducting instrumental music groups. Prerequisite: MUPD 3801. (Typically offered: Spring)

MUPD 3861. Conducting II: Vocal Music. 1 Hour.
Continuation of study of conducting with emphasis on techniques of choral conducting. Prerequisite: MUPD 3801. (Typically offered: Spring)

\section*{MUPD 3871. Reed-Making. 1 Hour.}

The making of reeds for oboe, bassoon, or clarinet, including the processing of cane from tubes. (Typically offered: Fall) May be repeated for up to 2 hours of degree credit.

MUPD 3883. Jazz Pedagogy. 3 Hours.
This course will provide future teachers with a sequenced method and resource materials to teach jazz songs, style, and improvisation by ear and from sheet music in instrumental and vocal ensembles. The course will also address ensemble rehearsal techniques and teaching individual students. The teaching content includes a variety of songs from the jazz tradition appropriate for students in middle school, high school, and college, along with tools for assessment of student progress. (Typically offered: Irregular)

\section*{MUPD 477V. Special Topics in Pedagogy. 1-6 Hour.}

Subject matter not covered in other sources. With permission, may be repeated for credit if topics are different. (Typically offered: Irregular) May be repeated for degree credit.

\section*{MUPD 481V. Conducting. 1-4 Hour.}

Private lessons of \(1 / 2\) hour, and one hour conducting laboratory each week. Development of skills in conducting symphony, opera, oratorio, ballet and band repertoire. (Typically offered: Fall and Spring) May be repeated for degree credit.

MUPD 4863. Piano Pedagogy. 3 Hours.
Analytical study and discussion of the various approaches to piano pedagogy and its application in individual/class instruction. Involves demonstration of principles through actual teaching of beginning, intermediate and upper level students. (Typically offered: Spring Even Years)

\section*{MUPD 5763. Piano Pedagogy. 3 Hours.}

Analytical study and discussion of the various approaches to piano pedagogy and its application in individual/class instruction. Involves demonstration of principles through actual teaching of beginning, intermediate and upper level students. Graduate degree credit will not be given for both MUPD 4863 and MUPD 5763. (Typically offered: Spring Even Years)

MUPD 577V. Special Topics in Pedagogy. 1-6 Hour.
Subject matter not covered in other sources. With permission, may be repeated for credit if topics are different. Graduate degree credit will not be given for both MUPD 477V and MUPD 577V. (Typically offered: Irregular) May be repeated for degree credit.

\section*{MUPD 582V. Conducting. 1-4 Hour.}

Private lessons of \(1 / 2\) hour and 1 hour conducting laboratory each week. Development of skills in conducting symphony, choral, opera, oratorio, ballet, and band repertoire. (Typically offered: Fall and Spring) May be repeated for up to 18 hours of degree credit.

\section*{MUPD 599V. Special Workshop in Music. 1-6 Hour.}

Presented by visiting master artist-teacher in various fields of music performance, teaching and composition. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{MUPD 700V. Doctoral Dissertation. 1-6 Hour.}

Written documentation of research in choral conducting, to be paired with lecture recital and/or doctoral conducting project. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

\section*{Music Theory (MUTH)}

\section*{Courses}

MUTH 1003. Basic Musicianship. 3 Hours.
Introductory-level studies in music theory and aural perception for students not prepared for MUTH 1603 or MUTH 1621. (Typically offered: Fall)

\section*{MUTH 1603. Music Theory I. 3 Hours.}

A study of diatonic harmonic practice. Includes part-writing and analysis. Prerequisite: A grade of C or better in MUTH 1003 or instructor consent. (Typically offered: Spring)

MUTH 1621. Aural Perception I. 1 Hour.
Development of aural perception through ear training, sight singing, and keyboard harmony. Meets 2 hours per week. (Typically offered: Spring)

\section*{MUTH 1631. Aural Perception II. 1 Hour.}

Continued development of aural perception through ear training, sight singing, and keyboard harmony. Meets 2 hours per week. Prerequisite: A grade of C or better in MUTH 1621. (Typically offered: Fall)
MUTH 164V. Composition I. 1-4 Hour.
Private lessons of one-half hour, and one hour of composition laboratory session each week. Development of skills in creative musical expression. Specifically for composition-theory majors. Others admitted by consent. Prerequisite: Music theory or composition major. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.
MUTH 2603. Music Theory II. 3 Hours.
A continuation of MUTH 1603. Also includes chromatic harmony. Prerequisite: A grade of C or better in MUTH 1603. (Typically offered: Fall)
MUTH 2621. Aural Perception III. 1 Hour.
A continuation of MUTH 1631. Two hours per week, one hour credit. Prerequisite: A grade of C or better in MUTH 1631. (Typically offered: Spring)
MUTH 2631. Aural Perception IV. 1 Hour.
A continuation of MUTH 2621. Two hours per week, one hour credit. Prerequisite: A grade of C or better in MUTH 2621. (Typically offered: Fall)

\section*{MUTH 264V. Composition II. 1-4 Hour.}

Continuation of Composition I. Private lessons of one-half hour, and one hour of composition laboratory session per credit hour each week. Continued development of skills in creative musical expression. Specifically for composition-theory majors.
Others admitted by consent. Prerequisite: Two semesters of MUTH 164V with grades of "B" and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

\section*{MUTH 3603. 18th Century Counterpoint. 3 Hours.}

A study of 18th century counterpoint. Writing and analysis of inventions, canons, fugues, etc. Three hours per week. Prerequisite: A grade of C or better in MUTH 2603. (Typically offered: Spring)

\section*{MUTH 3613. Form and 20th Century Techniques. 3 Hours.}

A study of the harmonic and melodic trends of the 20th century. Three hours per week. Prerequisite: A grade of C or better in MUTH 2603. (Typically offered: Fall)

\section*{MUTH 364V. Composition III. 1-4 Hour}

Continuation of Composition II. Private lessons of one-half hour, and one hour of composition laboratory session per credit hour each week. Continued development of advanced skills in creative musical expression. Specifically for composition-theory majors. Others admitted by consent. Prerequisite: Two semesters of MUTH 264V with grades of B and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

\section*{MUTH 364VH. Honors Composition III. 1-4 Hour.}

Continuation of Composition II for honors students. Private lessons of onehalf hour, and one hour of composition laboratory session per credit hour each week. Continued development of advanced skills in creative musical expression. Specifically for honors composition-theory majors. Prerequisite: Two semesters of MUTH 264V with grades of "B", recommendation of instructor and honors standing. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.
This course is equivalent to MUTH 364 V .

\section*{MUTH 3723. Jazz Analysis. 3 Hours.}

This course is an introduction to jazz analysis. Course content will include lead sheet symbols, jazz progressions, lead sheet analysis, improvisation, phrasing and meter, and aural skills. Prerequisite: A grade of C or better in MUTH 2603. (Typically offered: Irregular)

\section*{MUTH 3733. Functional Jazz Piano. 3 Hours.}

This course is intended for both jazz pianists and non-pianists and provides methods for common jazz piano voicings. Through practical applications and drills, the students will be familiar with a variety of common voicings techniques, including (but not limited to): 1) "shell" voicing, 2) two-note critical tone voicings (both with roots and rootless), 3) three-note left-hand voicings, and 4) four-part "drop 2" voicings. Also, this course will provide basic techniques for improvisation. Prerequisite: MUTH 1603 and MUTH 1621, both with grades of C or better. (Typically offered: Irregular)

MUTH 3742. Jazz Arranging. 2 Hours.
This course introduces students to techniques in arranging for small and large jazz ensembles. Students will analyze representative examples of various jazz styles, learn technical features of common jazz instruments, experiment with common approaches to arranging, and write their own arrangements of jazz standards for small ensemble and big band. Prerequisite: MUTH 2603. (Typically offered: Irregular)

\section*{MUTH 4322. Score Reading. 2 Hours.}

A conductor's approach to the technique of score reading and analysis of orchestra, band, and choral scores for the purpose of preparing composition for rehearsal and performance. (Typically offered: Fall)

\section*{MUTH 4612. Orchestration. 2 Hours.}

A continuation of study of the capabilities of the various orchestral and band instruments and their use in arrangement for ensembles, band, and orchestra. Scoring for orchestra. Prerequisite: MUTH 3613. (Typically offered: Spring)

\section*{MUTH 462V. Music Theory Review. 1-3 Hour.}

A continuation and intensification of undergraduate music theory. (May not count for credit toward the Master of Music degree.) (Typically offered: Fall)

\section*{MUTH 464V. Composition IV. 1-4 Hour.}

Continuation of Composition III. Private lessons of one-half hour and one hour of composition laboratory session per credit hour each week. Continued development of advanced skills in creative musical expression. Specifically for composition-theory majors. Others admitted by consent. Prerequisite: Two semesters of MUTH 364V with grades of " B " and recommendation of instructor. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

\section*{MUTH 4703. Writing Music Analysis. 3 Hours.}

Analysis of music with an emphasis on analytical writing skills and the use of library source materials. Prerequisite: MUTH 3603. (Typically offered: Spring)

MUTH 477V. Special Topics in Music Theory. 1-4 Hour.
Subject matter not covered in other courses. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for degree credit.

MUTH 477VH. Honors Special Topics in Music Theory. 1-4 Hour.
Subject matter not covered in other courses. (Typically offered: Irregular) May be repeated for up to 8 hours of degree credit.
This course is equivalent to MUTH 477V.
MUTH 498V. Senior Thesis. 1-18 Hour.
Senior Thesis. (Typically offered: Fall, Spring and Summer)

\section*{MUTH 5322. Score Reading. 2 Hours.}

A conductor's approach to the technique of score reading and analysis of orchestra, band, and choral scores for the purpose of preparing composition for rehearsal and performance. Graduate degree credit will not be given for both MUTH 4322 and MUTH 5322. (Typically offered: Fall)

\section*{MUTH 5343. Analytical Techniques. 3 Hours.}

An intensive study of selected works from music literature. Schenkerian analysis, rhythmic analysis, and set theory analytical techniques will be studied and employed in addition to traditional harmonic and formal analysis. Prerequisite: MUTH 3613 or equivalent and graduate standing. (Typically offered: Irregular)

MUTH 5612. Orchestration. 2 Hours.
A continuation of study of the capabilities of the various orchestral and band instruments and their use in arrangement for ensembles, band, and orchestra. Scoring for orchestra. Graduate degree credit will not be given for both MUTH 4612 and MUTH 5612. Prerequisite: MUTH 3613. (Typically offered: Spring)

\section*{MUTH 5623. Pedagogy of Theory. 3 Hours.}

Detailed study of methods of teaching undergraduates courses in music theory and aural perception. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{MUTH 5643. Analysis of 20th Century Music. 3 Hours.}

Study of 20th century music and analytic techniques including pitch class set theory and serial techniques. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{MUTH 5672. Advanced Orchestration. 2 Hours.}

A study of advanced principles of orchestral writing through individual projects in scoring and analysis. Prerequisite: MUTH 4612 or MUTH 5612 (formerly MUTH 4612) or equivalent. (Typically offered: Irregular)

MUTH 568V. Composition. 1-4 Hour.
Private lessons of one-half hour, and one hour of composition laboratory session each week. Development of skills in creative musical expression specifically for composition-theory majors - others admitted by consent. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{MUTH 5703. Writing Music Analysis. 3 Hours.}

Analysis of music with an emphasis on analytical writing skills and the use of library source materials. Graduate degree credit will not be given for both MUTH 4703 and MUTH 5703. Prerequisite: MUTH 3603. (Typically offered: Spring)

\section*{MUTH 5723. Advanced Jazz Analysis. 3 Hours.}

Provides experience in analyzing jazz, focusing on conventions of jazz music from the 1930s to 1970s. Explores the ways jazz musicians define and discuss common jazz idiom. (Typically offered: Fall, Spring and Summer)

\section*{MUTH 577V. Special Topics in Music Theory. 1-4 Hour.}

Subject matter not covered in other courses. Graduate degree credit will not be given for both MUTH 477V and MUTH 577V. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for degree credit.

MUTH 5803. Advanced Jazz Composition and Arranging. 3 Hours.
Advanced composing and arranging for jazz ensembles, to include score/part in music preparation. (Typically offered: Fall, Spring and Summer)

MUTH 599V. Independent Study in Music Theory. 1-6 Hour.
Provides students with an opportunity to pursue special study of topics in music theory. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{MUTH 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{MUTH 6343. Analytical Techniques. 3 Hours.}

An intensive study of selected works from music literature. Schenkerian analysis, rhythmic analysis, and set theory analytical techniques will be studied and employed in addition to traditional harmonic and formal analysis. (Typically offered: Irregular)

\section*{MUTH 6643. Analysis of 20th Century Music. 3 Hours.}

Study of 20th century music and analytic techniques including pitch class set theory and serial techniques. (Typically offered: Irregular)

MUTH 6773. Special Topics in Music Theory. 3 Hours.
Subject matter not covered in other courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit

\section*{Nursing (NURS)}

\section*{Courses}

\section*{NURS 2012. Nursing Informatics. 2 Hours}

This course focuses on how information technology is used in the health care system. The course describes how nursing informatics is currently being used by healthcare professionals and speculates about future applications. Prerequisite: Admission to the NURS-PLRN major. (Typically offered: Fall, Spring and Summer)

\section*{NURS 2022. Introduction to Professional Nursing Concepts. 2 Hours.}

The course presents an overview of theories, principles and concepts essential to professional nursing practice. It includes ethical and legal implications relevant to health care systems. Focus is on the nursing process as the organizing framework for the delivery of care. It also explores the role of the professional nurse. This is a pre-nursing course. Prerequisite: For pre-nursing and nursing majors only. Must have sophomore standing or above and a GPA of 3.0 or above. (Typically offered: Fall, Spring and Summer)

\section*{NURS 2032. Therapeutic and Interprofessional Communication. 2 Hours.}

Focuses on intrapersonal and interpersonal strategies necessary for effective nurseclient interactions. Introduces a variety of communication techniques skills including group process and dynamics. This is a pre-nursing course. Prerequisite: Admission to the NURS-PLRN major. (Typically offered: Fall, Spring and Summer)

NURS 3111. Clinical Skills for Professional Nurses. 1 Hour.
Students apply nursing concepts and skills with emphasis on the caregiver role transition and use of the nursing process. Prerequisite: Admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head, and students must have completed all University core and program prerequisites. Pre- or Corequisite: NURS 4323. (Typically offered: Fall and Spring)

\section*{NURS 3302. Older Adult Nursing. 2 Hours.}

This course builds on previous nursing knowledge by focusing on gerontologic theories, concepts, and principles as they relate to nursing care of older adults. Students explore socio-cultural context of gerontologic nursing, professional standards of practice, common health concerns, and future considerations. Prerequisite: NURS 4323, NURS 4313 and admission of to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

\section*{NURS 3313. Pharmacology in Nursing. 3 Hours.}

The use of therapeutic drugs in health care is the focus of the course. Nursing assessment, safety measures and client education related to drug therapy are emphasized. This is a Level I course. Prerequisite: Admission into the BSN professional program. (Typically offered: Fall and Spring)

\section*{NURS 3314. Pathophysiology. 4 Hours.}

The course focuses on underlying concepts common to pathophysiologic processes across the life span. Factors that contribute to altered physiological functioning and the body's adaptive and compensatory mechanisms are studied. Emphasizes concepts essential for understanding the rationale for preventive and therapeutic nursing interventions in health and illness. This is a Level I course. Prerequisite: Admission into BSN professional program. (Typically offered: Fall and Spring)

NURS 3321L. Health Assessment Practicum. 1 Hour.
The course focuses on the implementation of concepts and principles of health assessment, preparing students to complete a holistic health assessment of the well person. This is a Level I course. Corequisite: NURS 3342. Prerequisite: BIOL 2443, BIOL 2441L, BIOL 2213, BIOL 2211L, and admission to the BSN professional program. (Typically offered: Fall, Spring and Summer)

\section*{NURS 3332. Adult Health I for Nurses. 2 Hours}

The course focuses on the experience of acute problems across the health-illness continuum. Students learn to utilize the nursing process through care planning and case studies while focusing on the adult population. Prerequisite: NURS 4313, NURS 3302 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 3342. Health Assessment. 2 Hours.
This course focuses on concepts and principles of health assessment in a well person. Health status, environment, physical and psychosocial findings, and medical terminology are emphasized to create a holistic health assessment plan. This is a Level I course. Prerequisite: Admission into the BSN professional program of studies, BIOL 2443, BIOL 2441L, BIOL 2213 and BIOL 2211L. Corequisite: NURS 3321L. (Typically offered: Fall and Spring)

\section*{NURS 3402. Nursing Concepts: Older Adult. 2 Hours.}

This course focuses on gerontologic theories, concepts, and principles as they relate to nursing care of older adults. Students explore socio-cultural context of gerontologic nursing, professional standards of practice, common health concerns, and future considerations. This is a Level I course. Prerequisite: Admission into the BSN Professional Program of Studies. (Typically offered: Fall and Spring)

NURS 3422. Nursing Concepts: Foundations of Professional Practice. 2 Hours. Introduction to the nursing process and the scope of basic human needs. The student learns to use nursing diagnoses and care plans in case studies. This is a Level I course. Corequisite: NURS 3424. Prerequisite: Admission to BSN professional program. (Typically offered: Fall and Spring)

NURS 3424. Professional Role Implementation I: Caregiver. 4 Hours. Students apply basic nursing concepts and skills in laboratory and clinical settings. Emphasis is on the role of nurse as caregiver and use of the nursing process in the delivery of care. This is a Level I course. Pre- or Corequisite: NURS 3422, NURS 3321L, and NURS 3313. Prerequisite: Admission to the BSN program. (Typically offered: Fall and Spring)
NURS 3634. Nursing Concepts: Adult Health and IIIness I. 4 Hours.
Focuses on the adult population experiencing acute problems in the health-illness continuum. Utilizing the nursing process, nursing, and medical treatments of selected conditions that will be emphasized in the acute care setting. This is a Level I course. Corequisite: NURS 3644. Prerequisite: NURS 3313, NURS 3314, NURS 3321L, NURS 3402, and NURS 3422. (Typically offered: Fall and Spring)
NURS 3644. Professional Role Implementation II: Caregiver. 4 Hours.
Emphasizes the role of caregiver in acute care settings. Course expands on assessment and includes advanced clinical skills. Emphasizes the use of clinical judgment to promote optimal health for adults experiencing illness and/ or undergoing surgery. This is a Level I course. Pre- or Corequisite: NURS 3634. Prerequisite: NURS 3313, NURS 3314, NURS 3321L, NURS 3402, NURS 3422, and NURS 3424. (Typically offered: Fall and Spring)
NURS 3742. Nursing Concepts: Mental Health and IIIness. 2 Hours.
Presents the basic concepts and theories of mental health and illness. Examines various therapeutic modalities in the care of clients experiencing mental health or psychosocial disorders. This is a Level I course. Corequisite: NURS 3752. Prerequisite: NURS 3313, NURS 3314, NURS 3321L, NURS 3402, and NURS 3422. (Typically offered: Fall and Spring)
NURS 3752. Professional Role Implementation III: Caregiver. 2 Hours. Students work with clients who have mental health problems, observe group process in therapy sessions, and develop interpersonal communication skills. Students apply research-based knowledge in assisting assigned clients to meet mental and other health care needs. The caregiver role is emphasized. This is a Level I course. Preor Corequisite: NURS 3742. Prerequisite: NURS 3313, NURS 3314, NURS 3321L, NURS 3402, NURS 3422, and NURS 3424. (Typically offered: Fall and Spring)

\section*{NURS 3772. Mental Health Nursing. 2 Hours.}

This course presents basic concepts and theories of mental health and illness. Students examine nursing care of clients with various mental health and psychosocial disorders. Therapeutic modalities and their use in a variety of settings are explored. Prerequisite: NURS 4323 and NURS 3111 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)
NURS 3782. Mental Health Practicum. 2 Hours.
Students will apply the theoretical principles learned in the NURS 3772: Mental Health Nursing to the care of clients with mental health disorders in a variety of settings. Prerequisite: NURS 4323, and NURS 3111 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. Pre- or Corequisite: NURS 3772. (Typically offered: Fall, Spring and Summer)

NURS 3842. Foundations of Scientific Evidence in Nursing Practice. 2 Hours. Introduction to the use of scientific evidence in nursing through a comparative analysis of selected studies. Theoretical, methodological, and analytical approaches are explored. Students acquire basic competencies in evaluating, interpreting, and applying evidence-based knowledge for use in professional nursing practice. This is a Level I course. (Typically offered: Fall and Spring)

NURS 3842H. Honors Foundations of Scientific Evidence in Nursing Practice. 2 Hours.
Introduction to the use of scientific evidence in nursing through a comparative analysis of selected studies. Theoretical, methodological, and analytical approaches are explored. Students acquire basic competencies in evaluating, interpreting, and applying evidence-based knowledge for use in professional nursing practice. This is a Level I course. (Typically offered: Fall and Spring)
This course is equivalent to NURS 3842.

\section*{NURS 4003. Transition to Professional Nursing Practice. 3 Hours.}

This course supports educational mobility building on a core of common knowledge and skill from previous nursing education. The course emphasizes a transition to the professional nursing roles and competencies associated with professional nursing practice. Prerequisite: Admission to an online undergraduate BSN professional program, or instructor or departmental consent. (Typically offered: Fall and Spring)
NURS 4013. Informatics for the Professional Nurse. 3 Hours.
This course focuses on how information technology is used in the health care system. The course describes how nursing informatics is currently being used by healthcare professionals, and speculates about future applications. Prerequisite: Admission to an online undergraduate BSN professional program, or instructor or departmental consent. (Typically offered: Fall and Spring)
NURS 4023. Health Promotion Across the Lifespan. 3 Hours.
This course introduces theories and concepts of teaching and learning, health and wellness, and health behavior in the context of health promotion in nursing. The complex relationships that exist among culture, family, community, and health are explored. Students apply evidence-based strategies to assess, implement, and evaluate health promotion interventions for individuals, families, communities, and populations. Prerequisite: NURS 4003, NURS 4013, NURS 4843 and admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

\section*{NURS 4063. Population and Community Health Nursing. 3 Hours.}

This course introduces general principles of population and community health nursing to provide a theoretical base for the care of families, aggregates, communities, and populations. Students apply the concepts of disease prevention and assessment to plan, implement, and evaluate interventions to address diverse health care issues across the lifespan. Prerequisite: NURS 4003, NURS 4843, NURS 4013, (ESRM 2403 or STAT 2303) and admission to an online undergraduate BSN professional program or permission by the instructor or department head and (NURS 3332, NURS 4102, NURS 4124, and NURS 4143 for LNBN students only). (Typically offered: Fall, Spring and Summer)
NURS 4073. Population and Community Health Practicum. 3 Hours. Practicum basis for applying knowledge from public health and nursing theory. Learners utilize evidence-based strategies for disease prevention and health promotion with individuals, families, and populations in a variety of community health settings. Prerequisite: NURS 4843, NURS 4013, NURS 3332, NURS 4102, NURS 4124, and NURS 4143 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. Pre- or Corequisite: NURS 4063. (Typically offered: Fall, Spring and Summer)

\section*{NURS 4092. Professional Role Practicum. 2 Hours.}

This clinical practicum provides the licensed nursing student with an opportunity to synthesize and apply knowledge of concepts developed throughout the nursing program. Evidence based practice will guide development of a quality improvement project in an area of student's interest. The course provides an opportunity to collaborate with a mentor/preceptor and reflect professional goals. Requires a total of 75 clinical hours. Prerequisite: NURS 4701 and admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 4102. Adult Health II for Nurses. 2 Hours.
Focuses on the adult population experiencing chronic problems in the health-illness continuum. Utilizing the nursing process, nursing and medical treatment of selected conditions will be emphasized across transitional care settings. Prerequisite:
NURS 3332, NURS 3302, NURS 4313, and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 4112. Nursing Concepts: Teaching and Health Promotion. 2 Hours. The course focuses on teaching/learning and the professional nurse's role in health promotion and disease prevention. A variety of health education and health promotion strategies are presented and evaluated. This is a Level I course. Prerequisite: Admission to the nursing program and completion of NURS 3422 and NURS 3424. (Typically offered: Fall and Spring)

NURS 4124. Child and Family Nursing. 4 Hours.
Students explore theory and evidence-based knowledge regarding holistic nursing care of children and families. Principles of health promotion and health education are utilized throughout the course. Prerequisite: NURS 4313, NURS 3111, and NURS 4323 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall and Spring)

NURS 4143. Child and Family Practicum. 3 Hours.
Clinical practicum experience for application of evidence-based knowledge and skills in the nursing care of children and families. Pre- or Corequisite: NURS 4124. Prerequisite: NURS 3111, NURS 4323, NURS 4313, and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall and Spring)

NURS 4154. Nursing Concepts: Children and Family. 4 Hours.
This course provides theory and research-based knowledge regarding holistic nursing care of children and families. Principles of health promotion and health education for expanding families are integral to this course. This is a Level II course. Corequisite: NURS 4164. Pre- or Corequisite: NURS 4112. (Typically offered: Fall and Spring)

NURS 4164. Professional Role Implementation IV: Teacher. 4 Hours.
Clinical and laboratory experience for application of research-based knowledge and skills in the nursing care of children and families. Emphasis is on teaching role of the nurse. This is a Level II course. Pre- or Corequisite: NURS 4154. Prerequisite: Completion of Level I courses. (Typically offered: Fall and Spring)

NURS 4203. Leadership for Professional Nurses. 3 Hours.
This course introduces theories and principles of management and leadership and the professional nurse's role within the health care system. Social issues, economic policy, and regulatory requirements are used to explore healthcare delivery systems and access, quality improvement, and patient safety. This course includes strategies for monitoring delivery of care, outcomes, and evaluating program effectiveness. Prerequisite: NURS 3111, NURS 3772, NURS 3782, NURS 4003, NURS 4323 and admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

\section*{NURS 4212. Leadership Practicum. 2 Hours.}

Students will apply the theoretical principles learned in NURS 4203 to the delivery of healthcare. Prerequisite: NURS 3772, NURS 3782, NURS 4323, NURS 3111 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. Pre- or Corequisite: NURS 4203. (Typically offered: Fall, Spring and Summer)

\section*{NURS 4242. Leadership in Nursing. 2 Hours.}

Introduces principles of leadership and the professional nurse's roles in the health care system. Considers the perspectives of management, organization, and change theory. Includes strategies for monitoring delivery of care, outcomes and evaluating program effectiveness. This is a Level II course. (Typically offered: Fall and Spring)

NURS 4252. Professional Role Implementation V: Manager. 2 Hours Students will apply the theoretical principles learned in NURS 4242 and NURS 4262 to the delivery of care to adults with chronic conditions across transitions of care settings. The manager will be emphasized. This is a Level II course. Prerequisite: Completion of Level I courses. Pre- or Corequisite: NURS 4242 and NURS 4262. (Typically offered: Fall and Spring

NURS 4262. Nursing Concepts: Adult Health and IIIness II. 2 Hours.
Focuses on the adult population experiencing chronic problems in the health-illness continuum. Utilizing the nursing process, nursing and medical treatment of selected conditions will be emphasized across transitional care settings. This is a Level II course. Prerequisite: Level I courses. (Typically offered: Fall and Spring)

NURS 4262H. Honors Nursing Concepts: Adult Health and IIIness II. 2 Hours. Focuses on the adult population experiencing chronic problems in the health-illness continuum. Utilizing the nursing process, nursing and medical treatment of selected conditions will be emphasized across transitional care settings. This is a Level II course. Prerequisite: Level I courses. (Typically offered: Fall and Spring) This course is equivalent to NURS 4262.

\section*{NURS 4313. Pathophysiology in Nursing. 3 Hours.}

The course focuses on the study of the underlying concepts of physiological functioning and the body's adaptive and compensatory mechanisms within a systems framework. Learners examine aspects of disease processes including etiology, pathogenesis, and clinical manifestations, as it applies to current nursing practice with diverse clients across the lifespan. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

\section*{NURS 4323. Health Assessment and Clinical Reasoning. 3 Hours.}

This 3-credit theory course focuses on increasing knowledge of health assessment skills. Emphasis is placed on strengthening clinical reasoning skills through identifying normal findings, interpreting abnormal findings, and applying principles of evidence-based practice to the health assessment process. The role of documentation of assessment findings to third-party reimbursement is also explored. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 4442. Nursing Concepts: Critical Care. 2 Hours.
Focuses on the adult population experiencing multiple or critical illnesses or conditions necessitating admission to a critical care unit. The course emphasizes both nursing and medical treatment of selected conditions. This is a Level II course. Corequisite: NURS 4452. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall and Spring)

NURS 4452. Professional Role Implementation VI: Role Synthesis. 2 Hours. Clinical learning is focused on further developing and refining the knowledge, skills, and attitudes necessary to manage the care of an acutely ill or complex patient and/ or family within the context of an inter-professional team. This is a Level II course. Prerequisite or Corequisite: NURS 4442. Prerequisite: Completion of Level I and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall and Spring)

NURS 4503. Introduction to Health Care Policy. 3 Hours.
This course provides an overview of health care policy orienting students to the political and social processes impacting the current health care environment. The course provides a basic framework for understanding the role of nursing in advocacy, leadership, economics and ethics associated with influencing health care policy. Recognizing the financing of health care and the impact on quality through policy changes will be discussed. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

NURS 4542. Critical Care Nursing. 2 Hours.
Focuses on the adult population experiencing multiple or critical illnesses or conditions necessitating admission to a critical care unit. The course emphasizes both nursing and medical treatment of selected conditions. Prerequisite:
NURS 3111, NURS 3332, NURS 4102, NURS 4323, NURS 4124, NURS 4143 , NURS 3302, NURS 4313, and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. (Typically offered: Fall, Spring and Summer)

\section*{NURS 4552. Critical Care Practicum. 2 Hours.}

Clinical learning is focused on further developing and refining the knowledge, skills, and attitudes necessary to manage the care of an acutely ill or complex patient and/ or family within the context of an inter-professional team. Prerequisite: NURS 3111, NURS 3332, NURS 4102, NURS 4323, NURS 4124, NURS 4143, NURS 3302, and NURS 4313 and admission to the Online Undergraduate BSN Professional Program or permission by the instructor or department head. Pre- or Corequisite: NURS 4542. (Typically offered: Fall, Spring and Summer)

\section*{NURS 4603. Nursing Concepts: Community. 3 Hours.}

The course focuses on theories and concepts in community health nursing. Health resources are explored in a variety of settings. This is a Level II course. Corequisite: NURS 4613. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall, Spring and Summer)

\section*{NURS 4603H. Honors Nursing Concepts: Community. 3 Hours.}

The course focuses on theories and concepts in community health nursing. Health resources are explored in a variety of settings. This is a Level II course. Corequisite: NURS 4613. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall, Spring and Summer)
This course is equivalent to NURS 4603.
NURS 4613. Professional Role Implementation VII: Role Synthesis. 3 Hours. Application of community health concepts and the nursing process to promote community health and to restore health in a variety of settings. This is a Level II course. Pre- or Corequisite: NURS 4603. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, NURS 4262. (Typically offered: Fall and Spring)

\section*{NURS 4701. Professional Nursing Synthesis. 1 Hour.}

The course emphasizes reflection, integration, and synthesis of concepts from previous courses. Course enrollment occurs in the last semester of the program. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head, and all university core and program prerequisites. (Typically offered: Fall, Spring and Summer)

NURS 4712. Seminar in Nursing. 2 Hours.
Focuses on integrating the nursing caregiver, teacher and manager roles. Prepares students to analyze practice issues, trends and future demands. Explores the roles of baccalaureate prepared professional nurses and facilitates students to incorporate those roles as they enter professional practice. Must be taken in the final semester of the Professional Program of Study. This is a Level II course. Corequisite: NURS 4722. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, and NURS 4262. (Typically offered: Fall and Spring)

NURS 4722. Professional Role Implementation VIII: Role Synthesis. 2 Hours. Clinical immersion experience that approximates the role of a beginning BSN nurse generalist. Corequisite: NURS 4712. Prerequisite: Completion of Level I courses and NURS 4112, NURS 4154, NURS 4164, NURS 4242, NURS 4252, NURS 4262. (Typically offered: Fall and Spring)

NURS 481V. Special Topics in Nursing. 1-6 Hour.
This course is the study of a special topic(s) in nursing. Content varies. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

NURS 4843. Scientific Foundation for Professional Nursing Practice. 3 Hours. This course introduces the research process through a comparative analysis of selected studies exemplifying various theoretical, methodological, and analytical approaches. Students acquire the basic competencies to critically read, evaluate and interpret nursing research studies for use in professional nursing practice. Prerequisite: Admission to an online undergraduate BSN professional program or permission by the instructor or department head. (Typically offered: Fall and Spring)

NURS 491V. Independent Study in Nursing. 1-6 Hour.
A selected learning experience in nursing to enhance knowledge and/or practice of the profession. Objectives and experiences are designed on an individual basis with a faculty adviser. May be taken with any 3500-level nursing course or above. (Typically offered: Fall, Spring and Summer)

\section*{NURS 491VH. Honors Independent Study in Nursing. 1-6 Hour.}

A selected learning experience in nursing to enhance knowledge and/or practice of the profession. Objectives and experiences are designed on an individual basis with a faculty adviser. May be taken with any 3500-level nursing course or above. (Typically offered: Irregular)
This course is equivalent to NURS 491V.

\section*{NURS 498VH. Nursing Honors Thesis/Project. 1-3 Hour.}

Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one to complete the honors thesis/project. Prerequisite: Honors candidacy, Nursing Bachelor of Science (NURSBS) major, and NURS 3901H or NURS 3842H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{NURS 5033. Scientific Foundations and Role Development in Advanced Practice Nursing. 3 Hours.}

Examines development of the advanced practice nursing role and evolution of the Doctor of Nursing Practice (DNP). Concepts include scientific foundations of practice, role development, interdisciplinary collaborative strategies, advanced scope of practice, patient advocacy, and legal/ethical principles in the advanced practice role. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Fall)

NURS 5043. Concepts of Health Promotion Within Diverse Populations. 3 Hours.

Provides a theoretical base for health promotion, risk reduction and disease prevention at the individual, family and community levels. A cross-disciplinary approach to achieve or preserve health is identified. Focuses on holistic plans and interventions that address the behavioral and social factors that contribute to morbidity and mortality in diverse populations. Provides opportunity to develop, implement, and evaluate health promotion interventions for selected clients. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Spring)

NURS 5053. Evidence-Based Practice and Innovation in Nursing. 3 Hours. Examines models and strategies for leadership in evidence-based practice and innovation, outcomes management, and translational scholarship. The emphasis of this course is on problem identification, information retrieval, critical appraisal, and synthesis of a body of evidence. It provides the student with the foundation for MSN and DNP evidence-based projects. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Spring)

\section*{NURS 5063. Health Care Policy. 3 Hours.}

Provides knowledge and understanding needed to participate in policy development analysis and implementation. Provides an overview of the political process, health care policy, advocacy, leadership roles, legislative and regulatory issues, health care financing, and evaluating outcomes. Access, cost, and quality of health care are major foci in this course. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Fall)

NURS 5073. Curriculum Design and Development in Nursing Education. 3 Hours.
This course provides the essential elements that define and operationalize the process of curriculum design and development. Students will examine curriculum theories, models, and concepts from the perspective of nursing education. They will analyze factors that influence program and curriculum development. Historical and philosophical foundations of nursing practice and educational principles are examined. The application and synthesis of curriculum theory and their application to nursing is emphasized. The role of the educator in the dynamic relationship between the practice setting, research, and curriculum is examined. Students will participate in the design of curriculum which reflects professional nursing practice, standards, theory, and research. Prerequisite: Admission to the Graduate Program or departmental consent. Completion of all general and research core classes or approval of the MSN Education Program Coordinator. (Typically offered: Fall and Spring)
NURS 5083. Methods of Assessment and Evaluation in Nursing Education. 3 Hours.
This course is one of four offered in the nursing education concentration in preparation for the role of educator in academic and clinical settings. Students explore theories, models, and evidence for best practice in assessing learning - including constructing exam items and creating tools for assessing writing assignments. Students discuss grading and other concepts related to assessment and evaluation as it relates to nursing education. Pre- or Corequisite: Completion of NURS 5073 or NURS 5093. Prerequisite: Admission to the Masters of Science in Nursing or the Doctor of Nursing Practice Program. (Typically offered: Summer)

NURS 5093. Instructional Design and Delivery in Nursing Education. 3 Hours.
This course is one of four offered in the nursing education concentration in preparation for the role of educator in academic and clinical settings. Students explore teaching and learning theories and other evidence to guide practice in the advanced role of the educator. Students gain competencies in the knowledge and skills necessary for delivering evidence-based teaching and learning strategies in a variety of learning environments. Prerequisite: Admission to the Graduate Program or departmental consent. (Typically offered: Spring)
NURS 5101. Advanced Health Assessment and Diagnostic Reasoning. 1 Hour. Applies health assessment, physical examination techniques, clinical decision making, and diagnostic reasoning to formulate a culturally-sensitive, individualized plan of care, which includes health promotion and disease prevention. Corequisite: NURS 5112. (Typically offered: Fall)

NURS 5112. Advanced Health Assessment and Diagnostic Reasoning Clinical

\section*{Practicum. 2 Hours.}

Focus is on the application of clinical decision making, diagnostic reasoning, and advanced physical examination techniques to develop differential diagnoses, problem list, and a plan of care for individual clients. Corequisite: NURS 5101. (Typically offered: Fall)

\section*{NURS 5123. Advanced Pharmacology. 3 Hours.}

Provides advanced concepts and application of pharmacology for broad categories of agents used in disease management. Establishes the relationship between pharmacologic agents and physiologic/pathologic responses. It assists students with the development of knowledge and skills to prescribe and manage a client's health in a safe, high quality, and cost-effective manner. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Spring)

\section*{NURS 5143. Advanced Pathophysiology. 3 Hours.}

Provides a comprehensive understanding of normal physiologic and pathologic mechanisms of disease that serves as a foundation for clinical assessment, decision making, and management of individuals. Includes mechanisms of disease, genetic susceptibility, and immune responses in selected disorders. This course includes concepts of pathophysiology across the lifespan. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Fall)

NURS 5332. Common Problems in Acute Care in Adult and Gerontology Populations Clinical Practicum. 2 Hours.
Focuses on the management of adult-gerontology patients with common acute illnesses. Emphasizes the application of principles of pathologic mechanisms of disease, history taking, physical examination, and clinical decision making. Corequisite: NURS 5434. Prerequisite: NURS 5101 and NURS 5112. (Typically offered: Spring)

\section*{NURS 5343. Specialty Development I. 3 Hours.}

This course will include two foci. There will be readings focused on current topics in a specialty area. A focused field experience will allow student to integrate knowledge and skills in a specialty area of nursing in preparation for the nurse educator role. (Typically offered: Spring)

NURS 5434. Common Problems in Acute Care in Adult and Gerontology Populations. 4 Hours.
Examine principles of pathologic mechanisms of disease, refine skills for history taking, physical examination, and clinical decision making for adult and geriatric individuals with common acute illnesses. Corequisite: NURS 5443. Prerequisite: NURS 5101 and NURS 5112. (Typically offered: Spring)

\section*{NURS 5443. Chronic Health Problems in Adult and Gerontology Populations. 3} Hours.
Explores evidence-based models for the management of selected chronic conditions, focusing on assessment and treatment of individuals and families. Utilizes advanced theories, concepts, knowledge, and skill in the care of diverse adult and geriatric populations with complex chronic health problems. Corequisite: NURS 5454. Prerequisite: Completion of NURS 5434 and NURS 5332. (Typically offered: Fall)

\section*{NURS 5454. Chronic Health Problems in Adult and Gerontology Populations} Clinical Practicum. 4 Hours.
Focuses on the management of adult-gerontology populations with complex, chronic health problems. Emphasis is on the application of theoretical concepts, assessment skills, clinical decision making, and evidence-based standards to formulate diagnoses, clinical impressions, treatment, and evaluation plans in the acute or out-patient setting. Corequisite: NURS 5443. Prerequisite: NURS 5434 and NURS 5332. (Typically offered: Fall)
NURS 5463. Acute and Critical IlIness in Adult and Gerontology Populations. 3 Hours.
Provides an in-depth knowledge of management of acutely and critically ill adults. Emphasis is on the use of evidence-based knowledge to formulate diagnoses, treatment, evaluation plans, and referral for adults who have complex acute or critical health problems, or are at high risk for developing complications. Corequisite: NURS 5475. Prerequisite: NURS 5443 and NURS 5454. (Typically offered: Spring)
NURS 5475. Acute and Critical IIIness in Adult and Gerontology Populations Clinical Practicum. 5 Hours.
Experiences allow the student to apply safe, scientifically sound, cost effective, legal and ethical management strategies to the care of adults with complex acute and critical illness. Emphasis is on the development of advanced clinical skills in acute and critical care settings. Corequisite: NURS 5463. Prerequisite: NURS 5443 and NURS 5454. (Typically offered: Spring)
NURS 5483. Common Problems in Primary Care. 3 Hours.
Examines principles of pathological mechanisms of disease, refines knowledge for thorough history taking, physical examination, and clinical decision-making for men, women, and families with common illnesses treated in primary care. Includes anticipatory guidance, health promotion, disease prevention, and reproductive health. Corequisite: NURS 5495. Prerequisite: NURS 5101 and NURS 5112. (Typically offered: Spring)

NURS 5495. Common Problems in Primary Care Clinical Practicum. 5 Hours. Clinical component to NURS 5483 Common Problems Primary Care. Refines skills for thorough history taking, physical examination, and clinical decision-making for men, women, and families with common illnesses treated in primary care as well as health promotion, disease prevention, and reproductive health needs. Corequisite: NURS 5483. Prerequisite: NURS 5101 and NURS 5112. (Typically offered: Spring)

NURS 5523. Healthcare Informatics. 3 Hours.
Prepares graduate students to serve as leaders in the utilization of information systems and technology to support and improve education, patient care, and healthcare systems. Assists students in evaluating and integrating qualified technologies into various practice settings. Students will explore current and emerging trends in Healthcare Informatics and their legal, ethical, and political implications. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Summer)

\section*{NURS 5543. Primary Care of Children. 3 Hours.}

Focuses on evidence-based models for the management of children from diverse cultures with common conditions in primary care. Includes anticipatory guidance, health promotion, and disease prevention. Emphasis on application of theoretical concepts, assessment skills, clinical decision-making, and evidence-based standards to formulate differential diagnoses, clinical impressions, treatment, and evaluation plans in primary care. Corequisite: NURS 5683. Prerequisite: NURS 5873 and NURS 5884. (Typically offered: Spring)

\section*{NURS 5683. Primary Care of Children Clinical Practicum. 3 Hours.}

Focuses on the management of children in the clinical setting with emphasis on holistic assessment and treatment of this population and their families. Students will engage in the assessment, diagnosis and treatment of conditions common to primary practice in pediatric clinics. This course will consist of 135 contact hours. Corequisite: NURS 5543. Prerequisite: NURS 5873 and NURS 5884. (Typically offered: Spring)

\section*{NURS 5703. Nurse Educator Scholarly Project. 3 Hours.}

The Nurse Educator Scholarly Project identifies and addresses practice issues in nursing education and includes a thorough search, analysis, synthesis and a plan for dissemination of the best available evidence. Students build upon knowledge and skills from previous coursework to complete the project over one or two semesters. Prerequisite: NURS 5093 and NURS 5083. Pre- or Corequisite: NURS 5343.
(Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{NURS 579V. Independent Study. 1-3 Hour}

Independent study designed by student with faculty advisor. May be completed as alternative to thesis. (Typically offered: Fall, Spring and Summer)

\section*{NURS 5873. Complex Problems in Primary Care. 3 Hours.}

Focuses on application of health promotion and chronic disease management in complex adult patients. Students will utilize evidence-based approaches to health promotion, assessment, differential diagnosis and disease management. Emphasizes clinical decision making, chronic care models, coordination of care, poly-drug therapy and information systems. Corequisite: NURS 5884. Prerequisite: NURS 5483 and NURS 5495. (Typically offered: Fall)

NURS 5884. Complex Problems in Primary Care Clinical Practicum. 4 Hours. Clinical component to NURS 5873 Complex Problems in Primary Care. Offers the student an opportunity to exercise critical judgment and implement theoretical knowledge in the management of care of adults experiencing complex health problems. Corequisite: NURS 5873. Prerequisite: NURS 5495 and NURS 5483. (Typically offered: Fall)

NURS 598V. Nursing Special Topics. 1-6 Hour.
Special Topics course. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

NURS 600V. Master's Thesis. 1-3 Hour.
Student research to fulfill degree requirement for the MSN. Prerequisite: NURS 5053. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{NURS 6123. Evaluation Methods and Translational Research for Evidence-} based Practice. 3 Hours.
The translation of evidence into practice, including theoretical and practical challenges, is analyzed through the use of case studies and proposals. Uses methods of inquiry for systematic appraisal of nursing practice or healthcare programs to identify practice outcomes and create an environment to support and sustain changes. Prerequisite: NURS 6343 or by permission of the instructor. (Typically offered: Spring)

\section*{NURS 6224. DNP Clinical Practicum I. 4 Hours.}

Provides an opportunity to synthesize advanced knowledge and role behaviors within a specialty concentration. Designed to apply nursing theory, translational research, epidemiologic principles, ethical/legal principles, outcome evaluations, healthcare systems thinking, and economics into a specialized clinical practice role and setting. Depending upon specialty and experience, may require travel to campus. Prerequisite: NURS 5443, NURS 5454, NURS 5463, and NURS 5475. (Typically offered: Summer)

\section*{NURS 6233. Healthcare Economics and Finance. 3 Hours.}

This course provides economic, financial, and business knowledge and skills required for a leadership role in financial planning and decision making within healthcare delivery systems. DNP educated nurses in leadership roles must understand how budgeting, healthcare insurance/reimbursement, and managed care influence the clinical decision-making process. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Summer)

NURS 6244. DNP Clinical Practicum II. 4 Hours.
Provides an opportunity to synthesize advanced knowledge and role behaviors within a specialty concentration. Designed to apply nursing theory, translational research, epidemiologic principles, ethical/legal principles, outcome evaluations, healthcare systems thinking, and economics into a specialized clinical practice role and setting. Depending upon specialty and experience, may require travel to campus. Corequisite: NURS 7122. Prerequisite: NURS 6224. (Typically offered: Fall)

NURS 6263. Organization Management and Systems Leadership. 3 Hours. Facilitates understanding of how to lead, advocate, and manage innovative responses to organizational needs and challenges. Emphasizes development and evaluation of care delivery models that meet the needs of targeted patient populations by enhancing accountability for effective and efficient healthcare, quality improvement, and patient safety. Prerequisite: Admission to the graduate program or by permission of the instructor. (Typically offered: Summer)

NURS 628V. DNP Clinical Practicum III. 1-8 Hour.
Allows for the continuation of specialty role development and a more refined and advanced approach to care delivery, systems thinking, and leadership. Allows for the total number of practice hours required for certification and/or degree. (Typically offered: Spring) May be repeated for up to 8 hours of degree credit.

NURS 6343. Analytic Methods and Epidemiology for Health Care. 3 Hours. This course will examine the role of epidemiology and statistics in advanced nursing practice. The student will learn how the concepts of epidemiology are used to measure and describe the health of individuals and populations and apply statistical concepts and analytical methods to data encountered in practice. Major topics to be covered include sources of data, study designs, analytical strategies and interpretation of data related to disease causality, risk, and prevalence. Prerequisite: ESRM 5393. (Typically offered: Fall, Spring and Summer)

NURS 6663. Emergency Preparedness in Rural United States. 3 Hours.
Emergency preparedness in Rural United States is an elective course for graduate nursing students. This course will prepare them for the role of nurse practitioner in rural clinical settings during times when National Incident Management Systems are necessary to manage national disasters, tragedies, or contagion in rural areas of the US. (Typically offered: Fall and Spring)

NURS 6862. Rural Primary Care in Arkansas. 2 Hours.
This is a rural health course elective for graduate nursing students. The purpose of this course is to prepare them for the role of nurse practitioner educator in the academic setting by providing additional knowledge and exposure to topics and diseases seen in rural primary care in Arkansas. (Typically offered: Fall and Spring)

\section*{NURS 6882. Opioid Use in Rural Arkansas. 2 Hours.}

This course prepares graduate nursing students for the nurse practitioner role in rural settings by providing knowledge, exposure to risk factors, treatment strategies for opioid abuse and misuse, policies and regulations related to prescribing opioids, and gaps in community responses addressing this epidemic in rural primary care in Arkansas. (Typically offered: Fall and Spring)
NURS 6993. Advanced Practice Registered Nursing (APRN) Residency: A Service-Learning Course. 3 Hours.
The service-learning APRN residency provides students skills to identify potential rural and underserved employment environments, prepare for interviews, and complete pre-employment documents necessary to evolve from graduate DNP students to fully employable, practice-ready APRNs for communities in Arkansas and surrounding states through reflective journaling, discussions, and completion of activities. Corequisite: NURS 628 V or special permission of instructor teaching the course. Prerequisite: NURS 6244, admission to the University of Arkansas Graduate School, and the Eleanor Mann School of Nursing Graduate Program or permission of faculty teaching the course. (Typically offered: Spring)

\section*{NURS 7122. DNP Project Implementation I. 2 Hours.}

Provides necessary support and elements for students to begin execution of the DNP Project in collaboration with the sponsoring site. (Typically offered: Fall)

\section*{NURS 7142. DNP Project Implementation II. 2 Hours.}

Provides an avenue for students to complete and disseminate the DNP project. Allows students the opportunity to synthesize and demonstrate the ability to employ effective communication and collaboration skills, leadership roles, influence healthcare quality and safety, evaluate practice, and successfully negotiate change in healthcare delivery for individuals, families, populations, or systems. Prerequisite: NURS 7122. (Typically offered: Spring)

\section*{Nutrition (NUTR)}

\section*{Courses}

NUTR 1201. Introduction to the Dietetic Profession. 1 Hour.
Introduction to profession of dietetics and nutrition including history, scope and future of professionals with emphasis on academic preparation, internships, acquisition of professional credentials, career laddering and career opportunities. Guest speakers will supplement lectures and assignments. Prerequisite: HNAD or FNAH majors only or by department consent. (Typically offered: Fall and Spring)

NUTR 1213. Fundamentals of Nutrition. 3 Hours.
The functions of food, body processes, optimum diets in relation to health and physical fitness. (Typically offered: Fall and Spring)

NUTR 1213H. Honors Fundamentals of Nutrition. 3 Hours.
The functions of food, body processes, optimum diets in relation to health and physical fitness. (Typically offered: Fall and Spring)
This course is equivalent to NUTR 1213.
NUTR 2111L. Principles of Foods Laboratory. 1 Hour.
Laboratory exercises and practice applicable of Principles of Foods. Lab 3 hours. Corequisite: NUTR 2113. (Typically offered: Fall and Spring)

NUTR 2113. Principles of Foods. 3 Hours.
Physical and chemical characteristics of foods, organized by food science and nutrition, protein foods, phytochemicals, complex and refined carbohydrates, and fats. Emphasis on food preparation and storage methods and effect on foods. Investigation and practice of food preparation basics, cooking and baking techniques, knife skills, food safety, and sensory evaluation of food. Corequisite: NUTR 2111L. Prerequisite: NUTR 1213, a C or higher in HOSP 2611, (CHEM 1073, or CHEM 1103, or CHEM 1203), one of the following programs, minors or concentrations: (HNADBS, FNAHBS, HESCBS, NUTR-M, or CATEBS-FCSE) and students must also have a current ServSafe Manager's Certification. (Typically offered: Fall and Spring)

\section*{NUTR 2203. Sports Nutrition. 3 Hours.}

The integration of concepts from nutrition and exercise physiology into an applied multidisciplinary study of how food, beverages and dietary supplements influence physical performance. Prerequisite: NUTR 1213. (Typically offered: Summer)

\section*{NUTR 3101L. Culinary Nutrition Lab. 1 Hour.}

Students will explore ways to apply evidence based nutrition research to culinary application. It addresses the fundamental culinary skills and knowledge required to prepare meals that impact the nutritional and sensory appeal of food. Corequisite: NUTR 3103. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Fall)

NUTR 3101M. Honors Culinary Nutrition Lab. 1 Hour.
Students will explore ways to apply evidence based nutrition research to culinary application. It addresses the fundamental culinary skills and knowledge required to prepare meals that impact the nutritional and sensory appeal of food. Corequisite: NUTR 3103H. Prerequisite: NUTR 2113, NUTR 2111L and honors standing. (Typically offered: Fall)
This course is equivalent to NUTR 3101L.
NUTR 3103. Culinary Nutrition. 3 Hours.
This course is grounded in a food first approach to health and wellness with an emphasis on disease prevention. Students will study the physical and chemical characteristics of foods that increase nutritional value and will include exploration of the culinary nutrition modification process and application of these concepts to planning nutritionally balanced meals. Corequisite: NUTR 3101L. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Fall)

\section*{NUTR 3103H. Honors Culinary Nutrition. 3 Hours.}

This course is grounded in a food first approach to health and wellness with an emphasis on disease prevention. Students will study the physical and chemical characteristics of foods that increase nutritional value and will include exploration of the culinary nutrition modification process and application of these concepts to planning nutritionally balanced meals. Corequisite: NUTR 3101M. Prerequisite: NUTR 2113, NUTR 2111L and honors standing. (Typically offered: Fall) This course is equivalent to NUTR 3103.

\section*{NUTR 3203. Human Nutrition. 3 Hours.}

Fundamental human nutrition; nutritive value of foods and general functions of nutrients based on concepts derived from inorganic and organic chemistry. Examples relating nutrition to disease used as illustrations to deepen understanding of normal nutrition. Lecture 3 hours per week. Corequisite: CHEM 2613 and CHEM 2611L or CHEM 3603 and CHEM 3601L. Prerequisite: NUTR 1213. (Typically offered: Fall)

\section*{NUTR 3213. Nutrition Education and Counseling. 3 Hours.}

Introduction to development of communication skills related to educational theory and techniques, development of educational materials, interpersonal communication skills, group dynamics, public speaking, and interviewing techniques. Includes discussion of counseling theory and methods, and how education and counseling are intertwined for nutrition professionals. Includes development of skills in nutrition counseling. Prerequisite: NUTR 1213, HNAD or FNAH majors only, and Junior or Senior standing. (Typically offered: Fall)

NUTR 3213H. Honors Nutrition Education and Counseling. 3 Hours.
Introduction to development of communication skills related to educational theory and techniques, development of educational materials, interpersonal communication skills, group dynamics, public speaking, and interviewing techniques. Includes discussion of counseling theory and methods, and how education and counseling are intertwined for nutrition professionals. Includes development of skills in nutrition counseling. Prerequisite: NUTR 1213, HNAD or FNAH majors only, Junior or Senior standing, and honors standing. (Typically offered: Fall)
This course is equivalent to NUTR 3213.

\section*{NUTR 3303. Nutrition Assessment. 3 Hours.}

Principles of nutritional assessment and methodology including anthropometric, biochemical, clinical, and dietary evaluation. Emphasis placed on Nutrition Focused Physical Assessment, the interpretation of indices for all age groups in health and disease for both individuals and groups, and the application of nutrition assessment data in the nutrition care process. Prerequisite: NUTR 3203, junior standing and HNAD/FNAH majors only. (Typically offered: Spring)

\section*{NUTR 3603. Quantity Foods. 3 Hours.}

This course focuses on menu planning for a variety of food service organizations, with consideration of age, special needs, diet type, cultural and ethical parameters. Students will design flavorful and appealing menus that meet current nutrition recommendations, guidelines and budgetary constraints. They will learn recipe standardization, quantity production, and overall quality control. Prerequisite: NUTR 1213, HOSP 2603, junior standing and Human Nutrition and Dietetics Bachelor of Science (HNADBS) or Food, Nutrition and Health Bachelor of Science (FNAHBS) majors only. (Typically offered: Spring)
NUTR 4001. Nutrition Seminar. 1 Hour.
Presentation and discussion of selected nutrition topics of current interest. Prerequisite: Senior standing and HNAD or FNAH majors only. (Typically offered: Spring) May be repeated for up to 2 hours of degree credit.

\section*{NUTR 4103. Research Methods in Nutrition. 3 Hours.}

This course will cover applications of experimental methods for investigations in nutrition research and cookery. Pre- or Corequisite: STAT 2303. Prerequisite: Major in either Human Nutrition and Dietetics (HNAD), or Food, Nutrition and Health (FNAH) and senior standing only. (Typically offered: Spring)

NUTR 4213. Advanced Nutrition I. 3 Hours.
This course will cover nutritional, physiological, and biochemical aspects of carbohydrate, protein, and lipid metabolism in humans and their implications in health and disease. Prerequisite: CHEM 3813 and NUTR 3203. (Typically offered: Fall)

\section*{NUTR 4223. Life Cycle Nutrition. 3 Hours.}

Study of normal nutrition emphasizing quantitative needs for nutrients as functions of biologic processes that vary during stages of the life cycle. Attention is given to preconception, pregnancy, childhood and older adults. Prerequisite: (HNAD majors and NUTR 3203) or (FNAH majors and junior standing). (Typically offered: Fall)

\section*{NUTR 4233. Advanced Nutrition II. 3 Hours.}

This course will cover nutritional, physiological, and biochemical aspects of vitamins and minerals in humans, their functions and roles in metabolism, and their implications in health and disease. Prerequisite: NUTR 4213. (Typically offered: Spring)

\section*{NUTR 4243. Community Nutrition. 3 Hours.}

Identifying, assessing, and developing solutions for nutritional problems encountered at the local, state, federal, and international levels. Lecture 3 hours per week. Prerequisite: NUTR 1213, junior standing, and Food, Nutrition and Health Bachelor of Science in Human Environmental Science (FNAHBS) or Human Nutrition and Dietetic Bachelor of Science in Human Environmental Science (HNADBS) majors or Nutrition minors only. (Typically offered: Spring)

NUTR 4263. Medical Nutrition Therapy I. 3 Hours.
Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Pre- or corequisite: NUTR 3213 and NUTR 4213. Prerequisite: BIOL 2213, BIOL 2211L, CHEM 3813 and NUTR 3303. (Typically offered: Fall)

NUTR 4273. Medical Nutrition Therapy II. 3 Hours.
Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Lecture 3 hours per week. Prerequisite: NUTR 4263. (Typically offered: Spring)

\section*{NUTR 4303. Cultural Perspectives on Foods. 3 Hours.}

Cultural competence is growing in importance as our population becomes more culturally diverse. This course covers cuisine and culture of various regions for the purpose of promoting respect and understanding for cultural diversity. Students will learn the history of foods, ingredients, flavor profiles, religious based food practices, etiquette, and customs. Corequisite: Junior or senior standing, and (Human Nutrition and Dietetics majors (HNADBS) or Food, Nutrition and Health majors (FNAHBS) or Hospitality Management (HOSPBS) majors). (Typically offered: Fall)

\section*{NUTR 4401L. Recipe Modification Lab. 1 Hour.}

Students will use existing research to identify foods with preventative and functional properties and apply that information to develop recipes for improved nutritional quality and disease management. They will gather data to modify and refine the products and create an educational tool to promote their products. Corequisite: NUTR 4403. (Typically offered: Spring)

\section*{NUTR 4403. Recipe Modification. 3 Hours.}

Students will use existing research to identify foods with preventative and functional properties and apply that information to develop recipes for improved nutritional quality and disease management. They will gather data to modify and refine the product and create an educational tool to promote their product. Corequisite: NUTR 4401L. Prerequisite: NUTR 2113 and NUTR 2111L. (Typically offered: Spring)

\section*{NUTR 5103. Nutrition Research Design and Methodology. 3 Hours.}

This course focuses on topics such as nutrition research terminology, nutritional epidemiology methods, and experimental scientific methods, technologies, and issues involved in understanding and conducting studies on the relationship between human diet and disease. Evaluation of experimental scientific methods include problem identification, research design, preparation and evaluation of experimental research results and outcomes including techniques in the areas of physiology and biochemistry as related to nutrition and metabolism. This course also helps students refine their scientific writing and presentation skills, and introduces hypothesis and proposal development in the nutritional sciences. Prerequisite: Graduate students only. (Typically offered: Spring)

\section*{NUTR 5113. Advanced Nutrition I. 3 Hours.}

This course will cover nutritional, physiological, and biochemical aspects of carbohydrate, protein, and lipid metabolism in humans and their implications in health and disease. Skills will be developed in critically assessing, interpreting, and presenting research literature on the roles of these macronutrients in human health, and in disease prevention and treatment. Prerequisite: CHEM 3813 and NUTR 3203. (Typically offered: Fall)

\section*{NUTR 5223. Nutrition During the Life Cycle. 3 Hours.}

Study of normal nutrition emphasizing quantitative needs for nutrients as functions of biologic processes that vary during stages of the life cycle. Nutritive needs during pregnancy and childhood are emphasized with some attention to nourishing aging and elderly adults. Factors that affect food choices and eating behavior are also considered. Lecture 3 hours per week. Prerequisite: Graduate standing and consent of instructor. (Typically offered: Fall)

NUTR 5233. Advanced Nutrition II. 3 Hours.
This course will cover nutritional, physiological, and biochemical aspects of vitamins and minerals in humans, their functions and roles in metabolism, and their implications in health and disease. Skills will be developed in critically assessing, interpreting, and presenting research literature on the role of these micronutrients in human health and on supplementation of micronutrients for disease prevention and treatment, including herbal supplements. Prerequisite: NUTR 5113. (Typically offered: Spring)

\section*{NUTR 5243. Community Nutrition. 3 Hours.}

Identifying, assessing, and developing solutions for nutritional problems encountered at the local, state, federal, and international levels. Lecture 3 hours per week. Graduate degree credit will not be given for both NUTR 4243 and NUTR 5243. (Typically offered: Spring)

\section*{NUTR 5263. Medical Nutrition Therapy I. 3 Hours.}

Principles of medical nutrition therapy with emphasis on Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders.
Lecture 3 hours per week. Prerequisite: Graduate standing and consent of instructor. (Typically offered: Fall)

\section*{NUTR 5273. Medical Nutrition Therapy II. 3 Hours.}

Principles of medical nutrition therapy with emphasis on the Nutrition Care Process, and the pathophysiology and current standards of practice for diseases and disorders. Lecture 3 hours per week. Prerequisite: NUTR 5263. (Typically offered: Spring)

\section*{Operations Management (OMGT) \\ Courses}

\section*{OMGT 4313. Law and Ethics. 3 Hours.}

Analysis of the fundamental legal principles applicable in protecting the rights and interests of individuals and organizations; court systems and litigation processes; constitutional law and legislation, formation and discharge of contracts; agency relationships; torts; labor laws; patents; trademarks; copyrights; unfair competition; ethics; professional relations. Not for graduate credit. (Typically offered: Fall, Spring and Summer)

\section*{OMGT 4323. Industrial Cost Analysis. 3 Hours.}

Use of accounting information for planning and control from a management viewpoint; principles of cost accounting and other aspects of production costs; budgeting, depreciation, taxes, distribution of profits, securities, sources of corporate capital, and interpretation of financial statements. Not for graduate credit. (Typically offered: Fall, Spring and Summer)

\section*{OMGT 4333. Applied Statistics. 3 Hours.}

Fundamentals of probability and distribution theory with applications in managerial decision making. Descriptive methods, probability distributions, sampling distributions and hypothesis testing are included. Not for graduate credit. (Typically offered: Fall, Spring and Summer)
OMGT 4853. Introduction to Decision Support Tools in Operations Management. 3 Hours.
This course covers decision support tools used in operations management including spreadsheet applications, introduction to database concepts, and presentation methods. The primary decision support tools covered are Microsoft Office products, specifically Excel, but also Word and PowerPoint. It is not a typical course on Microsoft Office products. This course covers how the Excel functions and capabilities are applied in operations management and in the other OMGT courses. The course introduces Excel Topics used in the OMGT curriculum, while reinforcing other Excel topics with review questions. Most of the course covers the Excel skills and techniques needed in the OMGT core courses, but covers some of the Excel concepts used in the elective courses. Pre- or Corequisite: OMGT 4333 or equivalent or departmental consent. Prerequisite: Program administered proficiency exam or departmental consent. (Typically offered: Fall, Spring and Summer)

OMGT 5003. Introduction to Operations Management. 3 Hours.
Provides an overview of the functional activities necessary for the creation/delivery of goods and services. Topics covered include: productivity; strategy in a global business environment; project management; quality management; location and layout strategies; human resources management; supply chain and inventory management; material requirements planning; JIT; maintenance and reliability; and other subjects relevant to the field. Required course. Pre- or Corequisite: OMGT 4853. Prerequisite: OMGT 4333, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. MSE or MSEM students may take the course with advisor consent. (Typically offered: Fall and Spring)
OMGT 5013. Supply Chain Management for Operations Managers. 3 Hours. Focuses on the development and application of decision models in supply chains with emphasis on supply chain performance, cost, and metrics; demand forecasting; aggregate planning; inventory management; supply chain design and distribution; transportation modeling and analysis; supply chain coordination; the role of information technology; and sourcing decisions. Spreadsheet tools and techniques will be used to analyze supply chain performance. Prerequisite: OMGT 4333, OMGT 4853 and admitted to OPMGMS, EMGTMS, ENGRME or OMPMGC Graduate Certificate Program, or departmental consent. (Typically offered: Fall, Spring and Summer)

\section*{OMGT 5113. Human Resource Management. 3 Hours.}

A review of Human Resources Management functions as they apply in today's business setting with specific emphasis on regulatory compliance, total rewards systems, recruitment, training, and employment practices. The course is designed both for HRM professionals and for line managers/professionals who need to understand the roles and responsibilities of HR as a business partner. Prerequisite: OMGT 4313, OMGT 5003 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Fall, Spring and Summer)

\section*{OMGT 5123. Finance for Operations Managers. 3 Hours.}

Examines the scope and environment of finance for operations managers. Topics include financial markets, interest rates, financial statements, cash flows, and performance evaluation. Valuation of financial assets, using time value of money; the meaning and measurement of risk/return; capital-budgeting, cost of capital, capital structure, dividend policy, and working capital management are also covered. Required course (may substitute OMGT 5463). Pre- or Corequisite: OMGT 5003. Prerequisite: OMGT 4323, OMGT 4853 and admitted to OPMGMS, EMGTMS, ENGRME, or OMPMGC Graduate Certificate Program, or departmental consent. (Typically offered: Fall, Spring and Summer)

\section*{OMGT 5133. Operations Management in the Service Sector. 3 Hours.}

Review of the role of the operations management in the service sector, e.g., health care systems, banking, municipal services, utilities, and postal service and others. Emphasizes the principles and methodologies applicable to the solution of problems within the service industries. Pre- or Corequisite: OMGT 5003. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

OMGT 5143. Strategic Issues in Human Resource Management. 3 Hours. Explores the concept of Strategic Human Resource Management with emphasis on effective partnering by various HR functions with all levels of management to support the large-scale, long-range goals of achieving success in the organization's chosen markets. Internal and external impacts on and of HR in all areas will be examined. Students will analyze case studies to build on basic concepts acquired in OMGT 5113. Prerequisite: OMGT 5003, OMGT 4313, OMGT 5113 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5253. Leadership Principles and Practices. 3 Hours.}

The course is designed to expose students to multiple approaches to leadership in a wide variety of settings. Leadership styles, the knowledge areas and competencies expected of today's leaders, the challenges leaders face, the historical and philosophical foundations of leadership, the relationships among leadership theory, leadership practice, and the moral-ethical aspects of leadership are among the topics covered in the course. A number of respected regional, national, and international leaders share "lessons learned" in their leadership journeys. Plus, a number of highly regarded leadership books and case studies on leadership are read and discussed. Students may not receive credit for INEG 4253 and INEG 5253/ OMGT 5253. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with INEG 5253.
OMGT 5303. Health Care Policies and Issues. 3 Hours.
Explores health care management strategies and policy development with emphasis on health insurance, Medicare, Medicaid and managed care, as well as employee health benefits. The roles of government and business in policy formulation are addressed, as are the problems of financing health care, legal and ethical considerations, current healthcare issues, and quality measures. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5373. Quality Management. 3 Hours.}

Introduces students to quality management concepts and their use in enhancing organizational performance and profitability. History of the quality movement, its broad application in key economic sectors, and philosophical perspectives of major quality leaders will be discussed. Focus is on continuous process improvement, using data and information to guide organizational decision-making. The Six Sigma approach and associated statistical tools, supporting process improvement, are also covered. Pre- or Corequisite: OMGT 5003. Prerequisite: OMGT 4333 and OMGT 4853, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5403. Industrial Safety and Health Administration. 3 Hours.}

Based on Federal Regulations for Occupational Safety and Health, the course examines current regulations, as well as their commonsense application. Covers various standards, such as those for material handling, personal protective equipment, toxic substances, and machine guarding. Uses case studies and real world scenarios to present topics and demonstrate their application. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5423. Operations Management \& Global Competition. 3 Hours.}

Studies of principles and cases in business/industrial administration in global competition. Survey of markets, technologies, multi-national corporations, cultures, and customs. Discussion of ethics, professionalism, difference valuing, human relations skills, and other topics relevant to global practice. Pre- or Corequisite: OMGT 5003. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Spring)

\section*{OMGT 5433. Cost Estimation Models. 3 Hours.}

Overview of cost estimation techniques and methodologies applied to manufacturing and service organizations. Accomplished through detailed analysis of the cost estimation development process and various cost estimation models. Topics include data collection and management, learning curves, activity based costing, detailed and parametric estimation models, and handling risk and uncertainty. Prerequisite: OMGT 4853 and OMGT 4333, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)
This course is cross-listed with INEG 5433.

\section*{OMGT 5443. Decision Models. 3 Hours.}

Focus on quantitative decision models for technical and managerial problems for private and public organizations. Topics include shareholder value, stakeholder value, Value-Focused Thinking, axioms of decision analysis, decision making challenges, decision traps, cognitive biases, decision processes, decision framing, influence diagrams, value hierarchy structuring, designing creative alternatives, single objective models, multiobjective additive value model, swing weights, sensitivity analysis, portfolio decision models with binary linear programming, probability elicitation, Bayes Theorem, decision trees, Monte Carlo simulation, expected value, dominance (deterministic and stochastic), tornado diagrams, value of information, risk preference, utility models, expected utility, and communicating analysis insights. Prerequisite: (OMGT 5003, OMGT 4333, and OMGT 4853) or INEG 2314, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)
This course is cross-listed with EMGT 5443, INEG 5443.
OMGT 5463. Economic Decision Making. 3 Hours.
Principles of economic analysis with emphasis upon discounted cash flow criteria for decision-making. Comparison of criteria such as rate of return, annual cost, and present worth for the evaluation of investment alternatives. Required course (may be substituted by OMGT 5123). Prerequisite: OMGT 5003, OMGT 4323 and OMGT 4853, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)
This course is cross-listed with EMGT 5463.

\section*{OMGT 5473. Lean Six Sigma. 3 Hours.}

This course covers the application of lean principles to manufacturing, service and government processes in order to improve productivity, increase value and eliminate waste as well as the use of the Six Sigma problem solving methodology to reduce variation and improve quality. Students will gain experience with the tools and analysis methods used in both approaches. The topics covered include: methods for creating Lean processes, proven lean problem-solving methodologies, managing a lean transformation, implementing a Six Sigma initiative, and executing the five phases of the Six Sigma DMAIC process, and communicating results to stakeholders and decision-makers. Prerequisite: (OMGT 5003 or departmental consent), and admitted to the (Master of Science in Operations Management Program, or theProject Management Graduate Certificate Program, or be a nondegree seeking graduate student with departmental consent). (Typically offered: Fall, Spring and Summer)

\section*{OMGT 5493. Advanced Lean Six Sigma. 3 Hours.}

With an emphasis on application, this course builds upon the Lean Six Sigma and Quality Management courses and covers analysis techniques for Lean Six Sigma problem solving in the Analyze, Improve, and Control phases of the DMAIC process. The topics covered include descriptive versus inferential statistics, sampling, Hypothesis Testing with Normal and Non-Normal Data, regression analysis, design of experiments, and control charts. Prerequisite: OMGT 5473 and OMGT 5373. (Typically offered: Fall, Spring and Summer)

\section*{OMGT 5503. Maintenance Management. 3 Hours.}

Principles and practices of maintenance department organization, prevention procedures, and typical equipment problems. Includes related topics such as plant protection, preventative and plant maintenance. Pre- or Corequisite: OMGT 5003.
Prerequisite: OMGT 4333 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5623. Strategic Management. 3 Hours.}

Examines strategic management, which is defined as the art and science of formulating, implementing, and evaluating cross-functional decisions that enable an organization to achieve its long-term objectives. Principles of strategic management will be covered in conjunction with case studies to provide opportunity for analysis and experience in applying these principles in an operations management environment. Required course. Prerequisite: OMGT 5003 and OMGT 4313, and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

OMGT 5653. Introduction to Data Analytics for Operations Managers. 3 Hours. Introduces data science and data analytics. Provides basic skill instruction in the statistical data analysis programming language R. Provides experience building and interpreting descriptive and predictive data analytics models. Provides operations managers with the skill and tools to use and understand advanced data analytics methods. Provides practice communicating those results to senior stakeholders and decision makers. Prerequisite: OMGT 5003 or EMGT 5033, must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5673. Principles of Operations Research. 3 Hours.}

Surveys the mathematical models used to design and analyze operational systems. Includes linear programming models, waiting line models, computer simulation models, and management science. Students will be introduced to applications of operations research and solution methods, using spreadsheet software. Pre- or Corequisite: OMGT 5003 and OMGT 4853. Prerequisite: OMGT 4333 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5693. Advanced Analytics and Visualizations for Operations Managers.} 3 Hours.
Extends the skills taught in OMGT 5653 to provide experience building and interpreting descriptive and predictive data analytics models that incorporate text, network, and categorical data along with visualization approaches. Provides operations managers with the skill and tools to use and understand advanced data analytics methods. Provides practice communicating those results to senior stakeholders and decision-makers. Prerequisite: OMGT 5653. (Typically offered: Fall, Spring and Summer)

OMGT 5733. Human Factors in Operations Management. 3 Hours. Introduces the interaction of humans with systems, attempting to apply the same rigor of purpose and understanding to these systems and interactions as with production planning, supply chain design, or other elements of operations management. Emphasizes identifying, diagnosing and finding solutions for perceptual, cognitive and organizational errors. The scientific method and various quantitative and qualitative research techniques will be used to both evaluate and solve problems as well as determine and frame outcomes. Pre- or Corequisite: OMGT 5003. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 577V. Special Problems. 1-3 Hour.}

Application of previous course work knowledge to problems encountered in military base and civilian operations. Problems are proposed by students according to individual interests and needs. Used for courses in specific concentration, certificate or focus areas with parenthetical titles. Maybe used for courses in development. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

OMGT 5783. Project Management for Operations Managers. 3 Hours. An introduction to the Critical Path Method and Program Evaluation and Review Technique. Covers project planning and control methods; activity sequencing; time-cost trade-offs; allocation of manpower and equipment resources; scheduling activities and computer systems for PERT/CPM with emphasis on MS project. Case studies include topical issues combining methodologies and project management soft skills, such as conflict management, negotiation, presentations to stakeholders, and team building. Required course. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)
This course is cross-listed with EMGT 5783.

\section*{OMGT 5793. Risk Management. 3 Hours.}

Students will learn to apply tools to identify, assess, communicate and manage risk. Course work includes methods to identify risks, develop risk models, assess risk, and evaluate risk management options. Case studies are used to understand risk management challenges in systems development in complex organizations. Prerequisite: OMGT 5003 or EMGT 5033, must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

OMGT 5823. Information Technology for Operations Managers. 3 Hours. Information Technology for the management and control of information systems and processes used in operations management. Topics covered include e-Business and e-Commerce Systems, Management Information Systems (MIS), Data Resource Management, Networking, Decision Support, Information Security, Enterprise and Global IT, and IT Strategies and Solutions for Operations Managers. Preor Corequisite: OMGT 5003. Prerequisite: OMGT 4853 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5833. Advanced Decision Support Tools and Visualization for Operations Managers. 3 Hours.}

This course covers advanced decision support tools and visualization used in engineering and operations management including functions and techniques for data manipulation and error testing, charts and chart templates, data query and pivot tables, templates and forms, probability, "What If" sensitivity analysis, and dashboards. The decision support tools covered are Microsoft Excel and Tableau. Provides practice communicating to senior stakeholders and decision-makers. Preor Corequisite: OMGT 5003. Prerequisite: OMGT 4853 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

\section*{OMGT 5873. Organizing for Change. 3 Hours.}

Provides an overview of fundamental management functions, organizational decision-making authority, structures and controls to support managing change. Topics include leadership, strategy and ethical perspectives on change management. Pre- or Corequisite: OMGT 5003. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

OMGT 5903. Operations Management of Unmanned Aircraft Systems. 3 Hours. Course focuses on the fundamentals of UAS operations and the applications of UAS systems in research, government and business applications. Modules covers government compliance, licensing/certification requirements, University Policy and current events in the UAS field. Prepares students to participate in research or UAS operational roles. Discusses policy and process issues in society and considerations for ethical UAS use. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

OMGT 5913. Advanced Air Mobility and Autonomous Operations. 3 Hours.
Provides advanced knowledge of autonomous vehicles and new eVTOL aircraft implications on the National Airspace System, Advanced Air Mobility and Universal Traffic Management, and airports. Teaches advanced autonomous compliance systems for operations managers. Covers knowledge for industry standard certifications including government and industry compliance standards. Focuses on system integration to improve operations efficiency, risk management, and safety. Prerequisite: OMGT 5903. (Typically offered: Irregular)

OMGT 5933. Cybersecurity for Operations Managers. 3 Hours.
The cybersecurity for operations managers course introduces strategic and tactical processes to implement the National Institute of Standards and Technology (NIST) Risk Management Framework (RMF). Additionally, the Body of Knowledge for the American Society of Industrial Security is applied to each process and procedure. Managers and Leaders responsible for cybersecurity, with or without an IT background, are provided a logical RMF to establish an effective cybersecurity program in their organization. (Typically offered: Fall, Spring and Summer)

\section*{OMGT 5943. Resilient Design and Crisis Management for Operations} Managers. 3 Hours.
This course expands the knowledge of managing and responding to a crisis including preparation through resilient design. Using foundational knowledge from the Department of Homeland Security Federal Emergency Management Administration and industry standards, the course guides operations managers in the preparation, prevention and response to emergency incidents and the techniques used to add resilience to operations. Human resources, supply chain, organizational structure, authorities, legal frameworks and emergency operations centers and private/public partnerships including critical infrastructure protection are explored throughout the course. (Typically offered: Irregular)

\section*{OMGT 5983. Advanced Project Management. 3 Hours.}

This course builds upon the project management for operations managers' course and offers students an opportunity to apply advanced project management tools to manage troubled projects. Topics include determining the project status using the schedule baseline, cost estimations, and earned value management techniques. Students will learn how to perform a project assessment/audit and will create a troubled project recovery plan. The course includes presentations of case study assignments to gain experience in communicating the status and recovery of failed and troubled projects. Prerequisite: OMGT 5783 and must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Fall, Spring and Summer)

OMGT 5993. Homeland Security for Operations Managers. 3 Hours. Introduces concepts of Homeland Security in industry and government settings. Covers basic legal and compliance programs and risk management processes. Explains the continuity between critical infrastructure, government and private sector roles. Focuses on system design and understanding of the National Incident Management System protecting the homeland. Introduces cybersecurity and intelligence analysis concepts. Prerequisite: Must be admitted to the Master of Science in Operations Management Program, Project Management Graduate Certificate Program, be a Non-Degree Seeking Graduate Student, or have departmental consent. (Typically offered: Irregular)

OMGT 600V. Master's Thesis. 1-6 Hour.
Master's thesis option for OMGT students. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{Philosophy (PHIL) \\ Courses}

PHIL 1003. Critical Reasoning: Discovery, Deduction, and Intellectual SelfDefense. 3 Hours.
This is a practical, "hands-on" course in sound reasoning, critical thinking, and the careful evaluation of evidence and argument. The course will utilize a range of realworld sources (television, Internet, magazines, etc.) and will be informed in content and method by the psychology of human judgment. (Typically offered: Irregular)

PHIL 2003. Introduction to Philosophy (ACTS Equivalency = PHIL 1103). 3 Hours.

An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. (Typically offered: Fall, Spring and Summer)

\section*{PHIL 2003C. Introduction to Philosophy. 3 Hours.}

An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. Corequisite: Drill component. (Typically offered: Fall and Spring)
This course is equivalent to PHIL 2003.

\section*{PHIL 2003H. Honors Introduction to Philosophy. 3 Hours.}

An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. (Typically offered: Fall, Spring and Summer)
This course is equivalent to PHIL 2003.
PHIL 2103. Introduction to Ethics (ACTS Equivalency = PHIL 1003). 3 Hours. Basic concepts of moral philosophy, including historical and contemporary literature concerned with such issues as ethical relativism vs. objectivism, duty, happiness, freedom of the will and responsibility, facts and values, individual liberty and society. Application of theories to substantive questions. (Typically offered: Fall, Spring and Summer)

PHIL 2103C. Introduction to Ethics (ACTS Equivalency = PHIL 1003). 3 Hours. Basic concepts of moral philosophy, including historical and contemporary literature concerned with such issues as ethical relativism vs. objectivism, duty, happiness, freedom of the will and responsibility, facts and values, individual liberty and society. Application of theories to substantive questions. Corequisite: Drill component. (Typically offered: Irregular)
This course is equivalent to PHIL 2103.
PHIL 2203. Logic (ACTS Equivalency = PHIL 1003). 3 Hours.
Traditional and modern methods of deductive and inductive inference. (Typically offered: Fall, Spring and Summer)

PHIL 2203C. Logic (ACTS Equivalency = PHIL 1003). 3 Hours.
Traditional and modern methods of deductive and inductive inference. Corequisite: Drill Component. (Typically offered: Fall and Spring)
This course is equivalent to PHIL 2203.

PHIL 2303. Human Nature and the Meaning of Life. 3 Hours.
Examination of important views on human nature, the meaning of human existence, the value and significance of different human activities and projects, and on what philosophy, religion, art, and literature have to teach us on these topics. Reading may be drawn from a variety of philosophical, literary, and religious writings. (Typically offered: Irregular)

PHIL 2503. Philosophical Explorations. 3 Hours.
Explores topics in philosophy that are not currently covered in lower-level philosophy courses. (Typically offered: Irregular)

PHIL 3103. Ethics and the Professions. 3 Hours.
After a survey of the standard theories of moral obligation, justice, and rights, the course focuses on specific moral problems that arise within engineering, business, and the professions. (Typically offered: Fall, Spring and Summer)

PHIL 3113. Environmental Ethics. 3 Hours.
The course addresses ethical questions about nature and the natural environment. Topics of discussion include anthropocentric and biocentric ethics, population control, obligations to future generations, animal rights, moral considerability, Leopold's land ethic, deep ecology, and ecofeminism. (Typically offered: Irregular) This course is cross-listed with ENSC 3933.

\section*{PHIL 3123. Bioethics. 3 Hours.}

This course examines ethical dilemmas that arise in biological research, medical research, medical practice, and healthcare policy. Topics may include such things as abortion, assisted reproduction, cloning \& genetic engineering, assisted suicide \& voluntary euthanasia, organ donation, research ethics, patient autonomy, and healthcare policy. (Typically offered: Irregular)

PHIL 3203. Philosophy and the Christian Faith. 3 Hours.
This course will deal with philosophical issues that arise in Christian theology. Topics to be discussed may include the doctrines of the Incarnation, the Trinity, Atonement, and Hell, as well as the nature of God and the relationship between faith and reason. (Typically offered: Irregular)

\section*{PHIL 3443. Animal Minds. 3 Hours.}

This course explores questions about thinking, consciousness, emotion, and communication in non-human animals; about the differences between human and non-human animals; and about implications for our treatment of animals. (Typically offered: Irregular)

PHIL 390V. Readings. 1-6 Hour.
Readings on topics of research interested or those not typically offered in regular classes, by arrangement with Professor. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.
PHIL 3923H. Honors Colloquium. 3 Hours.
Treats a special topic of issue offered as part of the honors program. Prerequisite: honors candidacy (not restricted to candidacy in philosophy). (Typically offered: Irregular) May be repeated for degree credit.

\section*{PHIL 3943. Philosophy and Physics. 3 Hours.}

Examination of the metaphysical and epistemological implications of specific physical theories with an emphasis on twentieth-century physics. Topics covered may include the nature of space and time (particularly as described in relativity theory), the nature of the quantum mechanical world, and the temporal asymmetries found in thermodynamics and other areas of physics. (Typically offered: Irregular)

\section*{PHIL 399VH. Honors Course. 1-6 Hour.}

Honors thesis research and writing under the direction of a faculty member in the department. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

PHIL 4003. Ancient Greek Philosophy. 3 Hours.
Pre-Socratics, Socrates, Plato, and Aristotle. Prerequisite: 3 hours of philosophy. (Typically offered: Fall)

PHIL 4033. Modern Philosophy-17th and 18th Centuries. 3 Hours.
British and Continental philosophy, including Bacon, Descartes, Spinoza, Leibniz, Hobbes, Locke, Berkeley, Hume, and Kant. (Typically offered: Spring)
PHIL 4093. Special Topics in Philosophy. 3 Hours.
This course will cover subject matter not covered in regularly offered courses. Course cannot be repeated when the topic is the same as one in which the student is previously enrolled. (Typically offered: Irregular) May be repeated for degree credit.

\section*{PHIL 4093H. Honors Special Topics in Philosophy. 3 Hours.}

This course will cover subject matter not covered in regularly offered courses. Course cannot be repeated when the topic is the same as one in which the student is previously enrolled. Prerequisite: Honors standing. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to PHIL 4093.

\section*{PHIL 4103. Modern Jewish Thought. 3 Hours.}

A survey of the main trends in Jewish thought from the seventeenth through the nineteenth century. (Typically offered: Irregular)
This course is cross-listed with JWST 4003.
PHIL 4113. Social and Political Philosophy. 3 Hours.
Selected philosophical theories of society, the state, social justice, and their connections with individuals. (Typically offered: Irregular)

PHIL 4123. Classical Ethical Theory. 3 Hours.
Study of classical texts in the history of philosophical ethics from Plato to Nietzsche. Philosophers covered may include Plato, Aristotle, Butler, Hume, Kant, and Mill. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)
PHIL 4133. Contemporary Ethical Theory. 3 Hours.
A study of contemporary texts in philosophical ethics from G.E. Moore to the present. Philosophers covered may include Moore, Stevenson, Hare, Foot, and Rawls. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

\section*{PHIL 4143. Philosophy of Law. 3 Hours.}

A philosophical consideration of the nature of law, theory of adjudication, concepts of legal responsibility, liberty and the limits of law, and selected moral-legal issues (abortion, affirmative action, punishment, etc.). (Typically offered: Irregular)

PHIL 4193. Existentialism. 3 Hours.
Explores texts by major existentialist philosophers including Kierkegaard, Nietzsche, Heidegger, Sartre, and relevant literary works. Topics may include critiques of traditional views of human nature, the self, the meaning of life and existing authentically. (Typically offered: Irregular)

\section*{PHIL 4203. Theory of Knowledge. 3 Hours.}

An examination of skepticism, the nature and structures of knowledge and epistemic justification, human rationality, and the justification of religious belief. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

\section*{PHIL 4213. Philosophy of Science. 3 Hours.}

Examination of issues related to scientific explanation, empirical foundations of science, observation and objectivity, nature of laws and theories, realism and instrumentalism, induction and confirmation, models, causation, and simplicity, beginning with historical survey set in the context of the history of science but emphasizing works from the 1930s to the current period, often including issues in recent physics. (Typically offered: Irregular)

PHIL 4233. Philosophy of Language. 3 Hours.
A survey of mainstream philosophical theories of meaning, reference, truth, and logical form. Attention given to the views of such figures as Frege, Russell, Tarski, Searie, Dumett, and the advocates of possible world's semantics. (Typically offered: Irregular)

\section*{PHIL 4253. Symbolic Logic I. 3 Hours.}

Rigorous analyses of the concepts of proof, consistency, equivalence, validity, implication, and truth. Full coverage of truth-functional logic and quantification theory (predicate calculus). Discussion of the nature and limits of mechanical procedures (algorithms) for proving theorems in logic and mathematics. Informal accounts of the basic facts about infinite sets. Prerequisite: PHIL 2203 or MATH 2603. (Typically offered: Fall)
This course is cross-listed with MATH 4253.

\section*{PHIL 4303. Philosophy of Religion. 3 Hours.}

Types of religious belief and critical examination of their possible validity, including traditional arguments and contemporary questions of meaning. (Typically offered: Irregular)

\section*{PHIL 4313. Contemporary Jewish Thought. 3 Hours.}

A survey of trends in Jewish thought in the twentieth and twenty-first centuries, focusing on the ways in which Jewish thinkers have responded to the events affecting Jews and the conditions of Jewish life from approximately 1900 to the present. (Typically offered: Irregular)
This course is cross-listed with JWST 4013.

\section*{PHIL 4323. Philosophy of Race and Gender. 3 Hours.}

Examines the metaphysical, ethical, aesthetic, political, and legal dimensions of race and gender. Topics include theories of race and gender, Latinx feminism, the ethics of racist humor and removing historical monuments, misogyny and misandry, transgender and nonbinary identities, and the role of self-interpretation in sexual orientation. (Typically offered: Irregular)

\section*{PHIL 4333. Feminist Philosophy. 3 Hours.}

Explores feminist contributions in traditional philosophical areas such as ethics, political philosophy, and epistemology. Topics include feminist analyses of the family, pornography, sexual harassment, violence against women, and race relations; and ways different schools of feminist thought describe women's oppression, its causes, and resistance to it. (Typically offered: Irregular)

PHIL 4403. Philosophy of Art. 3 Hours.
Varieties of truth and value in the arts and aesthetic experience, focusing on the creative process in the art and in other human activities. (Typically offered: Spring)

PHIL 4423. Philosophy of Mind. 3 Hours.
An examination of such topics such as the relationship between mind and body, the mentality of machines, knowledge of other minds, the nature of psychological explanation, the relationships between psychology and the other sciences, mental representation, the nature of the self, and free will and determinism. (Typically offered: Irregular)

\section*{PHIL 4433. Philosophy of Psychology. 3 Hours.}

Explores philosophical issues concerning the domain, foundations and methodology of psychology, and the relation of psychological explanations to other scientific and philosophical investigations of the mind. Topics include cognitive architecture and the evolution of minds, extended or embodied cognition, perception and introspection, consciousness and attention, social cognition, thought and language. (Typically offered: Irregular)
This course is cross-listed with PSYC 4433.
PHIL 4603. Metaphysics. 3 Hours.
Theory and critical analysis of such basic metaphysical problems as mind and body, universals and particulars, space and time, determinism and free will, self-identity and individualism, with emphasis on contemporary perspectives. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

\section*{PHIL 4983. Capstone Course for Philosophy Majors. 3 Hours.}

An undergraduate seminar to be taken in the student's final spring semester. The content will vary with the instructor. The objective is for the student to sharpen his or her philosophical skills by, e.g., writing short papers, giving class presentations, and writing a substantial final essay. Prerequisite: 21 hours of philosophy. (Typically offered: Spring)

PHIL 5003. Ancient Greek Philosophy. 3 Hours.
Pre-Socratics, Socrates, Plato, and Aristotle. Graduate degree credit will not be given for both PHIL 4003 and PHIL 5003. Prerequisite: Three hours of philosophy coursework. (Typically offered: Fall)

\section*{PHIL 5033. Modern Philosophy-17th and 18th Centuries. 3 Hours.}

British and Continental philosophy, including Bacon, Descartes, Spinoza, Leibniz, Hobbes, Locke, Berkeley, Hume, and Kant. Graduate degree credit will not be given for both PHIL 4033 and PHIL 5033. (Typically offered: Spring)

\section*{PHIL 5093. Special Topics in Philosophy. 3 Hours.}

This course will cover subject matter not covered in regularly offered courses. Graduate degree credit will not be given for both PHIL 4093 and PHIL 5093. Course cannot be repeated when topic is the same as one for which the student has been previously enrolled. (Typically offered: Irregular) May be repeated for degree credit.

\section*{PHIL 5103. Modern Jewish Thought. 3 Hours.}

A survey of the main trends in Jewish thought from the seventeenth through the nineteenth century. Graduate degree credit will not be given for both PHIL 4103 and PHIL 5103. (Typically offered: Irregular)

\section*{PHIL 5113. Social and Political Philosophy. 3 Hours.}

Selected philosophical theories of society, the state, social justice, and their connections with individuals. Graduate degree credit will not be given for both PHIL 4113 and PHIL 5113. (Typically offered: Irregular)

PHIL 5123. Classical Ethical Theory. 3 Hours.
Study of classical texts in the history of philosophical ethics from Plato to Nietzsche. Philosophers covered may include Plato, Aristotle, Butler, Hume, Kant, and Mill. Graduate degree credit will not be given for both PHIL 4123 and PHIL 5123. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

\section*{PHIL 5133. Contemporary Ethical Theory. 3 Hours.}

A study of contemporary texts in philosophical ethics from G.E. Moore to the present. Philosophers covered may include Moore, Stevenson, Hare, Foot, and Rawls. Graduate degree credit will not be given for both PHIL 4133 and PHIL 5133. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

PHIL 5143. Philosophy of Law. 3 Hours.
A philosophical consideration of the nature of law, theory of adjudication, concepts of legal responsibility, liberty and the limits of law, and selected moral-legal issues (abortion, affirmative action, punishment, etc.). Graduate degree credit will not be given for both PHIL 4143 and PHIL 5143. (Typically offered: Irregular)

\section*{PHIL 5193. Existentialism. 3 Hours.}

Explores texts by major existentialist philosophers including Kierkegaard, Nietzsche, Heidegger, Sartre, and relevant literary works. Topics may include critiques of traditional views of human nature, the self, the meaning of life and existing authentically. (Typically offered: Irregular)

PHIL 5203. Theory of Knowledge. 3 Hours.
An examination of skepticism, the nature and structures of knowledge and epistemic justification, human rationality, and the justification of religious belief. Graduate degree credit will not be given for both PHIL 4203 and PHIL 5203. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

\section*{PHIL 5213. Philosophy of Science. 3 Hours.}

Examination of issues related to scientific explanation, empirical foundations of science, observation and objectivity, nature of laws and theories, realism and instrumentalism, induction and confirmation, models, causation, and simplicity, beginning with historical survey set in the context of the history of science but emphasizing works from the 1930s to the current period, often including issues in recent physics. Graduate degree credit will not be given for both PHIL 4213 and PHIL 5213. (Typically offered: Irregular)

PHIL 5233. Philosophy of Language. 3 Hours.
A survey of mainstream philosophical theories of meaning, reference, truth, and logical form. Attention given to the views of such figures as Frege, Russell, Tarski, Searie, Dumett, and the advocates of possible world's semantics. Graduate degree credit will not be given for both PHIL 4233 and PHIL 5233. (Typically offered: Irregular)

\section*{PHIL 5253. Symbolic Logic I. 3 Hours.}

Rigorous analyses of the concepts of proof, consistency, equivalence, validity, implication, and truth. Full coverage of truth-functional logic and quantification theory (predicate calculus). Discussion of the nature and limits of mechanical procedures (algorithms) for proving theorems in logic and mathematics. Informal accounts of the basic facts about infinite sets. Graduate degree credit will not be given for both PHIL 4253 and PHIL 5253. Prerequisite: PHIL 2203 or MATH 2603. (Typically offered: Fall)
This course is cross-listed with MATH 5263.
PHIL 5303. Philosophy of Religion. 3 Hours.
Types of religious belief and critical examination of their possible validity, including traditional arguments and contemporary questions of meaning. Graduate degree credit will not be given for both PHIL 4303 and PHIL 5303. (Typically offered: Irregular)

\section*{PHIL 5313. Contemporary Jewish Thought. 3 Hours.}

A survey of trends in Jewish thought in the twentieth and twenty-first centuries, focusing on the ways in which Jewish thinkers have responded to the events affecting Jews and the conditions of Jewish life from approximately 1900 to the present. Graduate degree credit will not be given for both PHIL 4313 and PHIL 5313. (Typically offered: Irregular)

\section*{PHIL 5323. Philosophy of Race and Gender. 3 Hours.}

Examines the metaphysical, ethical, aesthetic, political, and legal dimensions of race and gender. Topics include theories of race and gender, Latinx feminism, the ethics of racist humor and removing historical monuments, misogyny and misandry, transgender and nonbinary identities, and the role of self-interpretation in sexual orientation. (Typically offered: Irregular)
PHIL 5333. Feminist Philosophy. 3 Hours.
Explores feminist contributions in traditional philosophical areas such as ethics, political philosophy, and epistemology. Topics include feminist analyses of the family, pornography, sexual harassment, violence against women, and race relations; and ways different schools of feminist thought describe women's oppression, its causes, and resistance to it. (Typically offered: Irregular)
PHIL 5403. Philosophy of Art. 3 Hours.
Varieties of truth and value in the arts and aesthetic experience, focusing on the creative process in the art and in other human activities. Graduate degree credit will not be given for both PHIL 4403 and PHIL 5403. (Typically offered: Spring)

\section*{PHIL 5423. Philosophy of Mind. 3 Hours.}

An examination of such topics such as the relationship between mind and body, the mentality of machines, knowledge of other minds, the nature of psychological explanation, the relationships between psychology and the other sciences, mental representation, the nature of the self, and free will and determinism. Graduate degree credit will not be given for both PHIL 4423 and PHIL 5423. (Typically offered: Irregular)

PHIL 5433. Philosophy of Psychology. 3 Hours.
Explores philosophical issues concerning the domain, foundations and methodology of psychology, and the relation of psychological explanations to other scientific and philosophical investigations of the mind. Topics include cognitive architecture and the evolution of minds, extended or embodied cognition, perception and introspection, consciousness and attention, social cognition, thought and language. (Typically offered: Irregular)

PHIL 5603. Metaphysics. 3 Hours.
Theory and critical analysis of such basic metaphysical problems as mind and body, universals and particulars, space and time, determinism and free will, self-identity and individualism, with emphasis on contemporary perspectives. Graduate degree credit will not be given for both PHIL 4603 and PHIL 5603. Prerequisite: 3 hours of philosophy. (Typically offered: Irregular)

\section*{PHIL 5823. Seminar: Spinoza. 3 Hours.}

Seminar: Spinoza (Typically offered: Irregular)
PHIL 5883. Seminar: Wittgenstein. 3 Hours.
Seminar: Wittgenstein (Typically offered: Irregular)
PHIL 5983. Philosophical Seminar. 3 Hours.
Various topics and issues in historical and contemporary philosophy. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

PHIL 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

PHIL 690V. Graduate Readings. 1-6 Hour.
Supervised individual readings in historical and contemporary philosophy. (Typically offered: Fall, Spring and Summer)
PHIL 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Physical Education (PHED) \\ Courses}

PHED 1003. The Physical Education Profession: An Overview. 3 Hours.
An introduction to the teaching of physical education. (Typically offered: Fall and Spring) May be repeated for degree credit.

PHED 2023. Sport Skills. 3 Hours.
This course is designed to prepare the student to teach sport skills, primarily those taught in grades 5-8. (Typically offered: Fall)
PHED 2373. Elementary Physical Education. 3 Hours.
Program planning and techniques of teaching physical education activities to children; for early childhood, elementary and physical education teachers, supervisors, and principals. (Typically offered: Spring)

\section*{PHED 3003. Outdoor Education. 3 Hours.}

This course is designed to provide opportunities for the student to acquire the skills, teaching and leadership techniques associated with outdoor and adventure activities. Prerequisite: Admission into PHED BSE program is required. (Typically offered: Fall)

\section*{PHED 3033. Educational Rhythms and Gymnastics. 3 Hours.}

This course is designed to provide opportunities for the student to perform and teach a variety of rhythmical and gymnastic activities. Prerequisite: Admission into PHED BSE program is required. (Typically offered: Spring)

\section*{PHED 3043. Teaching Fitness. 3 Hours.}

Instructional strategies for teaching public school students about fitness concepts. Prerequisite: Admission into PHED BSE program is required. (Typically offered: Spring)

\section*{PHED 3163. Applied Kinesiology. 3 Hours.}

Examination of the physiological responses and biomechanical principles of movement. The exploration includes the study of the maturation of the body's functional capacities as it relates to exercise and the fundamental principles of mechanical analysis of movement. (Typically offered: Fall)

\section*{PHED 3203. Principles and Problems of Coaching. 3 Hours.}

A focus on the various aspects of coaching the athletes in contemporary society through an examination of research findings related to factors affecting performance. Attention to be given to principles, problems and understanding essential to the management of athletic contests. (Typically offered: Fall)

\section*{PHED 3223. Motor Development. 3 Hours.}

An overview of contemporary motor development and movement theory, developmental hierarchies, and physiological aspects of development throughout the lifespan. (Typically offered: Fall and Spring)

PHED 3413. Administration in Physical Education. 3 Hours.
An examination of the administrative duties of the physical education teacher. (Typically offered: Spring)

PHED 3573. The School Health Program. 3 Hours.
Studies school health services, the health environment, and health education, as well as the teacher's potential role in each. Prerequisite: PBHL 1103. (Typically offered: Fall)

\section*{PHED 3623. Sport Sociology. 3 Hours.}

An investigation of the impact of physical education and sport on society. (Typically offered: Spring)

PHED 3903. Physical Education for Special Populations. 3 Hours.
Provides fundamental concepts and skills essential to physical education programming for students with disabilities. Deals with definitions, disabling conditions, developmental and remedial activities, games, and sports. Prerequisite: Junior standing. (Typically offered: Fall)

PHED 391V. Special Topics in PHED. 1-3 Hour.
Designed to cover specialized topics not presented in physical education coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{PHED 3991H. Physical Education Honors Thesis Tutorial. 1 Hour.}

Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and PHEDBS major. (Typically offered: Fall, Spring and Summer)

\section*{PHED 4001. Coaching Practicum. 1 Hour.}

Designed for students who want to add the Coaching Endorsement to the state teaching license. Student serves as a coaching assistant with a local school, University or recreational sports team. Students who serves as a coaching assistant with a local school must successfully complete a criminal background check prior to beginning coaching practicum. Prerequisite: PHED 3203 and proof of current First Aid/CPR/AED certification submitted to instructor of record. (Typically offered: Fall and Spring)

PHED 4023. Class Management. 3 Hours.
This course is designed to provide opportunities for the student to acquire an understanding that emphasizes class management; and includes professional ethics, and school policies related to students, faculty, and programs. Corequisite: PHED 407V and PHED 4733. Prerequisite: Admission into PHED BSE program, earn a cumulative grade point average of 2.7 , and take the Praxis II exams required by the Arkansas Department of Education licensure area of K-12 Physical Education, Wellness and Leisure by December 1st. (Typically offered: Spring)

PHED 407V. Physical Education Teaching Internship. 1-9 Hour.
This internship involves supervised teaching experience in a \(\mathrm{P}-12\) setting. Students will be placed under the guidance of a mentor teacher at specific school sites within NW Arkansas. Internship will be done at both the elementary and secondary levels. Successful completion of a criminal background check is required before beginning internship. Corequisite: PHED 4023 and PHED 4733. Prerequisite: Admission into PHED BSE program, earn a cumulative grade point average of 2.7, and take the Praxis II exams required by the Arkansas Department of Education licensure area of K-12 Physical Education, Wellness and Leisure by December 1st. (Typically offered: Spring)

\section*{PHED 432V. Teaching Practicum. 1-2 Hour.}

K-12 Kinesiology majors serve as a teaching assistant with a local school physical education teacher. This course should be taken the semester before PHED 407V Internship. Prerequisite: Admission into PHED BSE program and a cumulative grade point average of 2.7 are required. (Typically offered: Fall)

\section*{PHED 4703. Assessment in Physical Education. 3 Hours.}

An examination of the assessment duties required of a physical education teacher. The use of authentic assessment and various grading strategies will be investigated. Prerequisite: Admission into PHED BSE program and a cumulative grade point average of 2.7 are required. (Typically offered: Fall)

PHED 4733. Senior Seminar. 3 Hours.
This capstone class will cover special topics for the Kinesiology P-12 students in preparation for entry into the profession. Resumes, cover letters, teaching philosophy, references, and interview preparation will be included. Students will also review contemporary issues relevant to the physical education teacher. Corequisite: PHED 4023. Prerequisite: Admission into PHED BSE program, earn a cumulative grade point average of 2.7, and take the Praxis II exams required by the Arkansas Department of Education licensure area of K-12 Physical Education, Wellness and Leisure by December 1st. (Typically offered: Spring)

\section*{PHED 4743. Secondary Physical Education. 3 Hours.}

Strategies and curriculum for physical education, grades 7-12. Prerequisite: Admission into PHED BSE program and a cumulative grade point average of 2.7 are required. (Typically offered: Fall)

PHED 480V. Workshop. 3-6 Hour.
Physical education workshop. Prerequisite: Instructor consent. (Typically offered: Summer)

PHED 5243. Sport Skill Assessment and Instructional Strategies. 3 Hours.
The focus of this course is practical assessment techniques and instructional strategies in the area of sport and physical education activities. (Typically offered: Fall and Summer)

PHED 5253. The Physical Education Curriculum. 3 Hours.
Principles, problems, procedures, and the influence of educational philosophy on programs in physical education and their application in the construction of a course of study for a specific situation. (Typically offered: Fall and Summer)

\section*{PHED 5273. Professional Issues in Physical Education and Sport. 3 Hours.}

A review of contemporary research literature informing effective teaching practices in physical education settings. Students gain experience in critically reviewing literature and discussing current issues. (Typically offered: Fall and Summer)

PHED 5313. Risk Management in Physical Education \& Athletics. 3 Hours. This course is designed to provide opportunities for the student to acquire an understanding of how to reduce the risk of injuries and eliminate hazards that may contribute to injuries associated with physical education and athletics. (Typically offered: Spring and Summer)

\section*{PHED 5483. Conducting Research in Physical Education. 3 Hours.}

Methods and techniques of research in physical education, including an analysis of examples of their use and practice in their application to problems of interest to the student. Prerequisite: Students must be currently enrolled in the online MEd in Physical Education program. (Typically offered: Fall and Spring)

PHED 5553. Scientific Principles of Movement and Performance. 3 Hours.
This course focuses on theoretical information about sport biomechanics and movement principles, with practical applications to the physical education of coaching profession. (Typically offered: Spring and Summer)

\section*{PHED 5643. Motor Learning. 3 Hours.}

Concepts of motor learning and control are presented. Attention is given to an analysis of the literature in movement control, motor behavior, and motor learning. (Typically offered: Spring and Summer)

\section*{PHED 5753. Sport Psychology. 3 Hours.}

Investigation of historical and contemporary research in sport psychology. (Typically offered: Spring and Summer)

PHED 5803. Measurement Concepts for K-12 Physical Education Teachers. 3 Hours.
This course focuses on techniques that physical education teachers can use to monitor student progress in a K-12 environment. (Typically offered: Fall and Summer)

\section*{PHED 6363. Supervision in Physical Education. 3 Hours.}

The focus of this course is instructional supervision as a set of complex processes in which the supervisor works within accepted guidelines and functions to effectively supervise a teacher's pedagogical development. The Physical Education Instructional Supervision (PEIS) Model will be used to help facilitate this process. (Typically offered: Fall and Spring)

PHED 6723. Project Implementation and Data Analysis. 3 Hours.
This course is designed to provide students with the tools to identify, develop, and submit grant proposals. (Typically offered: Fall and Spring)

\section*{Physical Education Activity (PEAC)}

\section*{Courses}

PEAC 1221. Beginning Jogging. 1 Hour.
Instruction and participation in jogging. (Typically offered: Irregular)
PEAC 1391. Fitness Walking. 1 Hour.
Instruction and participation in vigorous walking for cardiovascular development and improvement. (Typically offered: Irregular)

PEAC 1621. Fitness Concepts. 1 Hour.
Acquaints students with a basic knowledge, understanding, and value of physical activity as related to optimal wellness. (Typically offered: Irregular)

PEAC 1901. Special Topics. 1 Hour.
Instruction and participation in specialized activity. (Typically offered: Irregular) May be repeated for up to 4 hours of degree credit.

\section*{Physics (PHYS)}

\section*{Courses}

PHYS 1021L. Physics and Human Affairs Laboratory. 1 Hour.
Laboratory 2 hours per week. Pre- or Corequisite: PHYS 1023. (Typically offered: Fall, Spring and Summer)

PHYS 1021M. Honors Physics and Human Affairs Laboratory. 1 Hour.
Laboratory 2 hours per week. Pre- or Corequisite: PHYS 1023H. (Typically offered: Fall, Spring and Summer)
This course is equivalent to PHYS 1021L.

PHYS 1023. Physics and Human Affairs. 3 Hours.
The great ideas of physics, together with their philosophical and social impact. Scientific topics include cosmology, relativity, quantum mechanics. Philosophical and social topics include methods and values of science, problems related to energy sources, and implications of modern weapons. Non-mathematical. Designed for non-science majors. Along with PHYS 1021L, can be used to satisfy a 4-year physical science requirement for a B.A. degree. Students who have received credit in PHYS 2013 and PHYS 2033, or PHYS 2054 and PHYS 2074 cannot also receive degree credit in this course. Corequisite: PHYS 1021L. (Typically offered: Fall, Spring and Summer)

\section*{PHYS 1023H. Honors Physics and Human Affairs. 3 Hours.}

The great ideas of physics, together with their philosophical and social impact. Scientific topics include cosmology, relativity, quantum mechanics. Philosophical and social topics include methods and values of science, problems related to energy sources, and implications of modern weapons. Non-mathematical. Designed for non-science majors. Along with PHYS 1021L, can be used to satisfy a 4-year physical science requirement for a B.A. degree. Students who have received credit in PHYS 2013 and PHYS 2033, or PHYS 2054 and PHYS 2074 cannot also receive degree credit in this course. Corequisite: PHYS 1021M. (Typically offered: Fall, Spring and Summer)

This course is equivalent to PHYS 1023.
PHYS 1034. Physics for Elementary Education Majors. 4 Hours.
For elementary education majors. Physical science concepts based on state frameworks are explored in a mixed lecture/lab environment. The inquiry-based lab activities can be transferable for school classroom use. Topics covered include: scientific inquiry, motion and forces, conservation of energy, heat, light, electricity and simple circuits, and magnetism. Prerequisite: Elementary education major. Corequisite: Lab component. (Typically offered: Spring)

PHYS 1044. Physics for Architects I. 4 Hours.
Algebra-based physics covering forces and motion with emphasis on architectural structural support systems such as beams, cables, columns, and trusses. Topics include physical concepts such as linear motion, position, velocity, acceleration, forces, free-body diagrams, rotational motion, torque, center of gravity, impulse, oscillations, equilibrium, stability, balance, stress, strain, and material strength. Corequisite: Lab component. Prerequisite: Major in architecture or interior design or agricultural education communication \& technology. (Typically offered: Fall)

\section*{PHYS 1054. Physics for Architects II. 4 Hours.}

Algebra-based physics covering thermal materials, fluid flow, acoustics, electricity, and optics with emphasis on architectural design. Topics include physical concepts such as potential and thermal energy, heat pumps, water pressure, fluid dynamics, sound waves, loudness, electrical systems, direct and alternating current, series and parallel circuits, optical instruments, reflection, and refraction. Corequisite: Lab component. Prerequisite: Major in architecture or interior design or agricultural education communication \& technology. (Typically offered: Spring)

PHYS 2011L. College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab). 1 Hour.
Laboratory 2 hours per week. Corequisite: PHYS 2013. (Typically offered: Fall and Summer)

PHYS 2013. College Physics I (ACTS Equivalency = PHYS 2014 Lecture). 3 Hours.
A non-calculus survey of the principles of physics including mechanics, heat and sound. Lecture 3 hours per week and drill 1 hour per week. Corequisite: Drill component and PHYS 2011L. Prerequisite: (MATH 1203 and MATH 1213) or (MATH 1284C or MATH 2043 or MATH 2554) or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT, or 620 on the math component of the new SAT. (Typically offered: Fall and Summer)

PHYS 2031L. College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab). 1 Hour.
Laboratory 2 hours per week. Corequisite: PHYS 2033. (Typically offered: Summer)
PHYS 2033. College Physics II (ACTS Equivalency = PHYS 2024 Lecture). 3

\section*{Hours.}

Continuation of PHYS 2013. Topics include electricity and magnetism, light, relativity, quantum mechanics, atomic and nuclear structure. Lecture 3 hours, drill 1 hour per week. Corequisite: Drill component and PHYS 2031L. Prerequisite: PHYS 2013 or PHYS 2054 or PHYS 2054H. (Typically offered: Spring and Summer)

PHYS 2054. University Physics I (ACTS Equivalency = PHYS 2034). 4 Hours.
Introduction to the principles of mechanics, wave motion, temperature and heat, with calculus. Lecture three hours per week and practicum two hours a week (included in lab component). Corequisite: Lab component. Prerequisite: MATH 2554. (Typically offered: Fall, Spring and Summer)

\section*{PHYS 2054H. Honors University Physics I. 4 Hours.}

Introduction to the principles of mechanics, wave motion, temperature and heat, with calculus. Lecture three hours per week and practicum two hours a week (included in lab component). Corequisite: Lab component. Prerequisite: MATH 2554. (Typically offered: Fall, Spring and Summer)
This course is equivalent to PHYS 2054.
PHYS 2074. University Physics II (ACTS Equivalency = PHYS 2044 Lecture). 4 Hours.
Continuation of PHYS 2054. Topics covered include electricity, magnetism, light and geometric optics. Lecture three hours per week and practicum two hours per week. Corequisite: Lab component. Prerequisite: PHYS 2054 and MATH 2564. (Typically offered: Fall, Spring and Summer)
PHYS 2074H. Honors University Physics II. 4 Hours.
Continuation of PHYS 2054H. Topics covered include electricity, magnetism, light and geometric optics. Lecture three hours per week and practicum two hours per week. Corequisite: Lab component. Prerequisite: (PHYS 2054 or PHYS 2054H) and MATH 2564. (Typically offered: Spring)
This course is equivalent to PHYS 2074.
PHYS 2094. University Physics III. 4 Hours.
A continuation of PHYS 2054 and PHYS 2074. Topics include waves, physical optics, thermodynamics, kinetic theory, and an introduction to quantum mechanics. Lecture 3 hours per week and practicum 2 hours per week (included in lab component). Pre- or Corequisite: MATH 2574. Corequisite: Lab component. Prerequisite: PHYS 2074. (Typically offered: Fall)

\section*{PHYS 306V. Projects. 1-3 Hour.}

Individual experimental or theoretical research problems for advanced undergraduates. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

PHYS 3113. Analytical Mechanics. 3 Hours.
Newton's laws of motion applied to particles, systems of particles, and rigid bodies. Introduction to Hamilton's and Lagrange's equations. Pre- or Corequisite: MATH 2584. (Typically offered: Fall)

\section*{PHYS 3213. Electronics in Experimental Physics. 3 Hours.}

DC \& AC electronics, semiconductors, operational amplifiers, and digital logic circuits with lab applications in experimental physics. Corequisite: Lab component. Prerequisite: PHYS 2094 or instructor consent. (Typically offered: Spring Odd Years)

PHYS 3273. Inquiry and Modeling in Science Education. 3 Hours.
Study of science practices with emphasis on modeling and inquiry for learning/ teaching. Includes practical, philosophical, cognitive, and disciplinary specific dimensions of doing science in academic and nonacademic settings. Includes planning and implementing multiple scientific inquiries, engaging in reflective practices, writing and presenting scientific information. Safety and ethical issues are included. Corequisite: Drill component. Prerequisite: 8 hours of PHYS courses. (Typically offered: Fall)
This course is cross-listed with CHEM 3273, BIOL 3273.

\section*{PHYS 3453. Electromagnetic Theory I. 3 Hours.}

Basics of Electromagnetic Theory, focusing on statics and introducing Maxwell's equations. Topics covered are: vector calculus and the solution of partial differential equations by separation of variables, electrostatics, dielectric media, electric currents, magnetic fields, magnetic properties of matter, electromagnetic induction, force and energy in electrodynamics, and Maxwell's equations. Pre- or Corequisite: MATH 2584. Prerequisite: MATH 2574 and PHYS 2074. (Typically offered: Spring)

PHYS 3463. Electromagnetic Theory II. 3 Hours.
Basics of Electromagnetic Theory, focusing on dynamical aspects. Topics to be covered include: Time-varying electric and magnetic fields including propagation of electromagnetic plane waves in vacuum and in matter, reflection, refraction, and guided wave propagation, radiation from point charges and dipoles, and relativity and the relativistic formulation of electrodynamics. Prerequisite: PHYS 3453. (Typically offered: Fall)

\section*{PHYS 3544. Optics. 4 Hours.}

Elements of geometrical, physical, and quantum optics. Lecture 3 hours, laboratory 2 hours. Corequisite: Lab component. Prerequisite: PHYS 2074 and MATH 2564.
(Typically offered: Fall)

\section*{PHYS 3603. Introduction to Modern Physics. 3 Hours.}

An introduction to the basic ideas of 20th century physics, with an emphasis on those that form the foundations of modern technology: quantum theory and its application to atomic, nuclear, optical and condensed matter physics. No credit is given toward a B.S. degree in physics. Prerequisite: PHYS 2033 and MATH 2043 or MATH 2554. (Typically offered: Fall)

PHYS 360VL. Introduction to Modern Physics Laboratory. 1-3 Hour.
Experiments illustrating the development and concepts of modern physics. No credit given toward a B.S. major in physics. Prerequisite: PHYS 3603. (Typically offered: Fall)
PHYS 3613. Modern Physics. 3 Hours.
Introduction to special relativity, statistical physics, quantum physics, and a survey of molecules, solids, and statistical physics. Prerequisite: PHYS 2074. (Typically offered: Fall, Spring and Summer)

\section*{PHYS 361VL. Modern Physics Laboratory. 1-3 Hour.}

Advanced experiments, projects, and techniques in atomic, nuclear, and solid state physics. Pre- or corequisite: PHYS 3613. (Typically offered: Fall) May be repeated for up to 3 hours of degree credit.

\section*{PHYS 3923H. Honors Colloquium. 3 Hours.}

Covers a special topic or issue, offered as part of the honors program. No more than 3 hours may be offered toward fulfillment of the requirements for the B.S. or B.A. degree in Physics. Prerequisite: Honors candidacy (not restricted to candidacy in physics). (Typically offered: Spring) May be repeated for degree credit.
PHYS 399VH. Honors. 1-6 Hour.
Independent study for physics students enrolled in the honors program. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{PHYS 4073. Introduction to Quantum Mechanics. 3 Hours.}

A survey of quantum mechanics from the wave mechanical point of view including the application of quantum mechanics to the simple harmonic oscillator, angular momentum, and the hydrogen atom. Required course for B.S. Physics majors.
Prerequisite: PHYS 3613, MATH 2574, and MATH 2584. (Typically offered: Fall)

\section*{PHYS 4083. Advanced Quantum Mechanics. 3 Hours.}

Advanced topics in introductory quantum mechanics including identical particles, approximation methods; time-independent perturbations theory, variational principle, time-dependent perturbations theory, and scattering. Prerequisite: PHYS 4073, MATH 2574, and MATH 2584. (Typically offered: Spring)

PHYS 4113. Physics in Perspective. 3 Hours.
Human implications of physics, including life's place in the universe, the methods of science, human sense perceptions, energy utilization, social impacts of technology, and the effect of physics on modern world views. Prerequisite: PHYS 3613
(Typically offered: Irregular)

\section*{PHYS 4213. Physics of Devices. 3 Hours.}

Principles of physics applied in a selection of technologically important devices in areas including computing, communications, medical imaging, lasers, and energy utilization. Students will utilize technical journals. Prerequisite: PHYS 3613. (Typically offered: Irregular)

\section*{PHYS 4333. Thermal Physics. 3 Hours.}

Equilibrium thermodynamics, statistical physics, and kinetic energy. Prerequisite: PHYS 3613. (Typically offered: Spring)
PHYS 4613. Introduction to Biophysics and Biophysical Techniques. 3 Hours. Origins of biophysics, biological polymers and polymer physics, properties of DNA and proteins, techniques to study DNA and proteins, biological membrane and ion channels, biological energy, experimental techniques to study single DNA and proteins. Two experiments are included: (1) DNA Gel electrophoresis; (2) Measurement of double-stranded DNA melting point. Prerequisite: PHYS 3613 or consent. (Typically offered: Spring)

\section*{PHYS 4653. Subatomic Physics. 3 Hours.}

Nuclear structure and nuclear reactions. Nature and properties of elementary particles and resonances, their interactions and decays. Phenomenological theory and discussion of experimental evidence. Prerequisite: PHYS 3613. (Typically offered: Fall Odd Years)

PHYS 4713. Solid State Physics. 3 Hours.
Crystal structure, diffraction and symmetry. Lattice vibrations, elasticity and optical properties. Electronic structure, band theory, transport and magnetism. Course emphasizes applications and current topics in semiconductors, optics and magnetism. Pre- or Corequisite: PHYS 4073. (Typically offered: Spring Even Years)

\section*{PHYS 4734. Introduction to Laser Physics. 4 Hours.}

A combined lecture/laboratory course covering the theory of laser operation, laser resonators, propagation of laser beams, specific lasers such as gas, solid state, semiconductor and chemical lasers, and laser applications. Prerequisite: PHYS 3544. (Typically offered: Spring)

PHYS 4773. Introduction to Optical Properties of Materials. 3 Hours.
A course covering crystal symmetry optical transmission and absorption, light scattering (Raman and Brillouin) optical constants, carrier mobility, and polarization effects in semi-conductors, quantum wells, insulators, and other optically important materials. Prerequisite: PHYS 3544. (Typically offered: Spring)

PHYS 498V. Senior Thesis. 1-6 Hour.
Senior Thesis. (Typically offered: Fall, Spring and Summer)

PHYS 4991. Physics Senior Seminar. 1 Hour.
Student mastery of the principles of physics are assessed by means of a research paper, a presentation on the research topic, and a reflection essay over coursework completed as part of the physics degree. A quantitative assessment examination will also be administered. Satisfies the Fulbright College writing requirement. (Typically offered: Fall, Spring and Summer)

PHYS 500V. Laboratory and Classroom Practices in Physics. 1-3 Hour.
The pedagogy of curricular materials. Laboratory and demonstration techniques illustrating fundamental concepts acquired through participation in the classroom as an apprentice teacher. (Typically offered: Fall) May be repeated for up to 3 hours of degree credit.

\section*{PHYS 5011. Introduction to Current Physics Research Seminar. 1 Hour}

This seminar course introduces new Physics graduate students to the faculty of the Physics department and their current research efforts. In addition, the students will be introduced to scientific ethics, and learn communication skills. (Typically offered: Fall)

PHYS 502V. Individual Study in Advanced Physics. 1-4 Hour.
Guided study in current literature. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

PHYS 5041. Journal Club Seminar. 1 Hour.
In this seminar, the students will present talks based on published research articles. The goal of the course is to develop oral communication skills in the students. Effective literature search techniques will also be covered. (Typically offered: Spring)

\section*{PHYS 5073. Mathematical Methods for Physics. 3 Hours.}

This course merges the mathematics required in classical mechanics, electrostatics, magnetostatics, and quantum mechanics into a single course. The goal is to develop physics problem-solving skills, a strong mathematical foundation, and a more unified picture of physics. (Typically offered: Fall)

PHYS 5103. Advanced Mechanics. 3 Hours.
Dynamics of particles and rigid bodies. Hamilton's equations and canonical variables. Canonical transformations. Small oscillations. Prerequisite: PHYS 5073. (Typically offered: Fall)

PHYS 5111. Research Techniques Through Laboratory Rotations. 1 Hour Graduate students will be introduced to detailed operational aspects of two Physics research laboratories through extensive observation of those laboratory's operations during a six week rotation through each lab. Planning for starting a research project in the summer will take place in the final three week rotation period. (Typically offered: Spring)

PHYS 5213. Statistical Mechanics. 3 Hours.
Classical and quantum mechanical statistical theories of matter and radiation. Prerequisite: PHYS 5413. (Typically offered: Spring)

PHYS 5263L. Experiment and Data Analysis. 3 Hours.
This course is devoted to learning some of the frequently used experimental techniques and methods by which experimental data are analyzed to extract quantitative information on physical parameters. Students will perform experiments, analyze data, and write lab reports. Prerequisite: PHYS 5413. (Typically offered: Fall)

PHYS 5313. Advanced Electromagnetic Theory I. 3 Hours.
Electrostatics, boundary-value problems in electrostatics, electrostatics in a medium, magnetostatics, and Faraday's Law. (Typically offered: Spring)

PHYS 5323. Advanced Electromagnetic Theory II. 3 Hours.
Maxwell equations, conservation laws, wave propagation, waveguides, radiating systems, scattering, special relativity, and radiation by moving charges. (Typically offered: Fall)

PHYS 5363. Scientific Computation and Numerical Methods. 3 Hours.
An introduction to numerical methods used in solving various problems in engineering and the sciences. May not earn credit for this course and MATH 4353 or MATH 4363. (Typically offered: Fall Even Years)

This course is cross-listed with MATH 5363.
PHYS 5413. Quantum Mechanics I. 3 Hours.
Non-relativistic quantum mechanics; the Schrodinger equation; the Heisenberg matrix representation; operator formalism; transformation theory; spinors and Pauli theory; the Dirac equation; applications to atoms and molecules; collision theory; and semiclassical theory of radiation. (Typically offered: Fall)

PHYS 5423. Quantum Mechanics II. 3 Hours.
Continuation of PHYS 5413 Prerequisite: PHYS 5413. (Typically offered: Spring)
PHYS 5613. Introduction to Biophysics and Biophysical Techniques. 3 Hours. Origins of biophysics, biological polymers and polymer physics, properties of DNA and proteins, techniques to study DNA and proteins, biological membrane and ion channels, biological energy, experimental techniques to study single DNA and proteins. Two experiments are included: (1) DNA Gel electrophoresis; (2) Measurement of double-stranded DNA melting point. (Typically offered: Spring)

PHYS 5653. Subatomic Physics. 3 Hours.
Nuclear structure and nuclear reactions. Nature and properties of elementary particles and resonances, their interactions and decays. Phenomenological theory and discussion of experimental evidence. (Typically offered: Fall Odd Years)

PHYS 5713. Condensed Matter Physics I. 3 Hours.
The course covers the Drude theory and the Sommerfeld theory of metals, crystal lattices, reciprocal lattices, X-ray diffraction, Bloch's theory of electrons in periodic potential, formation of band gap, lattice vibration, and cohesive energy in solids.
Prerequisite: PHYS 5413. (Typically offered: Fall)

\section*{PHYS 5734. Laser Physics. 4 Hours.}

A combined lecture/laboratory course covering the theory of laser operation, laser resonators, propagation of laser beams, specific lasers such as gas, solid state, semiconductor and chemical lasers, and laser applications. (Typically offered: Spring Odd Years)

\section*{PHYS 5753. Applied Nonlinear Optics. 3 Hours.}

Topics include: practical optical processes, such as electro-optic effects, acoustooptic effects, narrow-band optical filters, second harmonic generation, parametric amplification and oscillation, and other types of nonlinear optical spectroscopy techniques which are finding current practical applications in industry. (Typically offered: Irregular)

PHYS 5773. Introduction to Optical Properties of Materials. 3 Hours.
This course covers crystal symmetry optical transmission and absorption, light scattering (Raman and Brillouin) optical constants, carrier mobility, and polarization effects in semi-conductors, quantum wells, insulators, and other optically important materials. (Typically offered: Spring Even Years)

\section*{PHYS 5783. Physics of 2D Materials. 3 Hours.}

Introduction to the structures of all known layered materials, followed by mechanical, electronic, spin, optical, and topological properties of two-dimensional materials. Discussion of theoretical concepts and examination of experimental manifestations of those concepts are interwoven throughout the semester. Knowledge of solid state physics is required. Pre- or Corequisite: PHYS 5413. (Typically offered: Irregular)

PHYS 588V. Selected Topics in Physics. 1-3 Hour.
Selected topics in experimental or theoretical physics at the advanced level.
(Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
PHYS 600V. Master of Science Thesis. 1-6 Hour.
Master of Science Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

PHYS 6513. Theoretical Biophysics. 3 Hours.
Introduction to biology as a complex system, networks and information theory, negative and positive feedback systems, gene regulation, noise, and noise propagation, cell signaling pathways, intercellular interactions, and emergence of cooperativity in biological systems. Prerequisite: PHYS 5613. (Typically offered: Fall Even Years)

PHYS 6713. Condensed Matter Physics II. 3 Hours.
The course covers surface physics, physics of homogeneous and inhomogeneous semiconductors, dielectric and ferroelectric physics, defects in crystals, spin interaction and magnetic properties, superconductivity, and band structure calculation. Prerequisite: PHYS 5713 and PHYS 5413. (Typically offered: Spring Even Years)

PHYS 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Plant Pathology (PLPA)}

\section*{Courses}

\section*{PLPA 3001L. Principles of Plant Pathology Laboratory. 1 Hour.}

Lab course in examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions. Spread of disease and principles of disease control. Pre- or Corequisite: PLPA 3003 or BIOL 3003. (Typically offered: Fall)
This course is cross-listed with BIOL 3001L

\section*{PLPA 3003. Principles of Plant Pathology. 3 Hours}

Examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions. Spread of disease and principles of disease control. (Typically offered: Fall)
This course is cross-listed with BIOL 3003.

\section*{PLPA 400V. Research. 1-6 Hour.}

Original investigations of assigned problems in plant pathology. Prerequisite: PLPA 3004. (Typically offered: Fall, Spring and Summer)

\section*{PLPA 4123. Bacterial Lifestyles. 3 Hours.}

The course will introduce students to bacteria as prokaryotic organisms, different from eukaryotes such as plants and animals. Model microbial systems will be studied in more detail to identify unique strategies that bacteria employ to thrive in their respective environment, whether they are causing diseases or establishing beneficial interactions with animal or plants or coexisting with other microorganisms in diverse ecological environments. The course will also cover special adaptations that bacteria have evolved to adapt to harsh environments and how these adaptations can be harnessed to control pollution. Prerequisite: (BIOL 2013 and BIOL 2011L) or BIOL 3123. (Typically offered: Spring Odd Years)
This course is cross-listed with BIOL 4223.

\section*{PLPA 4223. Plant Disease Control. 3 Hours.}

Principles, methods and mechanics of plant disease control. Emphasis is given to the integration of control measures and epidemiology of plant diseases. Lecture 3 hours per week. Prerequisite: PLPA 3003. (Typically offered: Fall) This course is cross-listed with BIOL 4133.

\section*{PLPA 4333. Biotechnology in Agriculture. 3 Hours.}

Discussion of the techniques, applications, and issues of biotechnology as it is being used in modern agriculture. Coverage includes the basics of molecular biology, production of transgenic plants and animals, and new applications in the agricultural, food, and medical marketplace. Lecture and discussion, 3 hours per week. (Typically offered: Fall)
This course is cross-listed with BIOL 4333.

PLPA 462V. Internship. 1-6 Hour.
Supervised practical work experience in pest management to develop and demonstrate professional competence. A maximum of 6 hours credit per semester or summer session is permitted. Faculty approval of projects proposal prior to enrollment, and written or oral reports are required. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

PLPA 5001. Seminar. 1 Hour.
Review of scientific literature and oral reports on current research in plant pathology. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

PLPA 502V. Special Problems Research. 1-6 Hour.
Original investigations of assigned problems in plant pathology. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{PLPA 504V. Special Topics. 1-18 Hour.}

Lecture topics of current interest not covered in other courses in plant pathology or other related areas. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

\section*{PLPA 5123. Bacterial Lifestyles. 3 Hours.}

The course will introduce students to bacteria as prokaryotic organisms, different from eukaryotes such as plants and animals. Model microbial systems will be studied in more detail to identify unique strategies that bacteria employ to thrive in their respective environment, whether they are causing diseases or establishing beneficial interactions with animal or plants or coexisting with other microorganisms in diverse ecological environments. The course will also cover special adaptations that bacteria have evolved to adapt to harsh environments and how these adaptations can be harnessed to control pollution. Prerequisite: (BIOL 2013 and BIOL 2011L) or BIOL 3123. (Typically offered: Spring Odd Years)
This course is cross-listed with BIOL 5223.
PLPA 5223. Plant Disease Control. 3 Hours.
Principles, methods and mechanics of plant disease control. Emphasis is given to the integration of control measures and epidemiology of plant diseases. Lecture 3 hours per week. Graduate degree credit will not be given for both PLPA 4223 and PLPA 5223. (Typically offered: Fall)
PLPA 5303. Advanced Plant Pathology: Host-Pathogen Interactions. 3 Hours. Presentation of important contemporary concepts relative to disease resistance and the physiology, biochemistry, and molecular biology of plant-pathogen interactions. Lecture 3 hours per week. Prerequisite: PLPA 3003 or equivalent and graduate standing. (Typically offered: Spring Odd Years)

PLPA 5313. Advanced Plant Pathology: Ecology and Epidemiology. 3 Hours.
Presentation of important contemporary concepts relative to the ecology and epidemiology of foliar and soil-borne plant pathogens. Lecture 3 hours per week. Prerequisite: PLPA 3003 and graduate standing. (Typically offered: Spring Even Years)

\section*{PLPA 5333. Biotechnology in Agriculture. 3 Hours.}

Discussion of the techniques, applications, and issues of biotechnology as it is being used in modern agriculture. Coverage includes the basics of molecular biology, production of transgenic plants and animals, and new applications in the agricultural, food, and medical marketplace. Lecture and discussion, 3 hours per week. Graduate degree credit will not be given for both PLPA 4333 and PLPA 5333. (Typically offered: Fall)

\section*{PLPA 5404. Diseases of Economic Crops. 4 Hours.}

Diagnosis and management of important diseases of cotton, fruits, rice, trees, soybeans, wheat, and vegetables will be covered in a lecture, laboratory, and field format. Lecture 2 hours, laboratory 4 hours per week. Four 1-day field trips will be involved. Corequisite: Lab component. Prerequisite: PLPA 3003. (Typically offered: Summer)

\section*{PLPA 5603. Plant Pathogenic Fungi. 3 Hours.}

Plant Pathogenic Fungi is structured as an integrated lecture/laboratory class designed for students that are interested in developing an understanding and appreciation for taxonomy, biology, and ecology of plant pathogenic fungi and related saprophytic fungi. Corequisite: Lab component. Prerequisite: PLPA 3003 or graduate standing. (Typically offered: Fall Odd Years)

PLPA 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{PLPA 6203. Plant Virology. 3 Hours.}

Lecture emphasizing discussion of recent advances in plant virology. Laboratory concerned with techniques and equipment used in plant virus studies, including transmission of viruses, characterization utilizing ultracentrifugation, spectrophotometry, electrophoresis, electron microscopy, and serology. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CHEM 5813 or CHEM 5843 or CHEM 6873 or consent of instructor. (Typically offered: Fall Even Years)

\section*{Plant Sciences (PTSC)}

\section*{Courses}

PTSC 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Political Science (PLSC) \\ Courses}

PLSC 1003H. Honors Perspectives in Political Science. 3 Hours.
This course takes a topical approach to introducing first-year students to the academic skills essential to success in college and the methods of the political science discipline. The course emphasizes the transition to the UA and universitylevel work by addressing topics such as the advising process and civic engagement. Prerequisite: Honors standing. (Typically offered: Fall and Spring)

PLSC 2003. American National Government (ACTS Equivalency = PLSC 2003). 3 Hours.
Survey of the history, basic ideas, structure, and political processes of the national government of the United States, including the fundamental relationships of the federal system. Required of all political science majors. (Typically offered: Fall, Spring and Summer)

\section*{PLSC 2003H. Honors American National Government. 3 Hours.}

Survey of the history, basic ideas, structure, and political processes of the national government of the United States, including the fundamental relationships of the federal system. Prerequisite: Honors standing. (Typically offered: Fall)
This course is equivalent to PLSC 2003.
PLSC 2013. Introduction to Comparative Politics. 3 Hours.
An introductory survey of comparative political systems. (Typically offered: Fall, Spring and Summer)

PLSC 2203. State and Local Government (ACTS Equivalency = PLSC 2103). 3 Hours.
Organization and functions of state and local governments in the United States, intergovernmental relations, administration, adjudication, and the organization and function of political parties on state and local levels. (Typically offered: Fall Even Years; Summer)

\section*{PLSC 2813. Introduction to International Relations and Global Studies. 3}

\section*{Hours.}

An interdisciplinary survey of the state system, the role of non-state actors, and the processes and outcomes of globalization. Topics include theories of international conflict and peace, international norms and ethics, international law and organizations, global cultural interactions, and contemporary transnational challenges. (Typically offered: Fall and Spring)
This course is equivalent to INST 2813.
PLSC 2813H. Honors Introduction to International Relations and Global Studies. 3 Hours.
An interdisciplinary survey of the state system, the role of non-state actors, and the processes and outcomes of globalization. Topics include theories of international conflict and peace, international norms and ethics, international law and organizations, global cultural interactions, and contemporary transnational challenges. Prerequisite: Honors standing. (Typically offered: Fall and Spring) This course is equivalent to INST 2813.

\section*{PLSC 300V. Internship in Public Affairs. 1-6 Hour.}

Work experience in a public sector agency arranged by the student under the guidance of a faculty member. Written assignment required. Can be taken remotely through Global Campus. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
PLSC 3103. Public Administration. 3 Hours.
Trends and organization of public administration, dynamics of management; fiscal and personnel management; administrative powers and responsibility. Prerequisite: PLSC 2003. (Typically offered: Spring)

\section*{PLSC 3203. Introduction to Legal Studies. 3 Hours.}

An examination of the legal profession, legal writing, and the substantive areas of law in the U.S. Prerequisite: PLSC 2003. (Typically offered: Fall and Spring)
PLSC 3213. The South and the Law: Race, Gender, and Citizenship. 3 Hours. Examines the experience of racial and ethnic minorities, as well as women, in the post-Civil War South. Explores legal ramifications and tracks cultural and political legacies of landmark cases and/or legislative acts. (Typically offered: Fall)

PLSC 3223. Arkansas Politics and the Nation. 3 Hours.
An examination of Arkansas Politics including the political process, public policies, social problems, political behavior, governmental structure, and contemporary issues with an emphasis on the historical, regional, and national context. Prerequisite: PLSC 2003. (Typically offered: Spring)

\section*{PLSC 3233. The American Congress. 3 Hours.}

Thorough examination of the constitutional role of the legislative branch under the Constitution; the internal procedures and personalities of the Senate and House; the central place of Congress in shaping domestic and foreign policy. Prerequisite: PLSC 2003. (Typically offered: Fall)

PLSC 3243. The Judicial Process. 3 Hours.
The structure and operation of the state and national court systems. Emphasis is upon the role of the judiciary in the American political system and the political aspects and consequences of judicial decision-making. Prerequisite: PLSC 2003. (Typically offered: Fall)

\section*{PLSC 3253. Urban Politics. 3 Hours.}

Analysis of comparative urban systems, including political process, public policy, social problems, governmental structure, and voter behavior. Prerequisite:
PLSC 2003. (Typically offered: Spring)
PLSC 3263. Latino Politics. 3 Hours.
An overview of Latino political behavior that analyzes the social, economic, and political issues impacting the Latino/Hispanic community in the United States. The course focuses on understanding relationships of power and interaction within the institutional contexts that shape diverse Latino experiences. (Typically offered: Fall)

\section*{PLSC 3293. Black Politics. 3 Hours.}

This is a survey course is designed to provide students with a comprehensive overview of Black political participation in the United States and throughout the diaspora. In addition to analyzing important events in Black politics in the U.S., the course also examines evolving patterns of diasporic political participation throughout the world. Prerequisite: PLSC 2003. (Typically offered: Fall)
This course is cross-listed with AAST 3293.
PLSC 3393. Civil Rights Policy and Politics. 3 Hours.
This course will draw from linkages between the protest phase of the civil rights and American political institutions. The course explores the institutional impact of the civil rights movement on the presidency, congress, the courts, administrative regulatory agencies, and civil rights advisory organizations. Prerequisite: PLSC 3293. (Typically offered: Spring)
This course is cross-listed with AAST 3393.
PLSC 3503. Governments and Politics of East Asia. 3 Hours.
Comparative analysis of structures, processes, and problems of the political systems of the Democratic Republic of Vietnam, Japan, and the Peoples Republic of China. Prerequisite: PLSC 2013. (Typically offered: Fall)
This course is cross-listed with AIST 3503.
PLSC 3523. Politics of the Middle East. 3 Hours.
Survey of the unity and diversity in the political development of the Middle East, as evident in historical legacies, state formation, civil society, social class, and political identity. (Typically offered: Fall)

\section*{PLSC 3543. Introduction to Citizenship Studies. 3 Hours.}

Introduction to the field of citizenship studies with a focus on theoretical and empirical illustrations. Covers citizenship in the Middle East, Latin America, and contemporary Africa. Theoretically grounded in comparative politics, students should develop understanding of the complex debates and real-time challenges which shape this sub-field of political science. (Typically offered: Spring)

\section*{PLSC 3553. Western European Politics. 3 Hours.}

Comparative analysis of Western European parliamentary systems with special attention to political traditions, constitutional arrangements, socio-economic structure, and the political and legislative processes in countries such as Britain, France, and Germany. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Irregular)

\section*{PLSC 3573. Governments and Politics of Latin America. 3 Hours.}

Comparative survey of Latin America political forces and institutions with special attention to patterns and problems of political change and development in that area. Prerequisite: PLSC 2013. (Typically offered: Irregular)

PLSC 3603. Scope and Methods of Political Science. 3 Hours.
The basic principles and assumptions of political inquiry (methodology) and research techniques for gathering and analyzing data about political phenomena. Prerequisite: PLSC 2003. (Typically offered: Fall, Spring and Summer)

\section*{PLSC 3683. International Conflict and National Security Policy. 3 Hours.}

This course examines international conflict and national security policy. The first part of the course analyzes the causes and consequences of international conflict and mechanisms for conflict resolution. The second part examines the formulation and implementation of national security in comparative perspective and U.S. national security policy. Prerequisite: PLSC 2813. (Typically offered: Fall Even Years)

\section*{PLSC 3803. International Organization. 3 Hours.}

This course is about how state and non-state actors try to organize the international system to help manage crucial issues such as the development and use of force, the efficiency and fairness of markets, and the realization and protection of human rights and environmental health (Typically offered: Spring)
This course is cross-listed with INST 3803.

PLSC 3813. International Law. 3 Hours.
Analysis of the traditional principles of public international law including the law of war, the law of sea and air, and the legal nature of statehood; and analysis of selected principles of private international law relevant to such topics as the multinational corporation, international arbitration, commerce with Communist states, and the expropriation of foreign property. Prerequisite: Junior standing. (Typically offered: Fall)

PLSC 3823. Theories of International Relations. 3 Hours.
Analysis of major intellectual traditions in the field of international relations, including realism, liberalism, and social constructivism. Emphasis will be placed on how they help us to understand war, revolution, global capitalism, nationalism, peace, and other significant international phenomena. Prerequisite: PLSC 2003 and PLSC 2013. (Typically offered: Spring)

PLSC 3853. American Foreign Policy. 3 Hours.
The structure and process for making and implementing the foreign policy of the United States, and an evaluation of current policies in the contemporary international milieu. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Fall)
PLSC 390V. Special Topics. 1-3 Hour.
Special topics in political science. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{PLSC 3923H. Honors Colloquium. 3 Hours.}

Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy. (Typically offered: Irregular) May be repeated for degree credit.
PLSC 394V. Readings in Political Science. 1-3 Hour.
For advanced students who wish to study some field of political science beyond the course offering available in that field. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

PLSC 394VH. Honors Readings in Political Science. 1-3 Hour.
For advanced students who wish to study some field of political science beyond the course offering available in that field. Prerequisite: Junior standing and honors standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.
This course is equivalent to PLSC 394 V .
PLSC 3983. Politics in Literature. 3 Hours.
Analysis of political theories and issues through extensive reading and discussion of selected works of literature. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Spring)
PLSC 400V. Special Topics. 1-3 Hour.
Topics in political science not usually covered in other courses. (Typically offered: Irregular) May be repeated for degree credit.
PLSC 406V. Independent Study in Political Science. 1-3 Hour.
Independent study in political science. Arranged in agreement and under the guidance of a faculty member. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{PLSC 4083. Portrayals of Hitler in Film. 3 Hours.}

Introduction to the construction and deconstruction of Hitler's image in fictional movies produced in the United States, the United Kingdom, and Germany after 1945, through a lens of postmodern thought and cultural theory. (Typically offered: Irregular)

\section*{PLSC 4093. Politics and Policy on Film. 3 Hours.}

An examination of the ways in which politics, government, policymakers, and public policy issues are portrayed on film. Selections vary, but may include historic and contemporary works, independent films and blockbusters, fictional works, biopics, and documentaries. Heavy emphasis on independent research and informed discussion, focused on the context in which the works were made and the ways they were received by audiences. (Typically offered: Irregular)

PLSC 4103. Introduction to Urban Planning. 3 Hours.
Reviews the many forms, functions, and purposes of American cities. Covers basic planning theories, surveys the various sub-fields of planning, discusses trends in the planning field, and utilizes computer simulations. (Typically offered: Fall)

\section*{PLSC 4113. Introduction to Urban Planning II. 3 Hours.}

Advanced analysis of comparative urban systems, including political process, public policy, social problems, governmental structure, and voter behavior. Prerequisite: PLSC 4103 or instructor consent. (Typically offered: Irregular)

PLSC 4143. U.S. Environmental Politics and Policy. 3 Hours.
Surveys recent patterns of environmentalism in the U.S. and explores the nature of policy making with regard to environmental and economic development issues. Topics may include conservation vs. preservation, multiple use vs. sustainability, intergovernmental policy implementation, incentives, and free market environmentalism. Prerequisite: PLSC 2003. (Typically offered: Spring and Summer)

\section*{PLSC 4153. Public Policy. 3 Hours.}

A study of public policy formulation, implementation, and evaluation at various levels of government. Prerequisite: PLSC 2003. (Typically offered: Fall)

\section*{PLSC 4173. Community Development. 3 Hours.}

Encompasses the political, economic, and social issues that shape contemporary communities. This class examines substantive issues in community development, related theories and techniques. A major focus of the course will be on low-income and minority neighborhoods and efforts to create more inclusive communities in the United States and abroad. Prerequisite: Junior standing. (Typically offered: Fall)

\section*{PLSC 4183. The Evolution of Nonprofits and Philanthropy. 3 Hours.}

Introduction to the history of philanthropy. Examines philanthropy at the intersection of anthropological theories of giving, social theories related to types of capital and capital exchanges, and economic theories about the role of philanthropy for national economies. (Typically offered: Irregular)

\section*{PLSC 4193. Administrative Law. 3 Hours.}

Legal aspects of the administrative process and the effect of legal principles and processes upon administrative decision-making. Emphasis is given to the limitation of administrative discretion and the judicial review of administrative decisions. Prerequisite: PLSC 2003. (Typically offered: Spring)

\section*{PLSC 4203. American Political Parties. 3 Hours.}

The nature, function, and history of political parties in the United States with emphasis on party membership, organization, campaign techniques, finance and electoral alliances. Prerequisite: PLSC 2003. (Typically offered: Irregular)

\section*{PLSC 4213. Campaigns and Elections. 3 Hours.}

This course examines the American electoral process. It is an empirical course that provides opportunities for original analysis of survey data and election returns. Emphasis is placed on the most recent federal election. Prerequisite: PLSC 2003 (Typically offered: Irregular)

\section*{PLSC 4223. Gender and Justice in the U.S.. 3 Hours.}

Provide students with a historic and contemporary overview of the laws, policies, and politics surrounding gender, citizenship, and justice in the United States. Explores how law and public policy have affected the lives of marginalized sex and gender groups in the United States as well as the political dynamics surrounding gender and sexuality law. (Typically offered: Spring Odd Years)
This course is cross-listed with GNST 4223.

\section*{PLSC 4233. The American Chief Executive. 3 Hours.}

Offices and roles of the President and state governors of the United States focusing on the evolution of the offices in terms of responsibilities and political leadership. Prerequisite: PLSC 2003. (Typically offered: Spring)

\section*{PLSC 4243. Minority Politics. 3 Hours.}

Reviews political action and concepts of political activity by minority groups, focusing on contemporary political behavior. Prerequisite: PLSC 2003. (Typically offered: Spring)

PLSC 4253. The U.S. Constitution I. 3 Hours.
United States Supreme Court decisions involving the functions and powers of Congress, the Supreme Court, and the President and federalism. Prerequisite: PLSC 2003. (Typically offered: Spring)

\section*{PLSC 4263. The U.S. Constitution II. 3 Hours.}

United States Supreme Court decisions interpreting the political, economic, and civil rights of individuals and groups. Prerequisite: PLSC 2003. (Typically offered: Irregular)

\section*{PLSC 4273. Political Psychology. 3 Hours.}

Examines role of the individual in the polity including basic psychological constructs of relevance to political action, the formulation and maintenance of stable political orientations, the patterns linking the individual to the polity, and major modes of inquiry. Prerequisite: PLSC 2003. (Typically offered: Irregular)

\section*{PLSC 4283. Federalism and Intergovernmental Relations. 3 Hours.}

Analysis of changes in intergovernmental relations in the American federal system. Discussions will focus on political, economic/fiscal and administrative aspects of policy changes of the pre-and post-Reagan eras. (Typically offered: Spring Even Years)

PLSC 4303. History of Political Parties in the U.S. 1789-1896. 3 Hours.
Origin and development of the American party system from the implementation of the Constitution to the election of McKinley. (Typically offered: Fall Even Years) This course is cross-listed with HIST 4503.

PLSC 4313. History of Political Parties in the United States Since 1896. 3 Hours.
Response of the party system to America's emergence as an industrial nation and world power from the election of 1896 to present. (Typically offered: Spring Odd Years)
This course is cross-listed with HIST 4513.
PLSC 4323. Racial Identity, Politics, and Public Policy. 3 Hours.
Examines how race and perceived racial differences affect political discourse, mobilization, representation, and political outcomes. Prerequisite: PLSC 3293 or AAST 1003 or Junior standing. (Typically offered: Spring Even Years) This course is cross-listed with AAST 4323.

\section*{PLSC 4333. Southern Politics. 3 Hours.}

Evaluates the significance of the southern region within the national political scene, as well as discusses the unique political history and workings of the region. Explores the various groups within the region that continue to fight for political influence and power. (Typically offered: Spring)

PLSC 4343. Money and Politics. 3 Hours.
Familiarizes students with the world of money and politics in the United States. Examines the function of money in elections, the legal aspects, and the consequences of the regulatory environment. Provides a means to gain analytic computer skills and a strong foundation for further study of political science (Typically offered: Fall)

PLSC 4373. Political Communication. 3 Hours.
Study of the nature and function of the communication process as it operates in the political environment. (Typically offered: Spring Even Years)
This course is cross-listed with COMM 4373.
PLSC 4513. Creating Democracies. 3 Hours.
Analyses of the creation of democracies in Europe, South America, Asia, Africa, the Middle East, East Europe, and the former Soviet Union. Prerequisite: PLSC 2013. (Typically offered: Fall Even Years)

PLSC 4523. Introduction to Gender and Politics in the Middle East. 3 Hours. Introduces the complexities of women's political lives in the Middle East by studying gender roles, relations and how identities are constructed during different political moments. (Typically offered: Fall)

PLSC 4533. China's Foreign Trade and International Order: History, Policy, and Theory. 3 Hours.
This interdisciplinary course explores China's foreign trade and international order by introducing students to the historical context and economic theory necessary for understanding China's role in the international trading system from the ancient past to the contemporary era. (Typically offered: Irregular)

PLSC 4563. Government and Politics of Russia. 3 Hours.
Study of Russian and Soviet politics after 1917 and of the democratization of Russia and the other successor states. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Spring Even Years)

\section*{PLSC 4573. Gender and Politics. 3 Hours.}

Examines the significance of gender in politics. Includes discussion of the women's movement and feminist theory, but emphasizes the content and process of public policy as it relates to women and men. Focus is on the U.S. but final third is devoted to comparative topics. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Irregular)

PLSC 4583. Political Economy of East Asia. 3 Hours.
Development strategies and policies of major economies in East Asia. Topics include theories for East Asia's economic growth, dynamics and process of East Asian political and economic developments, strengths and limits of the East Asian development model, Asian values and their implications for Asian-style democracy, and dynamics of regional cooperation. (Typically offered: Spring)

\section*{PLSC 4593. Islam and Politics. 3 Hours.}

Compares contemporary Islamist political movements. Seeks to explain causes, debates, agendas, and strategies of Islamists in the political realm. Addresses sovereignty, the rule of law, visions of the good state and society, and relations between nationalism, religion and political development. Focus on Middle East with comparative reference to other cases. (Typically offered: Fall)

\section*{PLSC 4613. Social Network Analysis. 3 Hours.}

Introduces the fundamentals of Social Network Analysis (SNA), and its applications for research in various social science fields. Prerequisite: SOCI 2013. (Typically offered: Fall)
This course is cross-listed with SOCI 4183.
PLSC 4633. Citizenship in the Middle East. 3 Hours.
Explores citizenship in the Middle East and North Africa (MENA) with a focus on theoretical and empirical illustrations. Theoretically grounded in comparative politics, and empirically engaged with case studies on citizenship formation, students will develop an understanding of the complex debates and challenges which shape this sub-field of political science. (Typically offered: Fall Odd Years)

PLSC 4793. Latino/Hispanic Political Thought. 3 Hours.
A survey course designed to examine the development of Latino/Hispanic political thought from Iberian and Latin American political culture and philosophy to contemporary US political ideology/thought. (Typically offered: Spring)

\section*{PLSC 4793H. Honors Latino/Hispanic Political Thought. 3 Hours.}

A survey course designed to examine the development of Latino/Hispanic political thought from Iberian and Latin American political culture and philosophy to contemporary US political ideology/thought. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to PLSC 4793
PLSC 4803. Foreign Policy Analysis. 3 Hours.
Comparative analysis of foreign policy, with attention paid to explanations at a variety of levels, such as the individual, group, organizational, societal, systemic. (Typically offered: Irregular)

\section*{PLSC 4813. Chinese Foreign Policy. 3 Hours.}

Provides an introduction to Chinese foreign policy. Key topics covered include the historical, domestic, and international contexts of Chinese foreign policy, China's relations with key partner countries, security strategies, foreign economic relations, and evolving role in global governance. (Typically offered: Fall)

\section*{PLSC 4823. Foreign Policy of East Asia. 3 Hours.}

This course provides an introduction to the international relations of two major East Asian states, China and Japan. Key topics include: China and Japan's interaction with the world political and economic systems; domestic sources of international behavior and major dimensions of foreign policy in the 1980s and 1990s. (Typically offered: Spring)
This course is cross-listed with AIST 4823.
PLSC 4833. International Political Economy. 3 Hours.
This course provides an analysis of the interaction between politics and markets in the world economy. Its central objective is to illustrate how political and state actions have shaped and been shaped by the development of the global economy. (Typically offered: Fall)

\section*{PLSC 4843. The Middle East in World Affairs. 3 Hours.}

An analysis of geo-political and socio-economic characteristics of Middle Eastern societies and their impact on world economic and political order. Special attention to such issues as the Arab-Israeli conflict, the promotion of lasting peace in the region, impact of oil on world politics, the involvement of superpowers, rehabilitation of Palestinian refugees and the role of the United Nations. (Typically offered: Spring)
PLSC 4853. International Norms and Corporate Social Responsibility. 3 Hours. This course focuses on the interplay between international social expectations and business strategy. How norms prevail and why norms emerge will be observed from a business vantage point. Pre- or corequisite: PLSC 2003 or PLSC 2013. (Typically offered: Spring)

PLSC 4863. Political Psychology and International Relations. 3 Hours. Examines psychological approaches to international relations and examines how these perspectives advance the study of world politics. (Typically offered: Irregular)

PLSC 4883. Politics of International Law. 3 Hours.
This course examines the interaction between law and politics in the international system, focusing on international law. (Typically offered: Irregular)
PLSC 4893. International Negotiation and Mediation. 3 Hours.
This course examines international negotiations and mediation. International negotiation refers to the processes and methods by which state and non-state actors reach agreements through persuasion and similar non-violent means. This course analyzes the processes, methods, and mechanisms, and challenges of international negotiations and the growing use of mediation. (Typically offered: Irregular) This course is cross-listed with INST 4893.
PLSC 4913. International Studies Seminar. 3 Hours.
Intensive study of key global issues and aspects of international affairs, culminating in a research project that meets the Fulbright College writing requirement. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit. This course is equivalent to INST 4913.

\section*{PLSC 4913H. Honors International Studies Seminar. 3 Hours.}

Intensive study of key global issues and aspects of international affairs, culminating in a research project that meets the Fulbright College writing requirement.
Prerequisite: Honors standing. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to INST 4913.

\section*{PLSC 4933. African American Political Ideology. 3 Hours.}

A survey course designed to identify and examine characteristics and functions of several variants of black political ideology/thought. (Typically offered: Spring Odd Years)
This course is cross-listed with AAST 4933.
PLSC 498V. Senior Thesis. 1-6 Hour.
Senior Thesis. (Typically offered: Fall, Spring and Summer)
PLSC 499VH. Honors Essay. 1-6 Hour.
To be used for completing a Political Science Honors Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

PLSC 500V. Special Topics. 1-3 Hour.
Topics in political science not usually covered in other courses. Graduate degree credit will not be given for both PLSC 400 V and PLSC 500V. (Typically offered: Irregular) May be repeated for degree credit.

\section*{PLSC 5053. Creating Democracies. 3 Hours.}

Analyses of the creation of democracies in Europe, South America, Asia, Africa, the Middle East, East Europe, and the former Soviet Union. Graduate degree credit will not be given for both PLSC 4513 and PLSC 5053. Prerequisite: PLSC 2013. (Typically offered: Fall Even Years)

\section*{PLSC 5083. The Middle East in World Affairs. 3 Hours.}

An analysis of geo-political and socio-economic characteristics of Middle Eastern societies and their impact on world economic and political order. Special attention to such issues as the Arab-Israeli conflict, the promotion of lasting peace in the region, impact of oil on world politics, the involvement of superpowers, rehabilitation of Palestinian refugees and the role of the United Nations. (Typically offered: Spring)

\section*{PLSC 5103. Human Behavior in Complex Organizations. 3 Hours.}

Review of the fundamental literature and a systematic analysis of various theories and research focusing on organization and behavior in public administration, including the discussion of organizational development, human motivation, leadership, rationality, efficiency and conflict management in public organizations. Prerequisite: Graduate standing. (Typically offered: Spring Odd Years; Summer)
PLSC 5113. Seminar in Human Resource Management. 3 Hours.
Intensive study of public personnel policies and practices, including legal foundations, classification and compensation plans, recruitment and selection processes, training, employment policies and morale, employee relations and organization. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{PLSC 5123. Public Budgeting and Finance. 3 Hours.}

Focuses on the budgeting process and governmental fiscal policy formulation, adoption, and execution. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{PLSC 5133. Nonprofit Management. 3 Hours.}

This course provides an overview of the principal management functions in public and nonprofit organizations. Topics include financial management, HR development, program development. The relationships among volunteer boards of trustees, fund raising, public relations, and program personnel are analyzed, and the complex environments with service sector agencies are explored. (Typically offered: Fall)

PLSC 5143. Administrative Law. 3 Hours.
A seminar which examines the constitutional and statutory basis and authority of public organizations. Special attention focuses on the nature of the rule-making and adjudicatory powers of public agencies and on executive, legislative, and judicial restraints on such activities. Also considered are the role, scope, and place of public regulatory activities. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{PLSC 5163. Public Policy. 3 Hours.}

Seminar examining the study of public policy making in complex organizations. Attention given to different theories and frameworks explaining public policy making. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{PLSC 5173. Community Development. 3 Hours.}

Community development encompasses the political, social, and economic issues that shape contemporary communities. The seminar examines substantive issues in community development, related theories, and techniques. A major focus of the course will be on low-income and minority neighborhoods and efforts to create more inclusive communities in the U.S. and abroad. (Typically offered: Fall)

\section*{PLSC 5193. Seminar in Public Administration. 3 Hours.}

Introduction to and synthesis of public administration theory, functions, history, public accountability and management concerns, economic impact of administrative decisions, current problems, and issues in the public sector. Prerequisite: Graduate standing. (Typically offered: Fall)

PLSC 5203. Seminar in American Political Institutions. 3 Hours.
Research seminar dealing with selected aspects of the major governmental institutions in the United States. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{PLSC 5213. Seminar in American Political Behavior. 3 Hours.}

Reading seminar surveying major works on representative processes in American national politics, including political opinion, political leadership, political participation, voting behavior, political parties, and interest groups. Prerequisite: Graduate standing. (Typically offered: Spring)

PLSC 5253. Politics of Race and Ethnicity. 3 Hours.
Reviews identity, political action and concepts of political activity by minority groups, focusing on contemporary political behavior, the incorporation of minority groups into the U.S. political system. (Typically offered: Irregular)

\section*{PLSC 5283. Federalism and Intergovernmental Relations. 3 Hours.}

Analysis of changes in intergovernmental relations in the American federal system. Discussions will focus on political, economic/fiscal and administrative aspects of policy changes of the pre-and post-Reagan eras. Graduate degree credit will not be given for both PLSC 4283 and PLSC 5283. (Typically offered: Spring Even Years)

PLSC 5333. Southern Politics. 3 Hours.
Evaluates the significance of the southern region of the United States within the national political scene, as well as discusses the unique political history and workings of the region. Explores the various groups within the region that continue to fight for political influence and power. (Typically offered: Spring)

\section*{PLSC 5373. Political Communication. 3 Hours.}

Study of the nature and function of the communication process as it operates in the political environment. Graduate degree credit will not be given for both PLSC 4373 and PLSC 5373. (Typically offered: Spring Even Years)

PLSC 5503. Comparative Political Analysis. 3 Hours.
A selection of topics to provide the theoretical, conceptual and methodological and foundation for the analysis of contemporary political systems. Prerequisite: Graduate standing. (Typically offered: Fall)

PLSC 5513. Seminar in Politics of the Middle East. 3 Hours.
Explores the major lines of inquiry on the politics of the state and society in the context of endogenous and exogenous forces that have influenced conceptions of power, legitimacy, and identity. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{PLSC 5563. Government and Politics of Russia. 3 Hours.}

Study of Russian and Soviet politics after 1917 and of the democratization of Russia and the other successor states. Graduate degree credit will not be given for both PLSC 4563 and PLSC 5563. Prerequisite: PLSC 2003 or PLSC 2013. (Typically offered: Spring Even Years)

PLSC 5583. Political Economy of East Asia. 3 Hours.
Development strategies and policies of major economies in East Asia. Topics include theories for East Asia's economic growth, dynamics and process of East Asian political and economic developments, strengths and limits of the East Asian development model, Asian values and their implications for Asian-style democracy, and dynamics of regional cooperation. Graduate degree credit will not be given for both PLSC 4583 and PLSC 5583. (Typically offered: Spring)

PLSC 5803. Seminar in International Politics. 3 Hours.
Research seminar providing intensive coverage of selected topics in theories of international relations, the comparative study of foreign policy making, and international organizations. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{PLSC 5823. Qualitative Methods in Political Science. 3 Hours.}

Develops expertise in qualitative research methods, including when such methods are appropriate, the benefits and drawbacks, and how to distinguish between strong and weak research questions. (Typically offered: Spring Even Years)

PLSC 5833. International Political Economy. 3 Hours.
Seminar with concentrated reading in selected and specialized areas of contemporary international relations. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{PLSC 5843. International Legal Order. 3 Hours.}

Analysis of distinctive characteristics of contemporary international law. Topics include role of legal order in controlling the use of force in international relations and the impact of social and political environment on growth of international law and relations among international political systems. Prerequisite: Graduate standing. (Typically offered: Fall)

PLSC 5863. Political Psychology and International Relations. 3 Hours.
Examines psychological approaches to international relations and examines how these perspectives advance the study of world politics. (Typically offered: Irregular)

PLSC 5873. Inter-American Politics. 3 Hours.
An analysis of the political themes, regional organization, and hemispheric relations that constitute the inter-American system, with special emphasis on conflict and cooperation in the hemispheric policies of the American republics. (Typically offered: Irregular)

PLSC 5883. Politics of International Law. 3 Hours.
This course examines the interaction between law and politics in the international system, focusing on international law. (Typically offered: Irregular)

PLSC 590V. Directed Readings in Political Science. 1-3 Hour.
Directed readings in Political Science. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

PLSC 5913. Research Methods in Political Science. 3 Hours.
Methods relevant to research in the various fields of political science. Required of all graduate students in political science. Prerequisite: Graduate standing. (Typically offered: Fall)

PLSC 592V. Internship in Political Science. 1-6 Hour.
Internship in a local, state, regional, or federal agency. Paper required on a significant aspect of internship experience. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

PLSC 5943. Advanced Research Methods in Political Science. 3 Hours.
Provides a firm theoretical foundation in, and an ability to apply, various multivariate statistical methods that are most commonly used for empirical analysis of politics and policy. Prerequisite: PLSC 5913 or equivalent. (Typically offered: Fall)

PLSC 595V. Research Problems in Political Science. 1-3 Hour.
Research problems in Political Science. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{PLSC 5993. African American Political Ideology. 3 Hours.}

A survey course designed to identify and examine characteristics and functions of several variants of black political ideology/thought. (Typically offered: Spring Odd Years)

PLSC 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{PLSC 6963. Visualizing Critical Race Theory. 3 Hours.}

An examination of critical theoretical approaches to the concepts of race and racism. Students will examine the ways in which these constructs perform a critical function in the construction of race(s) and racism(s) and their relevance to visual culture. (Typically offered: Fall and Spring)
This course is cross-listed with ARED 6963, AAST 6963.

\section*{Portuguese (PORT)}

\section*{Courses}

PORT 1003. Elementary Portuguese I. 3 Hours.
An introduction to basic Portuguese grammar with emphasis on listening comprehension and speaking skills. (Typically offered: Irregular)

\section*{PORT 1013. Elementary Portuguese II. 3 Hours.}

A continuation of PORT 1003. Prerequisite: PORT 1003 or equivalent. (Typically offered: Irregular)

PORT 1103. Portuguese for Romance Language Speakers I. 3 Hours.
This is the first course of a two-semester program to help Romance language speakers to develop their communicative skills in Portuguese. For students who have completed four semesters or more of Spanish, French, or Italian (2013 level or equivalent). Prerequisite: One of the following: SPAN 2013, FREN 2013, or ITAL 2013, or Native speakers must request approval from instructor. (Typically offered: Fall)

\section*{PORT 2003. Intermediate Portuguese I. 3 Hours.}

Review of basic grammar and further development of oral and reading skills. Prerequisite: PORT 1013 or equivalent. (Typically offered: Irregular)

\section*{PORT 2013. Intermediate Portuguese II. 3 Hours.}

Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. Prerequisite: PORT 2003 or equivalent. (Typically offered: Irregular)

PORT 2103. Portuguese for Romance Language Speakers II. 3 Hours.
This is the second course of a two-semester program to help Romance language speakers to develop their communicative skills in Portuguese. For students who have completed PORT 1103 Portuguese for Romance Language Speakers I. Prerequisite: PORT 1103 or equivalent. (Typically offered: Spring)

\section*{PORT 3003. Portuguese Conversation. 3 Hours.}

Continuation of the development of communicative skills in Portuguese with intensive readings on topics of Luso-Afro-Brazilian culture and expansion of vocabulary useful for conversation and composition. Prerequisite: PORT 2013 or PORT 2103 or equivalent. (Typically offered: Irregular)
PORT 3013. Brazilian Cinema. 3 Hours.
Examines a variety of topics in Brazilian culture and history through films, documentaries, and literary and cultural texts. Prerequisite: PORT 3003 or equivalent. (Typically offered: Irregular)

\section*{PORT 3013H. Honors Brazilian Cinema. 3 Hours.}

Examines a variety of topics in Brazilian culture and history through films, documentaries, and literary and cultural texts. Prerequisite: Honors candidacy and PORT 3003 or equivalent. (Typically offered: Irregular)
This course is equivalent to PORT 3013.
PORT 3203. Brazilian Cultural and Social Issues. 3 Hours.
Provides different perspectives on the elements that shape contemporary Brazilian culture and society, focusing on issues of race, class, gender, and sexuality. Taught in English. Prerequisite: Sophomore standing. (Typically offered: Irregular)
PORT 3203H. Honors Brazilian Cultural and Social Issues. 3 Hours.
Provides different perspectives on the elements that shape contemporary Brazilian culture and society, focusing on issues of race, class, gender, and sexuality. Prerequisite: Honors candidacy and PORT 3003 or equivalent. (Typically offered: Irregular)
This course is equivalent to PORT 3203.

\section*{Poultry Science (POSC)}

\section*{Courses}

POSC 1003. Introduction to Poultry Science. 3 Hours.
To introduce the student to the career opportunities in the poultry science industry. Students will be introduced to biological sciences associated with poultry. Corequisite: Lab component. (Typically offered: Fall)

POSC 1062. Sustainable Integrated Small Animal Farming. 2 Hours.
Practical information on small scale animal production, including practical strategies for farm planning, issues of economic and environmental sustainability, best management practices, biosecurity, disease prevention, and farm safety will be presented. (Typically offered: Spring)
This course is cross-listed with ANSC 1062.
POSC 2343. Poultry Production. 3 Hours.
To develop a basic foundation about the practices utilized to produce broilers and turkeys. Course will highlight hatchery function and management; embryo development and hatching; chick/poultry transportation, preparation and maintenance of facilities for rearing birds, bird environment, nutrition, and health. Also to be covered are the different roles associated with live production in an integrated company. Corequisite: Lab component. (Typically offered: Fall)

POSC 2353. Poultry Breeder Management. 3 Hours.
Students will be introduced to the management practices used in production of young and adult chickens, turkeys, and other poultry with special emphasis on broiler, breeder, and market egg production. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. (Typically offered: Spring)
POSC 2411L. Domestic Animal Microbiology Laboratory. 1 Hour.
This course is designed for students working on their Poultry Science, Animal Science, and/or Food Science degrees. Students enrolled in this course will learn how to collect samples aseptically from live birds and meat samples, transport samples, and culture samples on a variety of different microbiological media. In addition, students will have the opportunity to visit one of the microbiology labs in the local poultry production facilities. Students will learn how to handle samples, stain bacterial cells, and identify unknown bacteria from field samples. A lab period will be assigned to teaching students on how to use bacteria in food production by teaching students how to prepare and sample yogurt. Corequisite: POSC 2413. (Typically offered: Fall)
This course is cross-listed with ANSC 2411L.

\section*{POSC 2413. Domestic Animal Microbiology. 3 Hours.}

Basic concepts of domestic animal and poultry microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Prerequisite: (BIOL 1543 and BIOL 1541L) and (CHEM 1073 or CHEM 1103 or CHEM 1123). Corequisite: POSC 2411L. (Typically offered: Fall)
This course is cross-listed with ANSC 2413.
POSC 3013. Exotic Companion Birds. 3 Hours.
Topics include basic care, health, breeding, bird evolution, anatomy, and nutritional management of commonly kept exotic companion birds, including parrots, cockatoos, macaws, finches, canaries, and pigeons. Discussion will include housing and care for individual pet birds and large scale breeding and production. Lecture/ discussion 3 hours per week. Prerequisite: BIOL 1543. (Typically offered: Fall Odd Years)
POSC 3033. Animal Physiology. 3 Hours.
Fundamental aspects of central nervous, musculoskeletal, reproductive, digestive, immune, cardiovascular, respiratory and renal systems will be covered. The normal structure and function of these systems will be emphasized. Lecture 3 hours per week. Prerequisite: BIOL 1543 and (CHEM 1123 or CHEM 1073). (Typically offered: Spring)
This course is equivalent to ANSC 3033.

POSC 3123. Principles of Genetics. 3 Hours.
Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher. (Typically offered: Fall)

This course is cross-listed with ANSC 3123.
POSC 3223. Poultry Diseases. 3 Hours.
Common diseases affecting poultry reared under commercial conditions will be covered including diagnosis, therapy and prevention. Immunity, sanitation practices and chemoprophylaxis will also be covered. Lecture 3 hours per week with some demonstrations, slides and videotapes. Prerequisite: ((BIOL 2013 and BIOL 2011L) or (POSC 2413 and POSC 2411L)), and junior standing. (Typically offered: Spring)

\section*{POSC 3381. Poultry Judging and Selection. 1 Hour}

Practice in production judging and flock selection. Laboratory 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

POSC 3513. Current Approaches in Agricultural Laboratory Research. 3 Hours.
A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543. (Typically offered: Spring Even Years)
This course is cross-listed with POSC 3513H, ANSC 3513H.

\section*{POSC 3513H. Honors Current Approaches in Agricultural Laboratory} Research. 3 Hours.
A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543. (Typically offered: Spring Even Years)
This course is cross-listed with ANSC 3513H.
POSC 3554. Avian Anatomy. 4 Hours.
Detailed coverage of the external and internal anatomy of poultry, including formation and development of the egg and embryo. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1543. (Typically offered: Fall)

POSC 400V. Special Problems. 1-9 Hour.
Special problems in the poultry sciences for advanced students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

\section*{POSC 401V. Internship in Poultry Science. 1-6 Hour.}

Supervised work experience with private or government organizations to introduce students to professional areas of work in poultry science. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit

\section*{POSC 402V. Research Experience. 1-6 Hour.}

An undergraduate research experience should familiarize students with the research process and expand their knowledge in areas of poultry science through scientific literature searches and hands-on experiential learning. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

POSC 4033. Statistical Process Control in the Food Industry. 3 Hours.
Analysis of processing data related to compliance with regulatory limits, quality \& safety limits and internal \& external customer specifications. Emphasizes statistical process control chart development, including understanding data and chart selection, calculating statistical limits, and interpreting process performance. Prerequisite: Instructor consent. (Typically offered: Irregular)

POSC 410V. Special Topics in Poultry Science. 1-4 Hour.
Topics not covered in other courses or for a more intensive study of specific topics in poultry science. (Typically offered: Irregular) May be repeated for degree credit.

POSC 4123. Legal Issues in Animal Agriculture. 3 Hours.
An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation from local to state to federal, depending on the issue will be studied and discussed. (Typically offered: Spring Odd Years)
This course is cross-listed with AGEC 4123, ANSC 4123.

\section*{POSC 4163. Companion Animal Nutrition. 3 Hours.}

This course is designed to focus on the digestive anatomy, physiology, and nutrient metabolism of non-herbivorous companion animals, primarily dogs and cats. Topics discussed will also include an overview of the pet food industry, its regulations and commonly utilized ingredients. Students will gain a deeper understanding of nutrition as it relates to life stages and various disease states that can affect both dogs and cats. This course will require a Saturday trip to one or two off campus facilities. Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Spring)
This course is cross-listed with ANSC 4163.
POSC 4213. Integrated Poultry Management Systems. 3 Hours.
Major managerial systems in the integrated commercial poultry industry. Development of an understanding of the basic decision making processes of poultry companies and the factors influencing those decisions. Prerequisite: POSC 2353 and AGEC 1103 and AGEC 2303. (Typically offered: Spring)

\section*{POSC 4233. Value Added Muscle Foods. 3 Hours.}

An intense study of muscle structure and how it relates to the development of further processed meat products. Muscle ultrastructure, protein functionality, product development, and quality analysis will be covered. In class hands on activities will also be included to allow students to obtain experience of producing processed meat products. Prerequisite: POSC 4314. (Typically offered: Spring Odd Years)

\section*{POSC 4314. Egg and Meat Technology. 4 Hours.}

Study of the science and practice of processing poultry meat and egg products; examination of the physical, chemical, functional and microbiological characteristics of value added poultry products; factors affecting consumer acceptance and marketing of poultry products and the efficiency of production. Corequisite: Lab component. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1073 and CHEM 1071L) and BIOL 1543 and BIOL 1541L. (Typically offered: Fall)

POSC 4343. Poultry Nutrition. 3 Hours.
Principles of nutrition as applied to the formulation of practical chicken and turkey rations. Lecture 3 hours per week. Prerequisite: CHEM 2613 or CHEM 3603 and junior standing. (Typically offered: Spring)

POSC 4613. Muscle Growth and Development. 3 Hours.
This is an undergraduate level course offering detailed insights into skeletal muscle morphological, physiological, cellular, and molecular factors affecting muscle structure and function, with special emphasis on cellular and molecular regulation of muscle growth and development, such as myo-, fibro-, and adipo-genesis. And the relationship between the properties of skeletal muscle and meat quality. ANSC 3033 and(or) CHEM 3813 are recommended as a prerequisite(s). (Typically offered: Fall) This course is cross-listed with ANSC 4613.

POSC 4801. Seminar: Research Topics. 1 Hour.
Required by all poultry science majors. Prerequisite: Junior or Senior standing and COMM 1313. (Typically offered: Spring Odd Years)

POSC 4811. Seminar: Professionalism. 1 Hour.
Addressing issues associated with preparation for finding and retaining your first job in the poultry industry. Lecture 1 hour per week. Prerequisite: Junior or Senior standing. (Typically offered: Fall Odd Years)

POSC 4821. Seminar: Problem Solving. 1 Hour
Real world problem solving of poultry production systems. Lecture 1 hour per week. Prerequisite: Junior/ senior standing. (Typically offered: Spring Even Years)

POSC 4831. Seminar: Processing Regulations. 1 Hour.
Processing plant procedures and regulations with an emphasis on problem solving. Lecture 1 hour per week. Prerequisite: Junior or senior standing. (Typically offered: Fall Even Years)

\section*{POSC 4923. Brain and Behavior. 3 Hours.}

Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory and autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3033 or POSC 3033) or PSYC 2003, or BIOL 2213, or BIOL 2443, or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with ANSC 4923.
POSC 500V. Special Problems. 1-6 Hour.
Work in special problems of poultry industry. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

POSC 5033. Statistical Process Control in the Food Industry. 3 Hours. Analysis of processing data related to compliance with regulatory limits, quality and safety limits and internal and external customer specifications. Emphasizes statistical process control chart development, including understanding data and chart selection, calculating statistical limits, and interpreting process performance. Graduate degree credit will not be given for both POSC 4033 and POSC 5033. Prerequisite: Instructor consent. (Typically offered: Irregular)
POSC 510V. Special Topics in Poultry Sciences. 1-4 Hour.
Topics not covered in other courses or a more intensive study of specific topics in poultry science. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{POSC 5113. Food Toxicology and Contaminants. 3 Hours.}

During this course, the student will learn basic concepts of food toxicology, study the different physiological processes involved in food borne intoxications, and learn about potential health problems associated with exposure to these compounds. Prerequisite: Graduate study. (Typically offered: Irregular)

POSC 5123. Advanced Animal Genetics. 3 Hours.
Specialized study of animal genetics. Lecture 3 hours per week. Prerequisite: POSC 3123 or ANSC 3123. (Typically offered: Fall Even Years)
This course is cross-listed with ANSC 5123.
POSC 5143. Biochemical Nutrition. 3 Hours.
Interrelationship of nutrition and physiological chemistry; structure and metabolism of physiological significant carbohydrates, lipids, and proteins; integration of metabolism with provision of tissue fuels; specie differences in regulatory control of tissue and whole body metabolism of nutrients. Prerequisite: CHEM 3813. (Typically offered: Fall Even Years)
This course is cross-listed with ANSC 5143.
POSC 5152. Protein and Amino Acid Nutrition. 2 Hours.
Students will be introduced to the basic processes of protein digestion, amino acid absorption, transport, metabolism, and utilization along with how biochemical function of proteins and their dynamic state affect nutritional status for animals and man. Prerequisite: CHEM 3813. (Typically offered: Spring Even Years)
This course is cross-listed with ANSC 5152.

\section*{POSC 5163. Companion Animal Nutrition. 3 Hours.}

This course is designed to focus on the digestive anatomy, physiology, and nutrient metabolism of non-herbivorous companion animals, primarily dogs and cats. Topics discussed will also include an overview of the pet food industry, its regulations and commonly utilized ingredients. Students will gain a deeper understanding of nutrition as it relates to life stages and various disease states that can affect both dogs and cats. This course will require a Saturday trip to one or two off campus facilities. Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Spring) This course is cross-listed with ANSC 5163.

POSC 5213. Integrated Poultry Management Systems. 3 Hours.
Major managerial systems in the integrated commercial poultry industry. Development of an understanding of the basic decision making processes of poultry companies and the factors influencing those decisions. Graduate degree credit will not be given for both POSC 4213 and POSC 5213. Prerequisite: POSC 2353 and AGEC 1103 and AGEC 2303. (Typically offered: Fall)

\section*{POSC 5233. Value Added Muscle Foods. 3 Hours.}

An intense study of muscle structure and how it relates to the development of further processed meat products. Muscle ultrastructure, protein functionality, product development, and quality analysis will be covered. In class hands on activities will also be included to allow students to obtain experience of producing processed meat products. (Typically offered: Spring Even Years)

POSC 5243. Legal Issues in Animal Agriculture. 3 Hours.
An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation from local to state to federal, depending on the issue will be studied and discussed. Graduate degree credit will not be given for both POSC 4123 and POSC 5243. (Typically offered: Spring Odd Years)

\section*{POSC 5254. Egg and Meat Technology. 4 Hours.}

Study of the science and practice of processing poultry meat and egg products; examination of the physical, chemical, functional and microbiological characteristics of value added poultry products; factors affecting consumer acceptance and marketing of poultry products and the efficiency of production. Graduate degree credit will not be given for both POSC 4314 and POSC 5254. Corequisite: Lab component. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1073 and CHEM 1071L) and BIOL 1543 and BIOL 1541L. (Typically offered: Fall)

\section*{POSC 5313. Domestic Animal Bacteriology. 3 Hours.}

A study of bacteria pathogenic for domestic animals. Lecture 3 hours per week. (Typically offered: Fall)

\section*{POSC 5343. Advanced Immunology. 3 Hours.}

Aspects of innate, cell-mediated, and humoral immunity in mammalian and avian species. Molecular mechanisms underlying the function of the immune system are emphasized. A course in Basic Immunology prior to enrollment in Advanced Immunology is recommended but not required. Lecture 3 hours per week. (Typically offered: Spring)
This course is cross-listed with BIOL 5343.
POSC 5352L. Immunology in the Laboratory. 2 Hours.
Laboratory course on immune-diagnostic laboratory techniques and uses of antibodies as a research tool. Included are cell isolation and characterization procedures, immunochemistry, flow cytometry, ELISA and cell culture assay systems. Laboratory 6 hours per week. Prerequisite: POSC 5343 or BIOL 5343 or BIOL 4713. (Typically offered: Spring)
This course is cross-listed with BIOL 5352L.
POSC 5443. Poultry Nutrition. 3 Hours.
Principles of nutrition as applied to the formulation of practical chicken and turkey rations. Lecture 3 hours per week. Graduate degree credit will not be given for both POSC 4343 and POSC 5443. Prerequisite: CHEM 2613 or CHEM 3603. (Typically offered: Spring)

POSC 5613. Muscle Growth and Development. 3 Hours.
This is a graduate level course offering detailed insights into skeletal muscle morphological, physiological, cellular and molecular factors affecting muscle structure and function, with special emphasis on cellular and molecular regulation of muscle growth and development, such as myo-, fibro-, and adipo-genesis. And the relationship between the properties of skeletal muscle and meat quality. Graduate students will focus on the scientific reading, problem solving, and generating research ideas. ANSC 3033, CHEM 3813 or ANSC 5143 or an equivalent course are recommended as a prerequisite. (Typically offered: Fall)
This course is cross-listed with ANSC 5613.
POSC 5742. Advanced Poultry Diseases. 2 Hours.
An in-depth coverage of the most important diseases of poultry with a focus on understanding mechanisms of pathogenesis, diagnostic techniques and principles of prevention. Lecture/discussion 2 hours per week. Prerequisite: POSC 3223. (Typically offered: Spring Odd Years)

POSC 5743L. Advanced Analytical Methods in Animal Sciences Laboratory. 3 Hours.
Introduction into theory and application of current advanced analytical techniques used in animal research. Two 3-hour laboratory periods per week. (Typically offered: Fall)
This course is cross-listed with ANSC 5743L.
POSC 5873. Molecular Analysis of Foodborne Pathogens. 3 Hours.
Course topics will include molecular detection and identification of foodborne pathogens, the molecular response of foodborne pathogens to their environments, functional genomic approaches, and analysis of complex microbial communities. Lecture/discussion 3 hours per week. (Typically offered: Fall)

POSC 5901. Graduate Seminar. 1 Hour.
Critical review of the current scientific literature pertaining to the field of poultry science. Oral reports. Recitation 1 hour per week. Prerequisite: Senior standing. (Typically offered: Fall and Spring)

POSC 5923. Brain and Behavior. 3 Hours.
Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory and autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3033 or POSC 3033) or PSYC 2003 or BIOL 2213 or BIOL 2443 or BIOL 2533. (Typically offered: Fall)
This course is cross-listed with ANSC 5923.
POSC 5932. Cardiovascular Physiology of Domestic Animals. 2 Hours. Cardiovascular physiology, including mechanisms of heart function and excitation, and blood vessel mechanisms associated with the circulatory system in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC 3033 or POSC 3033. (Typically offered: Fall) This course is cross-listed with ANSC 5932.

POSC 5952. Respiratory Physiology of Domestic Animals. 2 Hours.
Respiratory physiology, including mechanisms of lung function and gas exchange. Mechanisms associated with the interaction of the respiratory system with other bodily systems in domestic animals and poultry will be discussed. Lecture 3 hours; drill 1 hour per week for first 8 weeks of semester. Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC 3033 or POSC 3033. (Typically offered: Spring)
This course is cross-listed with ANSC 5952.

POSC 5962. Gastrointestinal/Digestive Physiology of Domestic Animals. 2 Hours.
Gastrointestinal and hepatic physiology, including mechanisms of digestion, absorption of nutrients with emphasis on cellular control mechanisms in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component.
Prerequisite: ANSC 3033 or POSC 3033. (Typically offered: Fall) This course is cross-listed with ANSC 5962.

\section*{POSC 5972. Renal Physiology of Domestic Animals. 2 Hours.}

Renal physiology, including mechanisms of renal clearance with emphasis on cellular control mechanisms in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC 3033 or POSC 3033. (Typically offered: Spring)

\section*{POSC 600V. Thesis. 1-6 Hour.}

Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{POSC 6343. Vitamin Nutrition and Metabolism. 3 Hours.}

The vitamins required for humans and domestic animals for a healthy life with emphasis on absorption, transport, metabolism, biopotency, mechanism of action, tissue retention and turnover. Lecture 3 hours per week. Prerequisite: CHEM 3813. (Typically offered: Fall Odd Years)
This course is cross-listed with ANSC 6343, FDSC 6343.
POSC 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Psychology (PSYC)}

\section*{Courses}

PSYC 2003. General Psychology (ACTS Equivalency = PSYC 1103). 3 Hours.
An introduction to the field of Psychology, including the investigation of the biological bases of behavior; learning and cognitive processes; developmental and social psychology; and personality, psychopathology, and the treatment of psychological disorders. Students will be expected to complete a research requirement. (Typically offered: Fall, Spring and Summer)

\section*{PSYC 2003H. Honors General Psychology. 3 Hours.}

An introduction to the field of Psychology, including the investigation of the biological bases of behavior; learning and cognitive processes; developmental and social psychology; and personality, psychopathology, and the treatment of psychological disorders. Students will be expected to complete a research requirement. (Typically offered: Fall and Spring)
This course is equivalent to PSYC 2003.
PSYC 2013. Introduction to Statistics for Psychologists. 3 Hours. Introduction to the descriptive and inferential statistics commonly used by psychologists. A grade of C or better in PSYC 2013 is required as a prerequisite for PSYC 3073. Corequisite: Drill component. Prerequisite: PSYC 2003 and MATH 2043 or MATH 2053 or MATH 2554, with a grade of C or better, and a Psychology major. (Typically offered: Fall, Spring and Summer)

PSYC 2043. The Psychology of Health and Well-being. 3 Hours. Introduces students to the application of psychological science to healthy, meaningful living across the age span. Explores key research findings related to issues in modern living, including social connections, emotional adjustment, romantic relationships, parenting and schooling, family life, and work life. Prerequisite: PSYC 2003. (Typically offered: Spring)

\section*{PSYC 206V. Directed Readings. 1-4 Hour.}

For undergraduate majors in psychology. Prerequisite: Six hours of psychology; Instructor's permission. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit

\section*{PSYC 207V. Laboratory Experience. 1-4 Hour.}

Laboratory experience in psychology obtained by working as part of a faculty member's research team. Prerequisite: PSYC 2003 and Instructor's permission. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

\section*{PSYC 2173. Research Literacy in Psychological Science. 3 Hours.}

Training in critical evaluation of research in psychological science, including understanding statistics and research methods used by psychologists. Prerequisite: PSYC 2003 and a psychology minor. (Typically offered: Fall and Spring)

PSYC 3013. Social Psychology. 3 Hours.
Theories and representative research in social psychology, emphasizing the influence of the social world on human behavior. Introduction to the problems, theories, and experiments of social psychology. Prerequisite: PSYC 2003. (Typically offered: Fall and Spring)

PSYC 3023. Abnormal Psychology. 3 Hours.
Theories and representative research about the causes and treatment of the major forms of abnormal behavior. Prerequisite: PSYC 2003. (Typically offered: Fall and Spring)

PSYC 3063. Psychology of Diversity. 3 Hours.
Introduction to the psychology of diversity, including historical perspectives, biological and social bases of bias, individual differences, social identity, intergroup interactions, and power and privilege. Prerequisite: PSYC 2003. (Typically offered: Fall Even Years)

PSYC 3073. Research Methods. 3 Hours.
Training in execution and interpretation of experiments using the classical experimental designs. Limited enrollment. Prerequisite: PSYC 2013 and (MATH 2043, or MATH 2053, or MATH 2554) with a grade of "C" or better and a psychology major. (Typically offered: Fall and Spring)

PSYC 3093. Developmental Psychology (ACTS Equivalency = PSYC 2103). 3 Hours.
Theories and representative research in the psychological factors influencing development, including both hereditary and environmental influences, from conception through adolescence. Prerequisite: PSYC 2003. (Typically offered: Fall and Spring)

PSYC 3103. Cognitive Psychology. 3 Hours.
Introduction to theories and research in cognition including memory, language, and problem-solving. Prerequisite: PSYC 2003. (Typically offered: Spring)

PSYC 3173. Biopsychology. 3 Hours.
An introduction to the biological basis of behavior. Lectures cover current research about the neural correlates underlying sensory, motor, cognitive, and emotiona processes. Prerequisite: PSYC 2003. (Typically offered: Spring)

\section*{PSYC 3923H. Honors Colloquium. 3 Hours.}

Treats a special topic or issue, offered as part of the honors program. May be repeated when the content is changed. Prerequisite: honors candidacy (not restricted to candidacy in psychology). (Typically offered: Irregular) May be repeated for degree credit.

PSYC 399VH. Honors Course. 1-6 Hour.
Honors course. Prerequisite: Junior standing and instructor's permission. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

PSYC 4033. Educational Psychology. 3 Hours.
Psychological theories and concepts applied to the educational process. Investigates the learner and instructional variables in a wide range of educational settings. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular)

\section*{PSYC 4053. Psychological Tests. 3 Hours.}

Nature and theory of individual and group tests of intelligence, personality, interests, and attitudes. Prerequisite: Nine hours of psychology, including a C or better in PSYC 2013. (Typically offered: Irregular)

PSYC 4063. Psychology of Personality. 3 Hours.
Theories and representative research concerning the development and nature of the normal personality. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular)

\section*{PSYC 4073. Psychology of Learning. 3 Hours.}

Theories and representative research on basic principles of learning and memory in both animals and humans. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Spring)

\section*{PSYC 4083. Advanced Research. 3 Hours.}

A lecture/laboratory course covering research in a specialized area of psychology. Provides experience with design, conduct, analysis, and presentation of research projects related to class topics. Successful completion of the class, including a formal paper in APA style, with a grade of C or better will fulfill the senior writing requirement. Prerequisite: Eighteen hours of psychology including a grade of at least a C in PSYC 3073 and senior standing. (Typically offered: Fall and Spring)

PSYC 409V. Psychology Seminar. 1-3 Hour.
Provides intensive coverage of specialized psychological topics. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

PSYC 4123. Perception. 3 Hours.
Theories and representative research in the areas of sensation and perception. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular)

PSYC 4143. History and Systems of Psychology. 3 Hours.
Examination of the concepts, methods, and systems which have contributed to the development of modern psychology. Prerequisite: Fifteen hours of psychology and senior standing. (Typically offered: Irregular)

\section*{PSYC 4183. Behavioral Neuroscience. 3 Hours.}

Examination of the biological basis of behavior. Surveys the anatomy, physiology, and pharmacology of the mammalian brain and examines brain mechanisms underlying a wide range of behaviors and cognitive processes. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Fall)

PSYC 4193. Comparative Psychology. 3 Hours.
Analysis of animal behavior from an evolutionary perspective, with emphasis on the role of the environment and interactions with other animals in shaping the evolution of behavior within a species, and the evolution of differences in behavior between species. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Spring)

PSYC 4283. Advanced Seminar. 3 Hours.
A seminar/discussion class covering research in specialized areas of psychology. Students will read original sources and present their ideas and conclusions several formats. Successful completion of the class, including a formal paper in APA style, with a grade of C or better will fulfill the senior writing requirement. Prerequisite: Eighteen hours of psychology including a grade of at least a C in PSYC 3073; senior standing. (Typically offered: Fall and Spring)

\section*{PSYC 4433. Philosophy of Psychology. 3 Hours.}

Explores philosophical issues concerning the domain, foundations and methodology of psychology, and the relation of psychological explanations to other scientific and philosophical investigations of the mind. Topics include cognitive architecture and the evolution of minds, extended or embodied cognition, perception and introspection, consciousness and attention, social cognition, thought and language. (Typically offered: Irregular)
This course is cross-listed with PHIL 4433.

\section*{PSYC 5013. Advanced Developmental Psychology. 3 Hours.}

Critical examination of the research relevant to the psychological factors influencing the growth processes of the individual from birth to maturity. (Typically offered: Spring)

\section*{PSYC 5033. Psychopathology Theory \& Assessment. 3 Hours.}

Psychological and somatic factors contributing to pathological behavior. Interrelations of these factors will be analyzed in terms of how they lead to differential abnormal states. Includes guidelines for using structured interviews in the diagnosis and clinical assessment of major psychological disorders. Prerequisite: PSYC 3023 and enrollment in the Graduate Program in Psychology, or instructor consent. (Typically offered: Fall)

PSYC 5043. Assessment of Intellectual and Cognitive Abilities. 3 Hours. Training in the theory, administration and interpretation of individual tests of intelligence and mental ability. Prerequisite: PSYC 4053 and enrollment in the Psychology Graduate Program. (Typically offered: Fall)

PSYC 5063. Advanced Social Psychology. 3 Hours.
Theory, methodology, and contemporary research in the major areas of social psychology. Topics include attitude theory and measurement, group processes, social and cultural factors. (Typically offered: Spring)

PSYC 5073. Introduction to Clinical Practice: Core Skills and Ethical Guidelines. 3 Hours.
An introduction to clinical practice focusing on a) interview methods and techniques and \(b\) ) ethical principles and guidelines. Includes an introduction to clinic policies and procedures. Prerequisite: Enrollment in the Psychology graduate program. (Typically offered: Spring)

PSYC 5080. Observational Practicum. 0 Hours.
Observation of senior therapists in the provision of psychodiagnostic and psychotherapeutic techniques. Pre- or Corequisite: Doctoral students only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 0 hours of degree credit.

\section*{PSYC 5113. Theories of Learning. 3 Hours.}

Major concepts in each of the important theories of learning. (Typically offered: Fall)

\section*{PSYC 5123. Cognitive Psychology. 3 Hours.}

Contemporary theories and research on human information processing including topics such as memory, language, thinking, and problem solving. (Typically offered: Spring Even Years)

\section*{PSYC 5133. Inferential Statistics for Psychology. 3 Hours.}

Inferential statistics, including representative parametric tests of significance. Special emphasis on analysis of variance, covariance, and component variance estimators as applied to psychological research. Prerequisite: PSYC 2013. (Typically offered: Fall)

PSYC 5143. Advanced Descriptive Statistics for Psychology. 3 Hours.
Special correlation techniques followed by a survey of representative nonparametric tests of significance. Major emphasis on advanced analysis of variance theory and designs. Prerequisite: PSYC 5133. (Typically offered: Spring)

PSYC 5163. Personality: Theory \& Assessment. 3 Hours.
An introduction to empirically based theories of personality and personality disorders with an emphasis on standardized instruments in the assessment of normative and pathological personality. Includes training in the interpretation, integration, and reporting of results. Pre- or Corequisite: PSYC 5043. Prerequisite: Enrollment in the Psychology graduate program or instructor consent. (Typically offered: Spring)

\section*{PSYC 5173. Structural Equation Modeling. 3 Hours.}

Introduction to concepts and methods of structural equation modeling. Major emphasis on advanced techniques to model latent variables using large sample survey data. Prerequisite: PSYC 5133 and PSYC 5143. Corequisite: Lab component. (Typically offered: Spring Even Years)

\section*{PSYC 5223. Perception. 3 Hours.}

Theories and representative research in the areas of sensation and perception. Graduate degree credit will not be given for both PSYC 4123 and PSYC 5223. Prerequisite: Six hours of psychology, not including PSYC 2013. (Typically offered: Irregular)

PSYC 523V. Research Practicum. 1-3 Hour.
Presentation, evaluation, and discussion of on-going research proposals. Required of all experimental graduate students in the first 2 years of their program. (Typically offered: Fall and Spring)

PSYC 5313. Introduction to Clinical Science: Research Design and Ethical Guidelines. 3 Hours.
Provides a) guidelines for designing and conducting empirical research in clinical psychology, b) ethical principles that regulate clinical research, and c) supervised opportunities to develop a clinical research proposal. Prerequisite: Enrollment in the Psychology graduate program. (Typically offered: Fall)

PSYC 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

PSYC 602V. Seminar: Teaching Psychology. 1-3 Hour.
Survey of the literature on teaching of psychology in college. Includes: planning the course, method, examining and advising students. Prerequisite: Teaching assistant. (Typically offered: Fall and Spring)

\section*{PSYC 607V. Clinical Practicum III. 1-3 Hour.}

Provides supervised experience in the application of the more complex and lesser known psychodiagnostic techniques and training and experience in psychotherapeutic techniques with the more severe functional disorders, with special topics in these domains emphasized across sections. Prerequisite: PSYC 5073; Enrollment in the Psychology graduate program. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

PSYC 609V. Clinical Graduate Seminar. 1-3 Hour.
Provides intensive coverage of specialized clinical topics. Open to all graduate students. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

PSYC 611V. Individual Research. 1-18 Hour.
Individual research. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

PSYC 6133. Advanced Behavioral Neuroscience. 3 Hours.
Examination of the biological basis of behavior, with emphasis on underlying neural mechanisms. (Typically offered: Fall)

PSYC 6163. Psychotherapy. 3 Hours.
A conceptual overview of psychotherapy, with emphasis on a) common mechanisms, and b) cognitive, affective, and interpersonal approaches. Prerequisite: PSYC 5033. (Typically offered: Fall)

PSYC 6213. Psychotherapy Outcomes. 3 Hours.
Provides a critical evaluation of theory and research on empirically supported programs and interventions for major psychological disorders. Prerequisite: Enrollment in the Psychology graduate program. (Typically offered: Spring)

PSYC 6323. Seminar in Developmental Psychology. 3 Hours.
Discussion of selected topics in the area of human development. Emphasis will be on a review of current theory and empirical research. Topics selected for discussion could range from early development (child psychology), to later development (psychology of adulthood and aging-gerontology), to current attempts to integrate the field (life-span developmental psychology). (Typically offered: Fall Odd Years)

PSYC 6343. Seminar in Quantitative Methods. 3 Hours.
Discussion of selected mathematical approaches to theorizing and research in psychology. Emphasis will be on generalization of a given approach across several content areas of psychology. Hence, while each area must be treated in reasonable depth, current thinking and research spanning more than one content area will be stressed. (Typically offered: Irregular)

PSYC 6353. Seminar in Learning/Memory/Cognition. 3 Hours.
Discussion of selected topics in learning, memory, or cognition. Emphasis on current theory and empirical research. Topics selected for discussion may be in the areas of learning, memory, problem solving, or language. (Typically offered: Spring Odd Years)

PSYC 6373. Seminar in Personality and Social Psychology. 3 Hours.
Discussion of selected topics in social psychology and personality. Current theoretical positions and recent research findings are emphasized. Topics selected for discussion will be in areas of intrapersonal processes, interpersonal processes, group processes or any of various areas of personality. (Typically offered: Fall)

PSYC 6413. Seminar in Physiological Psychology. 3 Hours.
Discussion of selected topics in physiological psychology. Emphasis will be on a review of current theory and empirical research. Each offering of the seminar will examine the biological basis of a specific aspect of behavior, utilizing both animal and human data. (Typically offered: Spring Odd Years)

PSYC 698V. Field Work. 1-3 Hour.
Provides academic credit for field work in multidisciplinary setting, involving supervised experiences in assessment and psychotherapy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

PSYC 699V. Clinical Psychology Internship. 1-3 Hour
Supervised experience in a multidisciplinary setting of assessment and psychotherapy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

PSYC 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral Dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Public Administration (PADM)}

\section*{Courses}

PADM 5803. Quantitative Methods Analysis. 3 Hours.
Data analysis techniques, including descriptive and inferential statistics and packaged computer programs. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{PADM 5823. Grant Writing for the Social Sciences. 3 Hours.}

This course will teach students the fundamentals of obtaining grants from local, state and federal agencies. (Typically offered: Irregular)

\section*{PADM 587V. Professional Development. 1-6 Hour}

Encompasses internships, professional projects if individual is employed full-time and not eligible for an internship, conference and workshop participation, and other activities conducive to the students development as a public service professional. (Typically offered: Fall, Spring and Summer)

\section*{PADM 588V. Directed Readings. 1-3 Hour}

Directed readings. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

PADM 589V. Independent Research. 1-3 Hour.
Independent Research. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

PADM 5903. Risk and Public Policy. 3 Hours.
Examines how concepts of risk serve to justify and shape public policies and risk management practices. (Typically offered: Spring)

\section*{PADM 5913. Policy Analysis: Theory and Practice. 3 Hours.}

Provides a firm theoretical foundation in, and an ability to apply, the general instruments necessary for professional practice of policy analysis. (Typically offered: Fall)

PADM 5923. The Evolution of Nonprofits and Philanthropy. 3 Hours. Introduction to the history of philanthropy. Examines philanthropy at the intersection of anthropological theories of giving, social theories related to types of capital and capital exchanges, and economic theories about the role of philanthropy for national economies. (Typically offered: Irregular)

\section*{Public Health (PBHL)}

\section*{Courses}

PBHL 1103. Personal Health and Safety. 3 Hours.
Health and safety problems with emphasis on the promotion of individual health and safety. (Typically offered: Fall and Spring)

PBHL 1203. Prevention of Drug Abuse. 3 Hours.
Provides an overview of drugs of use and abuse in society. Also assists the student in evaluating drug abuse prevention approaches for public, private, or community settings. (Typically offered: Fall and Spring)

\section*{PBHL 1303. Introduction to Human Sexuality. 3 Hours.}

An examination of human sexuality with a critical analysis of male and female attitudes and values affecting self-understanding and gender identity. (Typically offered: Fall and Spring)

PBHL 2101. Special Topics. 1 Hour.
Examination and application of health promotion concepts based on individualized health hazard appraisal. (Not to replace content courses leading to teacher certification in health education). (Typically offered: Fall and Spring) May be repeated for up to 5 hours of degree credit.

PBHL 2663. Terminology for the Health Professions. 3 Hours.
Emphasis is on word roots and combined forms of words describing various facets of health and disease. Descriptive definitions with application of practical significance included for the health professional. (Typically offered: Spring) This course is cross-listed with EXSC 2663.

PBHL 3041. Undergraduate Pre-Internship. 1 Hour.
This course prepares students for their public health internship by providing professional development at the necessary steps for identifying and securing a Public Health Internship. (Typically offered: Fall and Spring)

PBHL 310V. Seminar in Public Health. 1-3 Hour.
Synthesis and critical analysis of current literature in the area of community health promotion. Prerequisite: PBHL majors only. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

PBHL 3202. Health Care and Public Health Policy. 2 Hours.
This course provides an introduction to health care services, inclusive of the characteristics and structure of the U.S. health care delivery system and comparison to other health systems. Aspects of public health policy, laws, ethics, and economics will be examined. Upon completion of the course, students are expected to demonstrate an understanding of the key elements of the health care industry as it pertains to medical care and public health, including an understanding of the roles of health care providers, public and private payers, the role of government, and challenges facing health care systems. Pre- or Corequisite: PBHL 1103 and PBHL 3443. Prerequisite: Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring)

PBHL 3202H. Honors Health Care and Public Health Policy. 2 Hours.
This course provides an introduction to health care services, inclusive of the characteristics and structure of the U.S. health care delivery system and comparison to other health systems. Aspects of public health policy, laws, ethics, and economics will be examined. Upon completion of the course, students are expected to demonstrate an understanding of the key elements of the health care industry as it pertains to medical care and public health, including an understanding of the roles of health care providers, public and private payers, the role of government, and challenges facing health care systems. Prerequisite: Public Health Bachelor of Science (PBHLBS) major and honors standing required. (Typically offered: Fall and Spring)
This course is equivalent to PBHL 3202.
PBHL 333V. Research in Public Health. 1-3 Hour.
This course is intended for undergraduate students who wish to gain research experience under the direction of a faculty mentor. Students will work independently and collaborate with faculty member(s) and fellow students to conduct research in a specified area of interest. The purpose of the course is for the student to develop knowledge in her/his own domain, strengthen her/his research skills, and work collaboratively on research projects. The directed research course places more emphasis on the students' role as a researcher in an academic setting. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

PBHL 333VH. Honors Research in Public Health. 1-3 Hour.
This course is intended for undergraduate students who wish to gain research experience under the direction of a faculty mentor. Students will work independently and collaborate with faculty member(s) and fellow students to conduct research in a specified area of interest. The purpose of the course is for the student to develop knowledge in her/his own domain, strengthen her/his research skills, and work collaboratively on research projects. The directed research course places more emphasis on the students' role as a researcher in an academic setting. Prerequisite: Instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.
This course is equivalent to PBHL 333V.
PBHL 3443. Introduction to Public Health. 3 Hours.
This course is intended for undergraduate students and will focus on the foundations of public health as a profession and its future outlook. Public health concepts and practice. Topics include philosophy, purpose, history, organization, functions, tools, activities and results at national, state, and community levels. (Typically offered: Fall and Spring)

\section*{PBHL 3633. First Responder-First Aid. 3 Hours.}

Prepares persons to administer cardiopulmonary resuscitation and emergency aid to victims of serious bleeding, poisoning, shock, fracture, and other forms of injury until emergency medical services personnel arrive at the scene. (Typically offered: Irregular)

PBHL 3643. Public Health Program Planning and Evaluation. 3 Hours. Emphasis on community analysis; defining and verifying community health problems; establishing program goals; defining and assessing health behaviors; formulating educational goals, objectives, methods, and activities; promoting programs; and designing program evaluation. Prerequisite: Public Health Bachelor of Science (PBHLBS) major. (Typically offered: Spring)

PBHL 3643H. Honors Public Health Program Planning and Evaluation. 3 Hours. Emphasis on community analysis; defining and verifying community health problems; establishing program goals; defining and assessing health behaviors; formulating educational goals, objectives, methods, and activities; promoting programs; and designing program evaluation. Prerequisite: Public Health Bachelor of Science (PBHLBS) major and honors standing. (Typically offered: Fall and Spring) This course is equivalent to PBHL 3643.

PBHL 3723H. Honors Research Methods in Public Health. 3 Hours.
This course will provide an overview of research methods for experimental research designs in public health. The students will learn facets of research including: developing a research idea, getting funding for research, obtaining IRB/IACUC approval, data collection, data input, statistical analyses, and preparing manuscripts for publication. Designed for public health honor students in spring of their junior year or the summer prior to their senior year to prepare them for their honor's thesis. Prerequisite: Honors Standing. (Typically offered: Spring) This course is cross-listed with EXSC 3723H.

\section*{PBHL 3901H. Honors Public Health Thesis Tutorial. 1 Hour.}

Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy and PBHLBS major. (Typically offered: Fall, Spring and Summer)

PBHL 391V. Special Topics in PBHL. 1-3 Hour.
Designed to cover specialized topics not presented in public health coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{PBHL 4043. Internship in Public Health. 3 Hours.}

Designed to provide the student with an extended work experience in a selected community/public health program. The student works under college supervision with a professional in the health care delivery field. Pre- or Corequisite: PBHL 3643 and PBHL 4603. Prerequisite: Successful completion of PBHL 1103, Senior standing, and Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

PBHL 410V. Global Health: Issues, Concepts and Perspectives. 3-6 Hour. Emphasis placed on needs assessment, development, implementation, evaluation, and sustainability of public health initiatives designed to improve the health and well-being of community members at all levels of the health continuum; topics of focus will include determinants of health, mental health, environmental health, nutrition, maternal and child health, sexual health, injuries and chronic and infectious diseases. Prerequisite: Approval from Study Abroad to participate in the Community Development Service Learning Program. (Typically offered: Summer)

PBHL 410VH. Honors Global Health: Issues, Concepts and Perspectives. 3-6 Hour.
Emphasis placed on needs assessment, development, implementation, evaluation, and sustainability of public health initiatives designed to improve the health and well-being of community members at all levels of the health continuum; topics of focus will include determinants of health, mental health, environmental health, nutrition, maternal and child health, sexual health, injuries and chronic and infectious diseases. Prerequisite: Approval from Study Abroad to participate in the Community Development Service Learning Program. (Typically offered: Summer)
This course is equivalent to PBHL 410V.

PBHL 4603. Health Behavior: Theories and Application. 3 Hours.
Understanding the reasons for health behavior is vital for the health education professional. It is necessary to assist in the development of services and programs that are likely to move an individual from an unhealthy behavior to one that is more appropriate for a healthy lifestyle. This course surveys the major health behavior theories used in health education and applications of the theories will be used in the class. Prerequisite: PBHL 3443 and Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring)

PBHL 4603H. Honors Health Behavior: Theories and Application. 3 Hours. Understanding the reasons for health behavior is vital for the health education professional. It is necessary to assist in the development of services and programs that are likely to move an individual from an unhealthy behavior to one that is more appropriate for a healthy lifestyle. This course surveys the major health behavior theories used in health education and applications of the theories will be used in the class. Prerequisite: Must be a honors student, PBHL 3443 and Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring) This course is equivalent to PBHL 4603.

PBHL 4613. Principles of Epidemiology. 3 Hours.
Distribution and patterns of disease or physiological conditions within populations; an examination of the nature of epidemiological research. (Typically offered: Fall and Spring)
PBHL 4613H. Honors Principles of Epidemiology. 3 Hours.
Distribution and patterns of disease or physiological conditions within populations; an examination of the nature of epidemiological research. Prerequisite: Honors standing. (Typically offered: Fall and Spring)
This course is equivalent to PBHL 4613.
PBHL 4623. Human Diseases. 3 Hours.
An examination of the variety, behavior, distribution, and management of both infectious and noninfectious diseases in human populations. Prerequisite:
BIOL 1603 (or BIOL 1543 and BIOL 1541L). (Typically offered: Irregular)
PBHL 4643. Multicultural Health. 3 Hours.
Through lecture, discussion, simulations, and case studies, students will develop an appreciation for the cultural traditions and practices of different groups. The importance and implications of these traditions on health outcomes and health status will be examined. Students will also develop skills of cultural competence that are essential for public health practitioners today. Prerequisite: Public Health Bachelor of Science (PBHLBS) major required. (Typically offered: Fall and Spring)

PBHL 4643H. Honors Multicultural Health. 3 Hours.
Through lecture, discussion, simulations, and case studies, students will develop an appreciation for the cultural traditions and practices of different groups. The importance and implications of these traditions on health outcomes and health status will be examined. Students will also develop skills of cultural competence that are essential for public health practitioners today. Prerequisite: Public Health Bachelor of Science (PBHLBS) major and honors standing required. (Typically offered: Fall and Spring)
This course is equivalent to PBHL 4643.
PBHL 498VH. Honors Public Health Thesis/Project. 1-3 Hour.
Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one" to complete the honors thesis/project. Prerequisite: Honors candidacy, PBHLBS major, and PBHL 3901H or PBHL 3723H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

PBHL 5173. Social Media Data Analysis for Public Health. 3 Hours. In this applied course, students will develop qualitative, quantitative, and mixed method data analysis skills using social media data to answer specific conceptually grounded research questions. Course assignments will focus on organizing and interpreting data, as well as preparing and presenting data for diverse audiences. (Typically offered: Fall)

\section*{PBHL 5533. Theories of Social and Behavioral Determinants of Health. 3} Hours.
This course will provide a basic foundation in the social and behavioral sciences relevant to public health. Students will learn the role of social and behavioral determinants in the health of individuals and of populations. Then, students will learn models and theories of health behavior, both generally and specifically. Generally, the student will learn how to identify, analyze, and use theoretical constructs and principles with particular attention to the use of theory in professional public health practice. Specifically, the student will learn the constructs and principles of several theories commonly used in public health behavior research and intervention design. The course will cover the four major individual that focus on intrapersonal factors (i.e., Health Belief Model, Transtheoretical Model, Theory of Reasoned Action/Planned Behavior, and Social Cognitive Theory) as well as several social, organizational, and community theories that are beyond the individual level. (Typically offered: Fall)

PBHL 5553. Substance Use, Society, and Health. 3 Hours.
This course will employ social science and public health literature to examine substance use, related health and social problems, and policies. Topics reviewed in this course include a brief history of substance use in the U.S., theoretical explanations, substance use cultures, vulnerable populations, intervention, treatment, legal issues and drug policies. In addition, students will research a special topic of interest, grounded in public health literature. This course will require students to read, engage in critical thinking, and participate in discussions. (Typically offered: Fall)

\section*{PBHL 5563. Public Health: Practices and Planning. 3 Hours.}

Acquaints the student with the structure, functions, and current problems in public health and with the role of education in public health. Prevention and control practices and planning will be emphasized. Prerequisite: PBHL 5573. (Typically offered: Spring)

\section*{PBHL 5573. Foundations of Public Health. 3 Hours.}

This is a required survey course that will ensure that all public health students, within their first full year of study, are exposed to the fundamental concepts and theories that provide the basis for the body of knowledge in the field of public health. Students will be introduced to fundamental principles, concepts and tools used in public health to understand and promote the health of populations. (Typically offered: Fall)

\section*{PBHL 5613. Epidemiology for Public Health Practice. 3 Hours.}

This course will present principles and practices related to the prevention and contro of health-related conditions in the human population. Emphasis will be placed on understanding the principle concepts of epidemiology, including aspects of disease distribution, epidemiologic methods, risk of disease and injury, descriptive and analytic epidemiologic methods and study designs, and application of epidemiologic data to the prevention and control of disease and injury. Format for every class will include lecture and small group seminars. (Typically offered: Fall)

PBHL 5633. Health Administration, Organizations, and Systems. 3 Hours. This course provides an overview of management processes for public health professionals; basic principles of resource management; comparison of organization, structure, and function of health care, public health, and regulatory systems; and the application of systems thinking tools to public health issues. (Typically offered: Irregular)

\section*{PBHL 5643. Multicultural Health. 3 Hours.}

Through lecture, discussion, simulations, and case studies, students will develop an appreciation for the cultural traditions and practices of different groups. The importance and implications of these traditions on health outcomes and health status will be examined. Particular attention will be paid to the role of the public health educator in mediating the impact of health disparities, including advocacy. Students will develop skills of cultural competence that are essential for public health practitioners today. Prerequisite: Graduate standing or consent. (Typically offered: Spring Even Years)

PBHL 5653. Social Determinants of Health. 3 Hours.
This course will provide a foundational perspective to systematically analyze health topics. Students will use the socioecological approach to comprehensively interpret social determinants of health and summarize their meaning in the context of public and global health promotion efforts. (Typically offered: Fall)

PBHL 566V. Integrative Learning Experience. 1-3 Hour.
The MPH Learning Experience (ILE) requires the student to integrate the knowledge gained and demonstrate the skills acquired through their course work and practical experience into a capstone project. Through this project, the student will apply public health theories and principles to a specific aspect of public health practice. The Integrative Learning Experience demonstrates synthesis of foundational and concentration competencies in a product that should be appropriate for the student's educational and professional objectives. Each student's integrative learning experience is overseen by a faculty member(s). (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

PBHL 574V. Internship. 1-6 Hour.
Internship in health behavior and health promotion. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

PBHL 584V. Applied Practice Experience. 1-3 Hour.
Practical experience in using the knowledge and skills gained through classroom studies in the Master of Public Health program. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

PBHL 589V. Independent Research. 1-6 Hour.
Development, implementation, and completion of graduate research project. Prerequisite: M.S. degree in Community Health Promotion and HHPR 5353 and ESRM 5393. (Typically offered: Fall, Spring and Summer)

PBHL 600V. Master's Thesis. 1-6 Hour.
Thesis in health behavior and health promotion. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

PBHL 6013. Advanced Directed Research. 3 Hours.
This course is intended for doctoral students who wish to pursue research under the direction of a faculty member. In this course, doctoral students will work independently and collaborate with faculty member(s) and fellow students to conduct research in a specified area of interest. The purpose of the course is for the student to develop knowledge in her/his own domain, strengthen her/his research skills, and work collaboratively on research projects. The course will aim for students to present research findings at conferences and/or publish research findings in peer reviewed journals. The directed research course places more emphasis on the students' role as a researcher in an academic setting. Prerequisite: Admission to the Ph.D. program in Community Health Promotion. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

\section*{PBHL 605V. Independent Study. 1-6 Hour.}

Provides students with an opportunity to pursue special study of education problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

PBHL 6803. Health Communication Theory, Research and Practice. 3 Hours. This course is designed to acquaint you with the role of communication in health education and with basic principles and practices in interpersonal, group, and mass communication. Health communication theory will be discussed in the first part of the semester, followed by important research in the area of health communication, and finally putting to practice the material will be the terminal experience for the course. (Typically offered: Spring Odd Years)

PBHL 6833. Principles of Epidemiology II. 3 Hours.
Provides students with knowledge and skills necessary to design, conduct, and interpret observational epidemiological concepts, sources of data, prospective cohort studies, retrospective cohort studies, case-control studies, cross-sectional studies, methods of sampling, estimating sample size, questionnaire design, and effects of measurement error. (Typically offered: Spring and Summer)

PBHL 699V. Seminar. 1-6 Hour.
Discussion of selected topics and review of current literature in community health promotion. Prerequisite: Advanced graduate standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{Public Policy (PUBP)}

\section*{Courses}

PUBP 6001. Pro-Seminar. 1 Hour.
An introduction to the field of public policy and to the program. The seminar will address topics such as the meaning of public policy, policy research, the dissertation process, and particular issues of public policy concern. Prerequisite: Admission to program. (Typically offered: Fall)

\section*{PUBP 6013. Theories of Public Policy. 3 Hours.}

This seminar introduces doctoral students to the major concepts, frameworks, and theories of public policy. Emphasis is on the usefulness and limitations of these frameworks and theories in empirical research. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{PUBP 6023. Law and Public Policy. 3 Hours.}

This course focuses on the legal aspects of public policy, with emphasis on the regulatory process and its legal constraints. Also considered are the process of administrative decision making, judicial review, legislative oversight, and public access to government information. (Typically offered: Spring)

PUBP 6033. Community Development Policy and Practice. 3 Hours.
This course examines multiple community development definitions, the community capitals framework as well as theories, conceptual frameworks and processes and how these are linked, both historically and currently, to broad-based US public policy and specifically, housing and workforce development policies. (Typically offered: Summer)

\section*{PUBP 604V. Special Topics in Public Policy. 1-6 Hour.}

Designed to cover specialized topics not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit

PUBP 6103. Policy Planning, Implementation, and Evaluation. 3 Hours.
This interdisciplinary seminar will explore the relationship between policy, public administration, and organizations in the community. Stakeholder groups will be considered as part of the newer approaches to practice-driven scholarship. The class will examine innovative approaches to decision making, strategic management and policy leadership in complex interorganizational and interagency settings. (Typically offered: Irregular)

PUBP 6113. Agenda Setting and Policy Formulation. 3 Hours.
Introduces agenda and policy formation focusing on the classic theoretical and empirical literature. The course is designed to introduce graduate students to a variety of theories typologies, concepts, and ideas relating to the study of public policy. (Typically offered: Fall)

PUBP 612V. Research Problems in Policy. 1-6 Hour.
Research problems. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{PUBP 6134. Capstone Seminar in Public Policy. 4 Hours.}

This course is intended to integrate various policy interests in a specific community based project. Prerequisite: Instructor permission required. (Typically offered: Fall and Spring)

PUBP 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral dissertation. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Recreation and Sport \\ Management (RESM)}

\section*{Courses}

RESM 1003. Professional Foundations of Recreation and Sport Management. 3 Hours.
An analysis of the historical and philosophical development of recreation, sport and leisure. Theories of play, recreation, sport and leisure are studied. Economic, political, technical, and social forces are examined as these influence recreation, sport, parks, and leisure services is examined in context with diverse service delivery systems. Prerequisite: RESM major or RESM minor or instructor consent. (Typically offered: Fall, Spring and Summer)

\section*{RESM 1013. Sport Management Fundamentals. 3 Hours.}

This course is designed to present an overview of the fundamentals of sport management in professional and intercollegiate sport, as well as issues facing sport organizations and how management techniques can be applied to solve sport business problems. A description of career opportunities in sport will be presented with special interest in helping the student design a course of study that best meets his/her goals. Prerequisite: RESMBS major or instructor consent. (Typically offered: Fall)
RESM 1023. Foundations of Outdoor Leadership. 3 Hours.
An introduction to the philosophy and history of outdoor recreation and an examination of the theories, principles, and practices of leading others outdoors. Focus is on an introduction to outdoor technical, power, and meta-skills needed to effectively lead adventure-based programs. Emphasis is placed on communication skills, group dynamics, flexible leadership styles, problem solving, basic facilitation techniques, professionalism, and decision-making. Field visits are required in this course. (Typically offered: Fall, Spring and Summer)

\section*{RESM 1032. Outdoor Living Skills. 2 Hours.}

Classroom study leading to one overnight (weekend) trip to develop personal experience in outdoor recreational activities. Topics include low impact practices, meal planning, risk management, route and description plans, equipment selection, use, maintenance, clothing systems, shelters, weather, and more. An overnight outing is required in this course. (Typically offered: Fall and Spring)
RESM 1041. Social Issues in the Outdoor Industry. 1 Hour.
Every participant in outdoor sports - be it a recreational or a competitive environment - is affected by social issues. Building a nuanced and comprehensive understanding of these issues empowers future outdoor industry professionals to address the issues in holistic ways. This course will provide an overview of a variety of topics including but not limited to patriarchy, white supremacy, heteronormativity, fatphobia, Indigenous erasure, climate advocacy, physical and neuro disabilities, tokenism, and much more. We will also learn how to stop perpetuating the harmful cycles in the outdoor industry that many of these oppressive systems create. Prerequisite: Students must have instructor consent and/or be enrolled in the Outdoor Leadership minor (ODLR). (Typically offered: Irregular)
RESM 1051. Rock Climbing I. 1 Hour.
This course will acquaint students with the principles and practices of indoor rock climbing, rock climbing equipment, climbing systems, physics of rock climbing, climbing movement, belaying, and different approaches to rock climbing. The course will enable students to increase muscular strength, endurance, and flexibility of the body through rock climbing as a fitness activity. This course will include the Professional Climbing Instructors Association Climb Site Belayer Certification. (Typically offered: Fall and Spring)

RESM 1061. Rock Climbing II. 1 Hour.
Designed to acquaint students with intermediate to advanced climbing movement and techniques. Emphasis is placed on advanced understanding of climbing wall equipment, inspection, and maintenance, climbing instructional techniques, assisted braking belay devices, climbing rescue, supervision, and risk management. This course will include the Professional Climbing Instructors Association Climbing Wall Instructor Certification. (Typically offered: Fall and Spring)

\section*{RESM 1071. Introduction to Mountain Biking. 1 Hour.}

This course will deliver the basic skills and resources necessary for students to develop confidence in pursuing mountain biking. Topics will include technique and handling, basic maintenance, equipment, and resources for exploring the many mountain bike trails in Northwest Arkansas. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Fall and Spring)

\section*{RESM 1081. Advanced Mountain Biking. 1 Hour.}

This course will deliver the intermediate to advanced skills and resources necessary for students to develop confidence in pursuing mountain biking. Topics will include progressive techniques and handling, advanced maintenance, and an exploration of a variety of trail types (e.g. XC, downhill, skills development, etc.) in Northwest Arkansas. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Fall and Spring)

\section*{RESM 1091. Introduction to Bike Mechanics. 1 Hour.}

This course will deliver basic skills and resources necessary for students to develop maintenance and repairs on bikes. Designed to progress through all the parts of the bike and conceptualize topics taught in class. Topics include drivetrain repair and maintenance, brake repair and maintenance, headset and hub adjustments, and flat tire repair. Prerequisite: Instructor consent and/or be enrolled in the Outdoor Leadership minor (ODLR). (Typically offered: Irregular)

\section*{RESM 1101. Wilderness First Aid. 1 Hour.}

This course is the industry standard for wilderness medicine certifications for outdoor guides and leaders traveling for day trips or short adventures. Certification is dependent on testing and performance and participation in the course. Through this course, students will leader how to assess, treat, prioritize illnesses and injuries in remote settings. Active engagement is required as students will participate in skills labs and simulations. Students will receive certifications from Wilderness Medicine Training Center (WMTC) for a Wilderness First Aid, Wilderness CPR, and Epinephrine. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Irregular)

RESM 1121. Soft Surface Trail Stewardship and Management. 1 Hour.
This course will deliver basic skills and resources necessary for students to learn trail design history, building techniques, maintenance, and sustainability. Topics include user access, tool usage, stonework, vegetative abatement, drainage and more. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Fall)

\section*{RESM 1131. Introduction to Bikepacking. 1 Hour.}

This course is for students interested in an introduction to bikepacking, exploring the experiences available for both mountain bike and gravel/rural road touring with a focus on the Ozarks Mountains. The course is designed to (1) teach students the introductory skills needed to successfully plan a route for a multiday bikepacking trip while (2) developing the basic understanding of bikepacking through a selfsupported but instructor led two days, one night group bikepacking trip. Prerequisite: ODLR-M student or instructor consent. (Typically offered: Fall)
RESM 2011. Recreation and Sport Practicum. 1 Hour.
Students are assigned to assist in leisure-oriented programs for exposure to organizational structure, services, and programming of cooperating recreational and sport agencies. Students may take 1-2 hours per semester; each credit hour is a 45 -hour experience. Students must complete 2 different experiences before internship. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Fall, Spring and Summer) May be repeated for up to 2 hours of degree credit.

\section*{RESM 2813. Recreation and Sport Leadership. 3 Hours.}

Development of knowledge related to leadership theory, group dynamics, and face to face leadership techniques. Students gain an understanding of leadership theories as they are applied in a field setting. Pre- or Corequisite: COMM 1313. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Fall and Spring)

RESM 2853. Leisure and Society. 3 Hours.
This course is an examination of leisure and its effect on society. Course content includes identification and exploration of motivating factors related to various traditional and contemporary leisure expressions as it occurs across diverse populations. (Typically offered: Fall, Spring and Summer)

\section*{RESM 2853H. Honors Leisure and Society. 3 Hours.}

This course is an examination of leisure and its effect on society. Course content includes identification and exploration of motivating factors related to various traditional and contemporary leisure expressions as it occurs across diverse populations. (Typically offered: Fall and Spring)
This course is equivalent to RESM 2853.

\section*{RESM 3023. Sport Management Fundamentals. 3 Hours.}

This course is designed to present an overview of the fundamentals of sport management in professional and intercollegiate sport, as well as issues facing sport organizations and how management techniques can be applied to solve sport business problems. A description of career opportunities in sport will be presented with special interest in helping the student design a course of study that best meets his/her goals. Prerequisite: RESM 1003 with a grade of \(C\) or better. (Typically offered: Fall)

\section*{RESM 3043. Natural Resources and Outdoor Ethics. 3 Hours.}

An examination of the use and management of natural resources for outdoor recreation with consideration of multiple use, environmental ethics, risk management, and other current topics. An overnight outing is required in this course. (Typically offered: Fall and Spring)

RESM 3063. Commercial Recreation and Sport. 3 Hours.
Examination of the commercial recreation and sport industries. The operational requirement of a wide range of recreation businesses will be studied. Case study and field investigation methods will be emphasized. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{RESM 3073. Managing College Athletics. 3 Hours.}

This course examines modern college athletics and the issues facing today's college athletics administrators. To appropriately do so, the course looks at the history of college athletics and accompanying issues. Further, the class will identify and discuss various constituencies of an athletics department as well as the various units within an athletics department. The class will examine the makeup of the NCAA and its operations as well as issues facing it. Prerequisite: RESM 1003 or RESM 1013 both with a C or better. (Typically offered: Fall)

\section*{RESM 3083. Research in Recreation and Sport. 3 Hours.}

An introduction to the applied methods and techniques of research and evaluation in recreation and sport services. General consideration given to research applications such as needs assessment, program evaluation, and marketing studies. Emphasis placed on the logic underlying the research process. Prerequisite: Junior standing and RESM 1003 or RESM 1013 both with a grade of C or better. (Typically offered: Fall and Spring)

\section*{RESM 3083H. Honors Research in Recreation and Sport. 3 Hours.}

An introduction to the applied methods and techniques of research and evaluation in recreation and sport services. General consideration given to research applications such as needs assessment, program evaluation, and marketing studies. Emphasis placed on the logic underlying the research process. Prerequisite: Honors candidacy and RESM 1003 or RESM 1013 both with a grade of C or better. (Typically offered: Fall and Spring)
This course is equivalent to RESM 3083.

RESM 3093. Diversity and Inclusion in Recreation and Sport Management. 3 Hours.
An introduction to the basic concepts of inclusive and special recreation and sport services integrated with knowledge and skill sets required to provide accessible recreation and leisure programming for people with disabilities. Prerequisite: RESM 1003 with a grade of C or better. (Typically offered: Spring)

RESM 3833. Program Planning in Recreation and Sport. 3 Hours.
Development of the fundamentals of program planning using modern techniques of identifying and analyzing program activity areas and community needs. Includes program development and application with a variety of population groups and representative leisure service areas. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Spring)

RESM 3843. Recreation and Sport Facilities. 3 Hours.
Planning concepts, design principles, and maintenance techniques are emphasized. Also, technical design concepts and firsthand experiences in maintenance of facilities are included. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Spring)

\section*{RESM 3873. Law and Risk for Recreation and Sport Management. 3 Hours.} In-depth look at risk management and related legal issues affecting recreation and sport administration. Pre- or Corequisite: RESM major or RESM minor or by instructor consent. Prerequisite: Junior standing, and RESM 1003 or RESM 1013 both with a grade of C or better. (Typically offered: Fall)

RESM 3883. Marketing and Promotion in Recreation and Sport Management. 3 Hours.
This course provides an overview of the principles and practices of promotions and marketing in the recreation and sport industry. Topics include sport marketing planning, market segmentation and identification of the target market, marketing mix, and sponsorship. Credits: three hours. Prerequisite: (RESM 1003 or RESM 1013 with a grade of C or better), and (ECON 2143 or (ECON 2013 and ECON 2023)). (Typically offered: Fall and Spring)

RESM 3901H. Honors Recreation and Sport Management Thesis Tutorial. 1 Hour.
Designed to provide the foundation for the Honors Thesis/Project. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy, RESMBS major, and RESM 1003 with a grade of C or better. (Typically offered: Fall, Spring and Summer)

RESM 391V. Special Topics in RESM. 1-3 Hour.
Designed to cover specialized topics not presented in recreation and sport management coursework. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{RESM 4003. Management in Recreation and Sport. 3 Hours.}

Management techniques for recreation and sport programs and facilities. Prerequisite: RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Fall and Spring)

RESM 4013. Contemporary Issues in Leisure and Sport. 3 Hours.
Discussion of selected topics and review of current literature in the recreation and sport field. Analysis of current trends and professional issues are emphasized. Certification at the instructor level or higher in at least 2 areas of expertise must be completed before a grade is assigned in this course. Prerequisite: Senior standing and RESM 1003 or RESM 1013 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{RESM 4023. Applied Outdoor Adventure Leadership. 3 Hours.}

This course considers the values and scope of outdoor recreation programs, leadership and skill development with practical experience in a wilderness environment. The course will include a canoe trip through the wilderness, and skill training in such areas as orienteering and rock climbing; and leadership development in interpersonal and processing skills. (Typically offered: Summer)

RESM 405V. Independent Study in Recreation and Sport. 1-3 Hour.
Provides student an opportunity to pursue special study of research problems. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{RESM 4253. Business of Sport. 3 Hours}

This course is designed as a "Study Tour" course. For the first part of the course, students will learn about the business of various sport organizations in different US locations. During the second part of the course, students will travel to the specific US location to connect with and learn from industry professionals and tour a variety of sport organizations and facilities. Course includes study trip; length based upon destination. Additional fees required. Course will be offered during the Intersession. Prerequisite: 2.0 minimum GPA, RESMBS majors with minimum of 60 hours completed, and instructor consent. (Typically offered: Fall, Spring and Summer)

RESM 4273. The Intramural Sports Program. 3 Hours.
Historical development, aim and objectives, organization, administration, units of competition, program of activities, schedule making, scoring plans, rules and regulations, awards, and special administrative problems. (Typically offered: Fall Odd Years)

\section*{RESM 4283. History and Application of American Sport. 3 Hours}

This survey course will explore the historical development of sport in American culture and the processes of change in American culture and sport from the 15th century to the present. Students will learn how to apply historical concepts to current issues in recreation and sport management. (Typically offered: Irregular)

\section*{RESM 440V. Internship. 1-12 Hour.}

This experiential based course requires 40 hours per week of work in an approved agency for a full semester. It is recommended that students register for the summer session after completion of their course work. Prerequisite: RESM 4411, RESM 3873 and two hours of RESM 2011 with grades of C or better. (Typically offered: Fall, Spring and Summer)

\section*{RESM 4411. Pre-Internship Preparation. 1 Hour}

Enables student preparation for internship experiences and eventual employment. Course will assist students in preparation of resumes; provide opportunities for interview practice; the development of job search and application skills, as well as other requisites for entering the professional workforce. Prerequisite: RESM 1003 or RESM 1013, both with a grade of C or better. Pre- or Corequisite: RESM 3873. (Typically offered: Fall)

\section*{RESM 480V. Workshop. 1-3 Hour.}

Workshop. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

RESM 498VH. Honors Recreation and Sport Management Thesis/Project. 1-3 Hour.
Designed to provide facilitation of the Honors Thesis/Project. Students and faculty work "one-on-one: to complete the honors thesis/project. Prerequisite: Honors candidacy, RESMBS major, and RESM 3901H. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{RESM 5023. Outdoor Adventure Leadership. 3 Hours}

This course considers the values and scope of outdoor recreation programs, leadership and skill development with practical experience in a wilderness environment. The course will include a canoe trip through the wilderness, and skill training in such areas as orienteering and rock climbing; and leadership development in interpersonal and processing skills. The graduate portion of the class is geared toward leading and trip planning for taking college age and older students into remote areas. Graduate degree credit will not be given for both RESM 4023 and RESM 5023. (Typically offered: Summer)

RESM 5093. Diversity and Inclusion in Recreation and Sport Management. 3 Hours.
Skills, knowledge, and concepts within recreation and sport which are appropriate to planning and implementing recreation and sport programs and services for the handicapped. (Typically offered: Irregular)

RESM 5273. The Intramural Sports Program. 3 Hours.
Historical development, aim and objectives, organization, administration, units of competition, program of activities, schedule making, scoring plans, rules and regulations, awards, and special administrative problems. Graduate degree credit will not be given for both RESM 4273 and RESM 5273. (Typically offered: Fall Odd Years)

RESM 5283. History and Application of American Sport. 3 Hours.
This survey course will explore the historical development of sport in American culture and the processes of change in American culture and sport from the 15th century to the present. Students will learn how to apply historical concepts to current issues in recreation and sport management. (Typically offered: Irregular)

\section*{RESM 5293. Athletics and Higher Education. 3 Hours.}

This course features an examination of the historical development of athletics within American institutions of higher learning with an emphasis upon concepts and ideals that underlie the developments and the major problems affecting contemporary intercollegiate athletics. The purpose of this course is to teach the learner about the development of intercollegiate athletics from the mid-19th century to today. A second purpose of this course is to examine the major issues facing sport administrators within intercollegiate athletics today. (Typically offered: Spring and Summer)

RESM 5333. Sport Media and Public Relations. 3 Hours.
The course will explore the relationship between media organizations and sport organizations, with an emphasis on the business of media rights, as well as public relations theories such as two-way symmetrical communication and agenda setting. Finally, the course will examine practical communication tactics employed by public relations practitioners such as image repair and crisis communications, and the issues presented by forms of new media. (Typically offered: Fall)

\section*{RESM 5463. Sports Facilities Management. 3 Hours.}

Considers basic elements and procedures in the planning, design, construction, operation, and maintenance of sport facilities; management considerations in conducting various types of events. (Typically offered: Summer)

RESM 560V. Advanced Workshop. 1-3 Hour.
Workshop. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

RESM 574V. Internship. 1-3 Hour.
This experiential-based course requires 135 hours per semester of work in a recreation or sport setting. (Typically offered: Fall, Spring and Summer)

RESM 5803. NCAA Governance, Legislation, \& Compliance. 3 Hours.
This course examines NCAA governance and both the NCAA legislative and infractions processes. As familiarity with and knowledge of NCAA legislation becomes increasingly important within the college athletics industry, a purpose of the course is to examine the NCAA's operative bylaws (11 through 17). The course will incorporate NCAA infractions cases as a method to learn application of the legislation. An overarching objective is to increase appreciation of NCAA rules compliance yet encourage critical thought of both the infractions process and legislative content. (Typically offered: Fall and Summer)
This course is cross-listed with LAWW 5803.
RESM 5813. Social Issues in Sport. 3 Hours.
Using sociological theories and scholarship to examine social and cultural influences on sport and physical activity. Course is based on a social justice framework and a cultural studies perspective. (Typically offered: Fall and Summer)

RESM 5853. Capstone in Recreation and Sport Management. 3 Hours.
Capstone course where students utilize program courses to solve administrative issues which may arise in an organization. Attention is given to how departmental organization, administrative practices and policies, strategic planning, personnel management, finances, and legal areas are integrated to create solutions to broadbased contemporary issues. (Typically offered: Spring)

\section*{RESM 5873. Leadership in Recreation and Sport Management Services. 3} Hours.
Considers research, theory, and practical applications of leadership principles utilized in the provision of recreation and sport management services. Focus is on motivation, attitude, communication, group dynamics, and problem solving. (Typically offered: Fall and Summer)

RESM 5883. Recreation and Sport Services Promotion. 3 Hours.
Examines specific strategies for promoting recreation and sport programs in the local community. (Typically offered: Summer)

RESM 5893. Public and Private Finance in Recreation and Sport Management. 3 Hours.
Develops an understanding of both public and private finance management for students in public and private management positions. Provides an understanding of the budgeting processes and techniques used in obtaining and controlling funds, including private sector finance problems in areas of credit, pricing, indexing, and debt management. (Typically offered: Fall)

RESM 600V. Master's Thesis. 1-18 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

RESM 605V. Independent Study. 1-3 Hour.
Independent study. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

RESM 612V. Directed Reading in Recreation and Sport. 1-3 Hour.
Critical analysis of literature in the area of recreation and sport. (Typically offered: Fall, Spring and Summer)

RESM 6133. Issues in RESM. 3 Hours.
A review of the significant social, demographic, behavioral, developmental, and technological issues that influence health, kinesiology, and recreation and sport management programs. Pre- or Corequisite: Doctoral level students only. (Typically offered: Irregular)

\section*{RESM 6533. Legal and Political Aspects. 3 Hours.}

An overview of major legislation affecting recreation and sport management professions; how to operate within these laws; and methods for influencing new legislation. Also discusses political aspects of professions both outside and inside government agencies. (Typically offered: Spring)
This course is cross-listed with LAWW 5923.

\section*{RESM 674V. Internship. 1-3 Hour.}

Students will learn diverse teaching techniques and implement them in an ongoing undergraduate recreation and sport management class serving as the teaching laboratory. The "what" "when" and "how" relative to integrating various teaching techniques with specific content areas in the class will be explored by both the student and the instructor. (Typically offered: Fall, Spring and Summer)

\section*{Russian (RUSS)}

\section*{Courses}

RUSS 1003. Elementary Russian I. 3 Hours.
First semester of Russian intended for students who have not studied the language before. Students learn how to read and write in the Cyrillic alphabet, as well as communicate on basic topics and gain cultural awareness about the modern Russian-speaking world. (Typically offered: Fall)

RUSS 1013. Elementary Russian II. 3 Hours.
A continuation of RUSS 1003. Continues developing basic listening, communicative, cultural, speaking, reading, and writing skills. Prerequisite: RUSS 1003. (Typically offered: Spring)

RUSS 2003. Intermediate Russian I. 3 Hours.
Focuses on mastering speaking, writing, reading, listening skills and cultural awareness using a variety of different texts and cultural material. Prerequisite: RUSS 1013. (Typically offered: Fall)

RUSS 2013. Intermediate Russian II. 3 Hours.
Continues expanding students' writing, reading, listening, and communicative skills by leading them to intermediate advanced level. Prerequisite: RUSS 2003. (Typically offered: Spring)

\section*{RUSS 3003. Advanced Russian I. 3 Hours.}

Through reading and discussing contemporary political and historical events students advance their speaking, listening, and writing skills. The course builds on and advances the language skills acquired in RUSS 2013 Intermediate Russian II. Prerequisite: RUSS 2013, or equivalent language skills that will be equal to four semesters of language instruction. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{RUSS 4113. Special Themes in Russian. 3 Hours.}

Covers topics not normally dealt with in period courses. Sample topics include gender and sexuality, war and memory, Holocaust, art and protest, modernism/ post-modernism, Jewish writers, and cinema. Topics announced one semester in advance. This course is taught in English. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with WLIT 4113.

\section*{RUSS 4123. Survey of Russian Literature from Its Beginning to the 1917 Revolution. 3 Hours.}

The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English. (Typically offered: Irregular)

RUSS 4133. Survey of Russian Literature Since the 1917 Revolution. 3 Hours. The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English with readings in English. (Typically offered: Irregular)
This course is cross-listed with WLIT 4133.
RUSS 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{RUSS 5113. Special Themes in Russian. 3 Hours.}

Covers topics not normally dealt with in period courses. Sample topics include gender and sexuality, war and memory, Holocaust, art and protest, modernism/ post-modernism, Jewish writers, and cinema. Topics announced one semester in advance. This course is taught in English. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with WLIT 5113.
RUSS 5123. Survey of Russian Literature from Its Beginning to the 1917 Revolution. 3 Hours.
The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English. Graduate degree credit will not be given for both RUSS 4123 and RUSS 5123. (Typically offered: Irregular)

RUSS 5133. Survey of Russian Literature Since the 1917 Revolution. 3 Hours. The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English with readings in English. Graduate degree credit will not be given for both RUSS 4133 and RUSS 5133. (Typically offered: Irregular)
This course is cross-listed with WLIT 5133.

RUSS 575V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{Secondary Education (SEED)}

\section*{Courses}

SEED 3283. Teaching Experiences in Education. 3 Hours.
The field experience is an essential component of the Bachelor of Arts in Teaching degree. The field experience allows Teacher Candidates (TC) to make further application of theoretical principles of teaching and learning. Teacher Candidates will be assigned placement in an area school for the length of the fall semester. During this assignment, the TC will both observe and participate in teaching. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Fall)

SEED 3993. Critical Studies in Literature for Adolescents. 3 Hours.
This course examines topics and issues that are of interest to scholars and educators who work with literature for adolescents. Students will read a diverse range of young adult fiction and nonfiction, including graphic novels, for the purpose of examining how the genre mirrors and critiques contemporary social and political topics, and how it imagines the relationship between teenagers and the social institutions they experience. (Typically offered: Fall and Spring)

SEED 4003. Teaching Secondary Science. 3 Hours.
Study of the methods and materials for teaching science. Includes philosophical, cognitive, and psychological dimensions of teaching science. The planning of instruction, microteaching, safety and liability issues, and the development of instructional materials are included. Prerequisite: STEM 3203. (Typically offered: Fall)

SEED 4022. Classroom Management Concepts. 2 Hours.
A number of different classroom management techniques are studied. It is assumed that a teacher must possess a wide range of knowledge and skills to be an effective classroom manager. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, SNEDBA, or DREDBA. (Typically offered: Fall and Spring)

SEED 4063. Disciplinary and Interdisciplinary Literacies in Education. 3 Hours. This course teaches the integration of reading, writing, and new literacies within the discipline and across disciplines. Theory and strategy are presented as integrated strands of the language process as presented in the context of instructional principles and suggested teaching practices. A solid research base is emphasized while keeping the focus on practical application. Prerequisite: Admission to one of the following: EGEDBA, SSEDBA, FREDBA, GREDBA, DREDBA or SNEDBA. (Typically offered: Fall and Spring)

SEED 4103. Methods of Teaching Secondary Social Studies I. 3 Hours. Study of the methods and materials in social studies. Includes philosophical, cognitive, and psychological dimensions of teaching. The planning of instruction, microteaching, and the development of instructional materials are included. Prerequisite: Admission to SSEDBA. (Typically offered: Fall and Spring)

SEED 4113. Teaching History, Government and Economics. 3 Hours. Study of the methods and materials in teaching history, government and economics. Includes philosophical, cognitive, and psychological dimensions of teaching, planning of instruction, microteaching, and the development of instructional materials are included. (Typically offered: Fall and Spring)

SEED 4203. English Language Arts/Speech \& Drama Methods of Instruction. 3 Hours.
This course provides an introduction to teaching English language arts (ELA) and speech/drama in the context of elementary, middle and high school settings. The topics, issues, methods, and materials encompassing philosophical, cognitive, and psychological dimensions of teaching the content area provide the major tenets of instruction. Prerequisite: Admission to EGEDBA or DREDBA program. (Typically offered: Fall and Spring)

\section*{SEED 4213. Issues and Trends in Literacy. 3 Hours.}

This course provides an examination of practices to teaching literacy, broadly defined. The topics, issues, methods, and materials encompassing philosophical, cognitive, and psychological dimensions of teaching provide the major tenets of instruction. Prerequisite: Admission to B.A.T. program leading to licensure. (Typically offered: Fall and Spring)
SEED 4443. Methods of Teaching Foreign Language K-12. 3 Hours.
Study of the methods and materials in the teaching of foreign language in K -12 settings as well as the theories of second language acquisition. Includes philosophical, cognitive, and psychological dimensions of teaching foreign languages. The planning of instruction, microteaching, and the development of instructional materials are included. Prerequisite: Admission to GREDBA, FREDBA, or SNEDBA. (Typically offered: Fall and Spring)
SEED 4523. Instructional Practices in Teaching Foreign Language. 3 Hours. A pedagogical studies course based on the theoretical and practical aspects of methods, techniques, and materials for effective teaching of foreign languages in K-12 schools. Prerequisite: Admission to B.A.T. Program leading to licensure. (Typically offered: Fall and Spring)

SEED 5003. Introduction to Teaching Secondary Science. 3 Hours.
Study of the methods and materials for teaching science. Includes philosophical, cognitive, and psychological dimensions of teaching science. The planning of instruction, microteaching, safety and liability issues, and the development of instructional materials are included. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

SEED 5013. Teaching Secondary Science: Theory to Practice. 3 Hours. This course is a continuation of SEED 5003, Introduction to Teaching Secondary Science, and is taken concurrently with CIED 528V, Secondary Cohort Teaching Internship. Students will receive instruction in advanced methodologies for teaching science and will reflect on their experiences in their internships. Corequisite: CIED 528V. Prerequisite: SEED 5003. (Typically offered: Fall)
SEED 5103. Methods of Teaching Secondary Social Studies I. 3 Hours. Study of the methods and materials in social studies. Includes philosophical, cognitive, and psychological dimensions of teaching. The planning of instruction, microteaching, and the development of instructional materials are included. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Summer)
SEED 5113. Teaching History, Government and Economics. 3 Hours. Study of the methods and materials in teaching history, government and economics. Includes philosophical, cognitive, and psychological dimensions of teaching, planning of instruction, microteaching, and the development of instructional materials are included. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Fall)

\section*{Social Work (SCWK) Courses}

SCWK 2133. Introduction to Social Work. 3 Hours.
Introduction to social work as a profession and to social welfare institutions from the perspective of the generalist, entry level social worker. Emphasis on empowerment function of social work. (Typically offered: Fall, Spring and Summer)

SCWK 3013. Child Advocacy I: Perspectives on Child Maltreatment and Child Advocacy. 3 Hours.
Introductory course in child advocacy studies training. Covers the history, comparative perspectives, legal framework, responses to child maltreatment, skills necessary to do the work, other pertinent issues pertaining to child maltreatment and child advocacy. (Typically offered: Fall)

SCWK 3163. On Death and Dying. 3 Hours.
Reviews the theory and humanistic importance of the concepts of death and dying in society. An experimental option and interdisciplinary faculty presenters will be part of the format. (Typically offered: Irregular)

\section*{SCWK 3193. Human Diversity and Social Work. 3 Hours.}

An introduction to information basic concepts related to human diversity and social work. Provides content on differences and similarities in the experiences, needs, and beliefs of people distinguished by race, ethnicity, culture, class, gender, sexual orientation, religion, physical or mental ability, age or national origin. Prerequisite: On-campus sections for Social Work major, minor, or Pre-SCWK students only; Online sections are open to all majors. (Typically offered: Fall, Spring and Summer)

SCWK 3233. Contemporary Issues in Juvenile Justice. 3 Hours.
This course is designed as a discussion of contemporary issues in juvenile justice. The focus is on the child and family system, including various theories related to underlying causes for involvement in the juvenile courts. This course will also describe the current workings of the juvenile court system and implications for the future. (Typically offered: Fall, Spring and Summer)

SCWK 3633. Child Welfare: 21st Century Perspectives. 3 Hours.
Study of the needs of deprived children with some attention to methods and standards of care. Cultural competence and family-centered practice are emphasized. (Typically offered: Irregular)

SCWK 399VH. Honors Course. 1-18 Hour.
Honors course. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

SCWK 4013. Child Advocacy II: Professional and System Responses to Child Maltreatment. 3 Hours.
Continuation of Child Advocacy Studies I. Focuses on the responses of professionals to allegations of child maltreatment. Covers competency-based skills training including forensic interviewing and documentation. Prerequisite SCWK 3013. (Typically offered: Spring)

SCWK 4023. Child Advocacy III: Responding to the Survivor of Child Abuse. 3 Hours.
Continuation of Child Advocacy Studies II. Provides training to recognize the effects of child maltreatment and to develop intervention strategies for children and their families. Outside experiential activities for this course involve court room observations. Prerequisite: SCWK 3013 and SCWK 4013. (Typically offered: Summer)

SCWK 405V. Special Topics in Social Work. 1-6 Hour.
Comprehensive study of various topics of importance in contemporary social welfare and social work practice. Prerequisite: Junior standing. (Typically offered: Irregular) May be repeated for degree credit.

\section*{SCWK 4073. Social Work Research and Technology I. 3 Hours.}

An overview of forms and sources of social work research including existing social data, techniques for collecting original social data, and techniques of organization, interpretation, and presentation of data. Students will also become proficient in the use of current technology for social work research and practice. Pre- or Corequisite: One of the following: STAT 2303, SOCI 3303 and SOCI 3301L, PSYC 2013, or ESRM 2403. Prerequisite: SCWK 4093 and SCWK 4153. (Typically offered: Fall and Spring)

SCWK 4093. Human Behavior and the Social Environment I. 3 Hours.
Provides a conceptual framework for knowledge of human behavior and the social environment with a focus on individuals. Social systems, life-course, assets, and resiliency-based approaches are presented. Special attention is given to the impact of discrimination and oppression on the ability to reach or maintain optimal health and well-being. Prerequisite: COMM 1313, PSYC 2003, SOCI 2013, SCWK 2133, and SCWK 3193 and (BIOL 1543 and BIOL 1541L, or ANTH 1013 and ANTH 1011L). (Typically offered: Fall and Spring)

\section*{SCWK 4103. Human Behavior and the Social Environment II. 3 Hours} This course applies the basic framework for creating and organizing knowledge of human behavior and the social environment acquired in HBSE I to the understanding of family, group, organizational, community, and global systems. Attention is given to discrimination, oppression, the impact of technology, and poverty at each system level. Prerequisite: SCWK 4093 and SCWK 4153. (Typically offered: Fall and Spring)

SCWK 4143. Addiction and the Family. 3 Hours.
Introduction to the biophysical basis of chemical and behavior compulsions with special focus on family impacts. Childhood development within addictive families is also examined. Social work intervention with substance abusing families is highlighted. (Typically offered: Irregular)

SCWK 4153. Social Welfare Policy. 3 Hours.
Describes and analyzes the policies and services rendered by local, state, regional, national, and international agencies as well as the policy implications for social work practice. Students prepare to advocate social policy changes designed to improve social conditions, promote social and economic justice, and to empower at-risk populations. Prerequisite: COMM 1313, PLSC 2003, SCWK 2133, and SCWK 3193. (Typically offered: Fall and Spring)

\section*{SCWK 4163. African American Perspectives of Trauma, Loss, and Recovery. 3} Hours.
Explores dimensions of trauma, loss, and recovery within the lived experiences of African American individuals, families, and communities in the United States. Prerequisite: Junior standing or instructor consent. (Typically offered: Fall) This course is cross-listed with AAST 4163.

SCWK 4173. Social Work with African American Families. 3 Hours.
An overview of historical and contemporary issues of African American families using culturally competent and strengths based frameworks. Focuses on the Black family as a social institution. Covers current trends affecting Black families, historical influences, evaluation of social policies, and programs of today. Prerequisite: Junior standing or instructor consent. (Typically offered: Irregular)
This course is cross-listed with AAST 4173.

\section*{SCWK 4183. Social Work With Elders. 3 Hours.}

Survey of theories of gerontology, service programs and unmet needs of the aging citizen. (Typically offered: Irregular)

SCWK 4213. The Diagnosis and Treatment of Substance Use Disorders. 3 Hours.

Explores the use and abuse of drugs and alcohol with an emphasis on evidencebased treatment approaches to help engage and treat chemically dependent clients. Best practices to be reviewed will include Motivational Interviewing (MI), Cognitive Behavioral Therapy (CBT), harm reduction approaches, Medication Assisted Treatment (MAT), and Dialectical Behavioral Therapy (DBT). (Typically offered: Fall, Spring and Summer)

SCWK 4243. Impact of Policy on Addiction. 3 Hours.
Explores the history of drug policy in the United States, focusing on the relationship between people, drugs, and the criminalization of certain substances. Examines how other countries have developed and utilized harm reduction and decriminalization approaches and policies. (Typically offered: Fall, Spring and Summer)

SCWK 4253. Spirituality and Social Work Practice. 3 Hours.
This course prepares students to respond competently and ethically to diverse spiritual and religious perspectives. Utilizing social work ethics and values as a guide, students will develop a comparative, critically reflective approach to practice. Prerequisite: SCWK 3193 or instructor consent. (Typically offered: Fall and Spring)

\section*{SCWK 4333. Social Work Practice I. 3 Hours.}

This is the first in the sequence of practice courses introducing students to the generalist approach to micro social work. This course focuses on developing a solid foundation for practice with individuals, including learning basic communication and helping skills, values, principles, and the connection of theory to practice. Pre- or Corequisite: SCWK 4103. Prerequisite: SCWK 4093 and SCWK 4153. (Typically offered: Fall and Spring)

\section*{SCWK 4343. Social Work Practice II. 3 Hours.}

This is the second course in the social work practice sequence, emphasizing theories, models, and techniques related to generalist practice with families and groups. The course elaborates on system theory as it impacts groups and families, and use of experiential teaching methods. Prerequisite: SCWK 4103 and SCWK 4333. (Typically offered: Fall and Spring)

\section*{SCWK 4412. Field Seminar I. 2 Hours.}

An integrative seminar to assist students in comparing their practice experiences, integrating knowledge acquired in the classroom, and expanding knowledge beyond the scope of the practicum setting. Corequisite: SCWK 4434 and social work majors only. (Typically offered: Fall, Spring and Summer)

SCWK 4422. Field Seminar II. 2 Hours.
An integrative seminar to assist students in comparing their practice experiences, integrating knowledge acquired in the classroom, and expanding knowledge beyond the scope of the practicum setting. Corequisite: SCWK 4444. Prerequisite: Social Work majors only. (Typically offered: Fall, Spring and Summer)

\section*{SCWK 4434. Social Work Internship I. 4 Hours.}

Arranged in connection with social service agencies. Credit is based on completion of all course objectives, including a minimum of 220 hours of field work under the supervision of a licensed social worker. Corequisite: SCWK 4412. Prerequisite: Social work major, SCWK 4073, SCWK 4103, and SCWK 4333. (Typically offered: Fall, Spring and Summer)

\section*{SCWK 4444. Social Work Internship II. 4 Hours.}

Arranged in connection with social service agencies. Credit is based on completion of all course objectives, including a minimum of 220 hours of field work under the supervision of a licensed social worker. Corequisite: SCWK 4422. Prerequisite: SCWK majors only, SCWK 4343, SCWK 4733 and SCWK 4434. (Typically offered: Fall, Spring and Summer)

SCWK 4523. Ethics and Aging. 3 Hours.
Explores the complexities of aging and ethical decision making with older adult clients. Students learn to identify ethical dilemmas and to appreciate structured ethical decision making, generalizing the information learned across all populations served. (Typically offered: Irregular)

SCWK 4643. Child Advocacy IV: Global Issues in Child Welfare. 3 Hours.
Prepares students to identify, assess, and respond to the various historical and contemporary factors impacting the welfare of children around the world and focuses on factors such as health, maltreatment, culture, policy, education, and social advocacy. (Typically offered: Fall, Spring and Summer)

SCWK 4733. Social Work Practice III. 3 Hours.
Students acquire and practice the skills, knowledge, and values necessary for culturally competent generalist social work practice with organizations and communities. Special attention is given to the implications of discrimination and oppression for attaining social and economic justice. Pre- or Corequisite: SCWK 4103 and SCWK 4343. Prerequisite: SCWK 4333. (Typically offered: Fall and Spring)

SCWK 4753. Grantwriting. 3 Hours.
Provides advanced theoretical and practical approaches to program planning and development in order to write grant applications. Emphasis is placed on the importance of developing the practice skills of program planning, understanding program performance, identifying funders, responding to requests for proposals and writing successful grant proposals. (Typically offered: Irregular)

SCWK 496V. Independent Study. 1-6 Hour.
Independent Study designed to meet the particular needs of individual students. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

SCWK 5003. Foundations of Culturally Competent Social Work Practice. 3 Hours.
The purpose of this course is the acquisition and demonstration of beginning graduate-level social work values and ethics, knowledge, and skills necessary for cultural competence in work with individuals, families, groups, organizations, communities, and global contexts. A multi-systems life-course conceptual framework is used. Prerequisite: Admission to the two-year or part-time MSW program. (Typically offered: Fall)

SCWK 5013. Bridge Course: Evidenced Based Social Work. 3 Hours. This course prepares MSW students to transition from the foundation course to the advanced concentration courses. Students will become familiar with the mission and conceptual framework underlying the advanced concentration and develop beginning knowledge of traditional and alternative approaches to client system assessment. Prerequisite: Admission into the advanced standing MSW program or completion of foundation courses. (Typically offered: Summer)

\section*{SCWK 505V. Special Topics in Social Work. 1-6 Hour.}

Comprehensive study of various topics of importance in contemporary social welfare and social work practice. Graduate degree credit will not be given for both SCWK 405V and SCWK 505V. (Typically offered: Irregular) May be repeated for degree credit.

\section*{SCWK 5073. Social Work Research and Technology II. 3 Hours.}

This course is intended to build the advanced research skills necessary to develop a research proposal and complete a thesis or capstone project. Students will plan the project, collect and analyze data and write a research report of their findings. Projects will focus on systematic evaluation of service delivery and personal professional practice. Prerequisite: Completion of year one for two-year students or summer semester for advanced standing students. (Typically offered: Fall)

SCWK 5083. Social Work With Elders. 3 Hours.
Survey of theories of gerontology, service programs and unmet needs of the aging citizen. Graduate degree credit will not be given for both SCWK 4183 and SCWK 5083. (Typically offered: Irregular)

SCWK 5093. Human Behavior and the Social Environment I. 3 Hours. Provides a conceptual framework for knowledge of human behavior and the social environment with a focus on individuals. Social systems, life-course, assets, and resiliency-based approaches are presented. Special attention is given to the impact of discrimination and oppression on the ability to reach or maintain optimal health and well-being. Graduate degree credit will not be given for both SCWK 4093 and SCWK 5093. Prerequisite: COMM 1313, PSYC 2003, SOCI 2013, SCWK 2133, and SCWK 3193 and (BIOL 1543 and BIOL 1541L, or ANTH 1013 and ANTH 1011L). (Typically offered: Fall and Spring)

SCWK 5103. Human Behavior and the Social Environment II. 3 Hours.
This course applies the basic framework for creating and organizing knowledge of human behavior and the social environment acquired in HBSE I to the understanding of family, group, organizational, community, and global systems. Attention is given to discrimination, oppression, the impact of technology, and poverty at each system level. Graduate degree credit will not be given for both SCWK 4103 and SCWK 5103. Prerequisite: SCWK 4093 or SCWK 5093 and SCWK 4153 or SCWK 5353. (Typically offered: Fall and Spring)

\section*{SCWK 5163. Social Work Management, Administration and Supervision. 3}

\section*{Hours.}

This course develops advanced skills in management, administration, and supervision in social work organizations. Emphasis is placed on developing leadership skills in ethics, budgeting, finance, resource development, information management, evaluation, staff hiring, supervision and development, and the use of technology in organizational leadership, development, and maintenance. Prerequisite: Graduate standing. (Typically offered: Irregular)

SCWK 5173. Advanced Practice with Families and Couples. 3 Hours.
The purpose of this course is to provide advanced understanding of the knowledge, skills and values needed to assess and intervene effectively with traditional and non-traditional families and couples. The course will examine social systems and life-course strengths approaches to understand how families and couples function. Students will design interventions. Prerequisite: Graduate status. (Typically offered: Irregular)

\section*{SCWK 5183. Advanced Practice with Individuals. 3 Hours.}

This course develops advanced skills in social work practice on a micro level. Students learn to analyze and compare practice models. They gain skills in selecting a practice model and integrating multiple models based on client needs. Prerequisite: Graduate status. (Typically offered: Irregular)

SCWK 5213. Advanced Practice in Behavioral and Mental Health. 3 Hours. This advanced course prepares students to identify mental disorders, plan intervention strategies with clients from a strengths perspective, and understand mental health programs through which services are delivered. Differential diagnosis and the impact of socioeconomic status, gender, race, and sexual orientation on diagnosis and treatment decisions are addressed. Prerequisite: Graduate status. (Typically offered: Irregular)
SCWK 5243. The Diagnosis and Treatment of Substance Use Disorders. 3 Hours.
The Diagnosis and Treatment of Substance Use Disorders course will explore the use and abuse of drugs and alcohol with an emphasis on evidence-based treatment approaches to help engage and treat chemically dependent clients. Best practices to be reviewed will include Motivational Interviewing (MI), Cognitive Behavioral Therapy (CBT), harm reduction approaches, Medication Assisted Treatment (MAT), and Dialectical Behavioral Therapy (DBT). (Typically offered: Fall, Spring and Summer)

\section*{SCWK 5253. Spirituality and Social Work Practice. 3 Hours.}

This course prepares students to respond competently and ethically to diverse spiritual and religious perspectives. Utilizing social work ethics and values as a guide, students will develop a comparative, critically reflective approach to practice. Prerequisite: Graduate status. (Typically offered: Fall and Spring)

\section*{SCWK 5263. Impact of Policy on Addiction. 3 Hours.}

The Drug Policy course will explore the history of drug policy within the United States, focusing on the relationship between people, drugs, and the criminalization of certain substances. This course will also examine how the War on Drugs has led to the collateral consequences of mass incarceration, racial discrimination in policy development and sentencing laws, and a treatment system that exists almost exclusively within the criminal justice system. Finally, this course will explore how other countries have developed and utilized harm reduction and decriminalization approaches and policies in order to shift treatment and financial resources from supply and enforcement to demand and treatment. (Typically offered: Fall, Spring and Summer)

SCWK 5273. Social Work Research and Technology I. 3 Hours.
An overview of forms and sources of social work research including existing social data, techniques for collecting original social data, and techniques of organization, interpretation, and presentation of data. Students will also become proficient in the use of current technology for social work research and practice. Graduate degree credit will not be given for both SCWK 4073 and SCWK 5273. Prerequisite: SCWK 4093 or SCWK 5093 and SCWK 4153 or SCWK 5353. Pre- or Corequisite: One of the following: STAT 2303, SOCI 3303 and SOCI 3301L, PSYC 2013, or ESRM 2403. (Typically offered: Fall and Spring)

\section*{SCWK 5333. Social Work Practice I. 3 Hours.}

This is the first in the sequence of practice courses introducing students to the generalist approach to micro social work. This course focuses on developing a solid foundation for practice with individuals, including learning basic communication and helping skills, values, principles, and the connection of theory to practice. Prerequisite: SCWK 4093 or SCWK 5093 and SCWK 4153 or SCWK 5353. Pre- or Corequisite: SCWK 4103 or SCWK 5103. (Typically offered: Fall and Spring)

\section*{SCWK 5343. Advanced Practice with Groups. 3 Hours.}

This course provides advanced knowledge, skills, and values needed to assess and intervene effectively with populations seen in the social work practice of group therapy. This course examines group dynamics, life-course and strengths perspectives, and client-centered assessment of needs and their application in agency settings. Prerequisite: Graduate status. (Typically offered: Irregular)

\section*{SCWK 5353. Social Welfare Policy. 3 Hours.}

Describes and analyzes the policies and services rendered by local, state, regional, national, and international agencies as well as the policy implications for social work practice. Students prepare to advocate social policy changes designed to improve social conditions, promote social and economic justice, and to empower at-risk populations. Graduate degree credit will not be given for both SCWK 4153 and SCWK 5353. Prerequisite: COMM 1313, PLSC 2003, SCWK 2133, and SCWK 3193. (Typically offered: Fall and Spring)

SCWK 5412. Foundation Field Seminar. 2 Hours.
A required course for MSW students without an accredited undergraduate degree in social work. The purpose of the seminar is to allow students to integrate classroom content with experiences in the field, to learn peer supervision and consultation, and to learn from the experiences of other students in the field. Corequisite: SCWK 5434. (Typically offered: Spring and Summer)

\section*{SCWK 5434. Foundation Field Internship. 4 Hours.}

This course is required of all graduate students entering the MSW program without an accredited undergraduate degree in social work. Minimum of 330 clock hours of agency-based professional social work practicum experience, supervised by a licensed MSW, is required. Corequisite: SCWK 5412. Prerequisite: SCWK 5003, SCWK 5333 (formerly SCWK 4333), SCWK 5273 (formerly SCWK 4073), SCWK 5093 (formerly SCWK 4093), and SCWK 5353 (formerly SCWK 4153). (Typically offered: Spring and Summer)

\section*{SCWK 5523. Ethics and Aging. 3 Hours.}

Explores the complexities of aging and ethical decision making with older adult clients. Identifies ethical dilemmas and develops structured ethical decision making skills. (Typically offered: Fall, Spring and Summer)

\section*{SCWK 5543. Social Work Practice II. 3 Hours.}

This is the second course in the social work practice sequence, emphasizing theories, models, and techniques related to generalist practice with families and groups. The course elaborates on system theory as it impacts groups and families, and use of experiential teaching methods. Graduate degree credit will not be given for both SCWK 4343 and SCWK 5543. Prerequisite: SCWK 4333 or SCWK 5333. (Typically offered: Fall and Spring)

SCWK 5643. Child Advocacy Studies IV: Global Issues in Child Welfare. 3 Hours.
Designed to prepare students to identify, assess, and respond to the various historical and contemporary factors impacting the welfare of children around the world. Focuses on factors such as health, maltreatment, culture, policy, education, and social advocacy. (Typically offered: Fall, Spring and Summer)

SCWK 5733. Social Work Practice III. 3 Hours.
Students acquire and practice the skills, knowledge, and values necessary for culturally competent generalist social work practice with organizations and communities. Special attention is given to the implications of discrimination and oppression for attaining social and economic justice. Graduate degree credit will not be given for both SCWK 4733 and SCWK 5733. Prerequisite: SCWK 4333 or SCWK 5333. Pre- or Corequisite: SCWK 4103 or SCWK 5103 and SCWK 4343 or SCWK 5543. (Typically offered: Fall and Spring)
SCWK 5753. Grant Writing. 3 Hours.
Develops skills to plan and design programs and write grant proposals. Emphasis on program planning, understanding program performance and accountability, identifying funders, responding to requests for proposals and persuasively writing a grant to secure needed financial resources. (Typically offered: Fall, Spring and Summer)

SCWK 596V. Independent Study. 1-6 Hour.
Independent study designed to meet the particular needs of individual graduate students. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SCWK 6000L. Thesis Laboratory. 0 Hours.}

This laboratory is required for completion of the thesis, which is developed through components of the graduate Research \& Technology sequence. Other courses in the graduate curriculum provide support for the conceptualization and development of the thesis. (Typically offered: Fall and Spring)

SCWK 6003. Advanced Social Work Practice Using the MSLC Perspective. 3 Hours.
Advanced Social Work Practice Using the Multi-Systems Life Course (MSLC) perspective teaches advanced practice behaviors with individuals, families, groups, organizations, and communities. This course focuses on integrating the arenas of advanced theory, research, policy practice, direct practice, required competencies and advanced practice behaviors using the MSLC perspective. Prerequisite: Admission into the advanced standing MSW program or completion of foundation courses. (Typically offered: Fall)
SCWK 6233. Advanced Social Work Practice With Children And Youth Using the MSLC Perspective. 3 Hours.
This course focuses on the development, revision, and impact of practice with children and youth from a Multi-Systems Life Course (MSLC) perspective. Historical trends as well as current practices will be examined with a focus on learning and improving social work practice skills. Prerequisite: SCWK 6003. (Typically offered: Spring)

\section*{SCWK 6243. Advanced Social Work Practice With Adults Using the MSLC Perspective. 3 Hours.}

This course focuses on the development, revision, and impact of practice with adults from a Multi-Systems Life Course (MSLC) perspective. Historical trends as well as current practices will be examined with a focus on learning and improving social work practice skills. Prerequisite: SCWK 6003. (Typically offered: Spring)

\section*{SCWK 6442. Advanced Field Seminar I. 2 Hours.}

The first of two advanced field seminars required of all students in the MSW program. The purpose of the seminar is to allow students to integrate classroom content with experiences in the field, to practice peer supervision and consultation, and to learn from the experiences of other students in the field. Corequisite:
SCWK 6444. Prerequisite: SCWK 5412 or SCWK 5442. (Typically offered: Fall)

\section*{SCWK 6444. Advanced Field Internship I. 4 Hours.}

This is the first of two advanced field internships required of all graduate students in the MSW program. A minimum of 330 clock hours of agency-based professional social work practicum experience, supervised by a licensed MSW, is required. Corequisite: SCWK 6442. Prerequisite: SCWK 5434 or SCWK 5444. (Typically offered: Fall)

SCWK 6452. Advanced Field Seminar II. 2 Hours.
This is the second of two advanced field seminars required of all students in the MSW program. The purpose of the seminar is to allow students to integrate classroom content with experiences in the field, to demonstrate peer supervision and consultation, and to learn from the experiences of other students in the field. Corequisite: SCWK 6454. Prerequisite: SCWK 6442. (Typically offered: Spring)

SCWK 6454. Advanced Field Internship II. 4 Hours.
This is the second of two advanced Field Internship courses required of all graduate students in the MSW program. A minimum of 330 clock hours of agency-based professional social work practicum experience supervised by a licensed MSW is required. Corequisite: SCWK 6452. Prerequisite: SCWK 6442. (Typically offered: Spring)

\section*{Sociology (SOCI) \\ Courses}

SOCI 2013. General Sociology (ACTS Equivalency = SOCI 1013). 3 Hours.
Applies a sociological perspective and develops critical thinking. Focuses on culture, identity, race, ethnicity, gender, class inequality, crime, deviance, globalization, social change, and social institutions. Overview of sociological theories and methods for systematic understanding of society. (Typically offered: Fall, Spring and Summer)

\section*{SOCI 2013H. Honors General Sociology. 3 Hours.}

Develops critical thinking, writing, and research skills by applying a sociological perspective. Focuses on culture, identity, race, ethnicity, gender, class inequality, collective behavior, crime, deviance, globalization, social change, and social institutions. Overview of sociological theories and methods for systematic understanding of society. (Typically offered: Fall, Spring and Summer)
This course is equivalent to SOCI 2013.
SOCI 2033. Social Problems (ACTS Equivalency = SOCI 2013). 3 Hours. Sociological analysis of major social problems, with emphasis placed on social justice, poverty and economic inequality, racial and ethnic relations, gender, crime, education, and other contemporary issues. Develops critical thinking. (Typically offered: Irregular)

\section*{SOCI 3001L. Social Science Data Analytics Lab. 1 Hour.}

Provides opportunities to implement social science data analytics skills through completing a series of data modules. The course prepares students to interpret data meaningfully within a variety of future employment fields. Students gain familiarity working with a number of marketable datasets, such as those generated by big data. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
SOCI 3011. Special Topics. 1 Hour.
Designed to develop the tools to write effectively in the social sciences, including skills related to organizing manuscripts, writing problem statements, identifying and synthesizing research, and revising and editing. Prerequisite: SOCI 2013 or CRIM 2003. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.
This course is cross-listed with CRIM 3011.

\section*{SOCI 3023. Criminological Theory. 3 Hours.}

Advanced survey of theories of crime causation. Examines broad sociological paradigms, as well as both individual and aggregate-level explanations of crime causation. Applies criminological theories to contemporary issues associated with crime and criminal justice. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is equivalent to CRIM 3023.

\section*{SOCI 3053. Serial Crime. 3 Hours.}

Exploration of the historical development of criminal profiling related to serial homicide, serial sex crimes, serial stalking, and serial arson. Examination of behavioral and criminological theories, focusing on different profiling techniques and their strengths and challenges. Case studies and published research on serial crime will be used whenever possible. Prerequisite: SOCI 2013. (Typically offered: Irregular)
This course is cross-listed with CRIM 3053.

\section*{SOCI 3063. Victimology. 3 Hours.}

Introduction to the scientific study of victimization. Examines conceptual boundaries of victimology research, covers theories, statistics and trends relevant to victimology; reviews the victim blaming and defending perspectives; explores practical applications of victimology, and evaluates the social, legal, and criminological issues that stem from concern over victims. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is cross-listed with CRIM 3063.
SOCI 3153. Urban Sociology. 3 Hours.
Examines growth of cities, urban inequalities, politics, social movements, built environment, ecology, sustainability, cultural identity, global cities, and immigration. Implications considered for policy and planning. Prerequisite: SOCI 2013. (Typically offered: Irregular)

\section*{SOCI 3173. Latinos, Migration, and the U.S. South. 3 Hours.}

Examines social, economic, and population changes in the U.S. South, including shift of Latinos' settlement patterns, actions taken by policy makers to adapt to new demographic context, and mechanisms immigrants use to facilitate their induction into the southern community. Prerequisite: SOCI 2013. (Typically offered: Fall)

\section*{SOCI 3193. Race, Class, Gender, and Sexuality. 3 Hours.}

A critical examination of the layers of the global systems that shape and construct social inequalities. Overview of sociological theories and research on how race, class, gender, and sexuality intersect and function separately to organize systems of inequality. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

SOCI 3193H. Race, Class, Gender, and Sexuality in America. 3 Hours.
A critical examination of the layers of the global systems that shape and construct social inequalities. Overview of sociological theories and research on how race, class, gender, and sexuality intersect and function separately to organize systems of inequality. Prerequisite: Honors candidacy, SOCI 2013 or SOCI 2013H and junior standing. (Typically offered: Fall and Spring)
This course is equivalent to SOCI 3193.

\section*{SOCI 3203. Corrections and Social Control. 3 Hours.}

Overview of correctional systems and punishment. Focuses on theories of correctional philosophies, practices, and procedures, along with the historical development and modern practices of corrections, sentencing, facilities, and issues facing correctional populations. Also examines principles and practices of treatment and rehabilitation in correctional settings. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring)
This course is cross-listed with CRIM 3203.

\section*{SOCI 3223. Social Psychology. 3 Hours.}

A sociological approach to the study of the interaction between society and the self with an emphasis upon reference groups such as the family, friends, work, lifestyle, and deviance. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

\section*{SOCI 3263. Families and Social Change. 3 Hours.}

A sociological analysis of the diversity and inequality that exists among families, and the ways in which families have and continue to change over time. Topics discussed include sex, gender, and sexuality, race, ethnicity, and immigration, class and economic transformations. Prerequisite: SOCI 2013. (Typically offered: Spring)

SOCI 3273. Sociology of China. 3 Hours.
Examines many aspects of Chinese people, their cultures, and practices, and also looks at Chinese Americans in the U.S. both historically and currently. Prerequisite: SOCI 2013. (Typically offered: Irregular)
This course is cross-listed with AIST 3273.
SOCI 3301L. Social Data and Analysis Laboratory. 1 Hour.
The lab is an extension of the lecture in SOCI 3303. Using a variety of computer packages, the lab provides practical experience in managing and analyzing social data. Corequisite: SOCI 3303. (Typically offered: Fall and Spring)

SOCI 3301M. Honors Social Data and Analysis Laboratory. 1 Hour.
The lab is an extension of the lecture in SOCl 3303 . Using a variety of computer packages, the lab provides practical experience in managing and analyzing social data. Corequisite: SOCI 3303H. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)

This course is equivalent to SOCI 3301L.

\section*{SOCI 3303. Social Data and Analysis. 3 Hours.}

Introduction to descriptive and inferential statistics, with special emphasis on common techniques in social research. Course focuses on the practical usage of data and application to real-world issues. Corequisite: SOCI 3301L. Prerequisite: SOCI 2013 and junior standing. (Typically offered: Fall and Spring)

\section*{SOCI 3303H. Honors Social Data and Analysis. 3 Hours.}

Introduction to descriptive and inferential statistics, with special emphasis on common techniques in social research. Course focuses on the practical usage of data and application to real-world issues. Corequisite: SOCI 3301L. Prerequisite: Honors candidacy, SOCI 2013 and junior standing. (Typically offered: Fall and Spring)
This course is equivalent to SOCI 3303.
SOCI 3313. Social Research. 3 Hours.
Study and experience in implementing a methodological "toolbox," including theorizing, designing, measuring, sampling, collecting, interpreting, and reporting empirical results for real-world social research applications. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

SOCI 3313H. Honors Social Research. 3 Hours.
Study and experience in implementing a methodological "toolbox," including theorizing, designing, measuring, sampling, collecting, interpreting, and reporting empirical results for real-world social research applications. Prerequisite: Honors candidacy, SOCI 2013 and junior standing. (Typically offered: Fall and Spring) This course is equivalent to SOCI 3313.

SOCI 3413. Special Topics. 3 Hours.
Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: SOCI 2013. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SOCI 3413H. Honors Special Topics. 3 Hours.}

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: Honors candidacy and SOCI 2013 or SOCI 2013H. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
This course is equivalent to SOCI 3413.

\section*{SOCI 3423. Social Theory. 3 Hours.}

Examines the philosophical underpinnings of sociology; introduces notable classical and contemporary social theorists; develops an appreciation for the ways classical works continue to form the basis for contemporary social thought. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

\section*{SOCI 3423H. Honors Social Theory. 3 Hours.}

Examines the philosophical underpinnings of sociology; introduces notable classical and contemporary social theorists; develops an appreciation for the ways classical works continue to form the basis for contemporary social thought. Prerequisite:
Honors standing and SOCI 2013. (Typically offered: Fall and Spring)
This course is equivalent to SOCI 3423.
SOCI 3453. Immigration and Crime. 3 Hours.
Provides a comprehensive foundation of the relationship between immigration, one of the most powerful forces that influences a nation's social fabric, and crime. Focuses not only on U.S. immigration but also crime in the global context. Prerequisite: SOCI 2013. (Typically offered: Fall)
This course is cross-listed with CRIM 3453.
SOCI 3513. Criminal Evidence. 3 Hours.
Examination of how evidence is collected, processed, and presented in court, with an emphasis on the competing interests of crime control and individual liberties. Prerequisite: CRIM 2003. (Typically offered: Fall)

SOCI 3723. Deviant Behavior. 3 Hours.
Sociological overview of disconcerting conduct: its definition, theoretical understandings and research. Specific topics may include: interpersonal violence, self-destructive disorders, controversial lifestyles, substance abuse, as well as the relationship between inequality and disturbing acts. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is cross-listed with CRIM 3723.

\section*{SOCI 399VH. Honors Course. 1-6 Hour.}

Honors. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

\section*{SOCI 4003. Internship in Sociology. 3 Hours.}

Supervised experience in municipal, county, or state agencies, or any other agency which is approved by the instructor. Prerequisite: SOCI 2013. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{SOCI 4013. Special Topics in Sociology. 3 Hours.}

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{SOCI 4013H. Honors Special Topics in Sociology. 3 Hours.}

Offerings vary; check for particular course topics offered. Designed to cover specialized topics in greater depth than regular survey courses provide. Prerequisite: Honors candidacy and SOCI 2013 or SOCI 2013H. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.
This course is equivalent to SOCI 4013.

\section*{SOCI 403V. Individual Study in Sociology. 1-3 Hour.}

In-depth individual or group study with a faculty member on advanced sociological readings and/or participation in supervised research as an experience-based course. Faculty permission required in advance of enrollment. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{SOCI 4043. Seminar in Sociology. 3 Hours.}

Capstone course in sociology. This course is intended to apply and demonstrate the knowledge and skills developed over a college career. Sociological theory and current research findings are applied to everyday life. Emphasis is given to personal, professional and career development. Prerequisite: Senior standing. (Typically offered: Fall and Spring)

SOCI 4063. Organizations in Society. 3 Hours.
Review of literature on work and organizations, with focus on race, class, gender inequalities, and interactions between society and organizations; discussion of topics related to white collar crime and deviant behavior inside modern corporations. Prerequisite: SOCI 2013. (Typically offered: Spring)
This course is cross-listed with CRIM 4063.

SOCI 4143. Juvenile Justice. 3 Hours
Examination of juvenile justice system and juvenile crime, including historica development of the system and treatment of juvenile delinquents along with legal, correctional, and treatment processes and philosophies. Emphasis on current issues facing delinquents, the system, and delinquency prevention in addition to trends in juvenile crime. Prerequisite: CRIM 2003. (Typically offered: Fall and Spring) This course is cross-listed with CRIM 4143.

SOCI 4153. Race and Society. 3 Hours.
Sociological study of race within the U.S., with an emphasis on understanding how race operates within contemporary social institutions. Critical engagement and discussion of topics relating to race will be encouraged. Prerequisite: SOCI 2013 or AAST 1003 or AAST 2023. (Typically offered: Fall)
This course is cross-listed with AAST 4153.
SOCI 4183. Social Network Analysis. 3 Hours.
Introduces the fundamentals of Social Network Analysis (SNA), and its applications for research in various social science fields. Prerequisite: SOCI 2013. (Typically offered: Fall)
This course is cross-listed with PLSC 4613.

\section*{SOCI 4233. Death Penalty. 3 Hours.}

Examines problems and social issues related to the death penalty in the U.S., including the history of capital punishment, Supreme Court decisions, how various jurisdictions seek the death penalty, the comparative costs of incarceration and execution, miscarriages of justice, and how the criminal justice system responds to these issues. Prerequisite: CRIM 2003 or SOCI 2013. (Typically offered: Irregular) This course is cross-listed with CRIM 4233.

\section*{SOCI 4253. Social Impact of Data Analytics. 3 Hours.}

Teaches students to assess social science data by raising awareness regarding the social impacts of data analytics. Particular attention is paid to the ethical issues involved in the potential benefits and risks across each of the four phases of the data cycle: data collection, consolidation, analytics, and use. Prerequisite: SOCI 2013. (Typically offered: Spring)

\section*{SOCI 4263. Sociology of Mental Health and IIIness. 3 Hours.}

Develops critical thinking, writing, and research skills by applying a sociological perspective to studying mental health and illness, including definitions, theories, measurements, and social correlates. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)

\section*{SOCI 4263H. Honors Sociology of Mental Health and IIIness. 3 Hours.}

Develops critical thinking, writing, and research skills by applying a sociological perspective to studying mental health and illness, including definitions, theories, measurements, and social correlates. Prerequisite: SOCI 2013. (Typically offered: Fall and Spring)
This course is equivalent to SOCI 4263.

\section*{SOCI 4603. Environmental Sociology. 3 Hours.}

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. Prerequisite: Junior or above standing. (Typically offered: Spring) This course is cross-listed with HDFS 4603, SUST 4603.

SOCI 5001. Proseminar. 1 Hour.
An informal forum for graduate students and faculty to present and discuss ongoing research interests as well as the current state of the discipline. Prerequisite:
Graduate standing. (Typically offered: Fall)
SOCI 500V. Advanced Problems in Sociology. 1-3 Hour.
Individual research on problems or problem areas. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

\section*{SOCI 5013. Advanced Social Research. 3 Hours.}

An examination of experimental and quasi-experimental designs used in the analysis of sociological data with focus upon appropriate units of analysis and design selection, sampling, interview techniques, and questionnaire construction. Prerequisite: Graduate standing or instructor consent. (Typically offered: Fall)

\section*{SOCI 503V. Special Topics. 1-6 Hour.}

Designed to cover specialized topics not usually presented in depth in regular courses. Prerequisite: Graduate Standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit

SOCI 5083. Applied Qualitative Research. 3 Hours.
An introduction to research strategies including intensive interviewing, participant observational fieldwork, content analysis, historical analysis, and comparative research. Emphasis on the practical aspects of designing and executive research involving multiple methods of data gathering and analysis. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{SOCI 5113. Seminar in Social Inequality. 3 Hours.}

Major theories of stratification; types of stratification systems, comparisons of modern and traditional systems; emergent trends. Prerequisite: Graduate standing. (Typically offered: Irregular)

SOCI 5133. The Community. 3 Hours.
A sociological analysis of the theory, methods and materials used in the study of the community. Prerequisite: Graduate standing. (Typically offered: Irregular)

SOCI 5233. Theories of Deviance. 3 Hours.
A survey of major theories-classical, developmental, ecological, functionalist, conflict, subcultural, control, and phenomenological-explaining morally condemned differences in society. Particular emphasis is on practical implications of each perspective for policy and social control. Prerequisite: Graduate standing. (Typically offered: Irregular)

SOCI 5253. Classical Social Theory. 3 Hours.
A survey of social theory up to the late 20th century. An introduction to the classical sociological themes that continue to inform research, analysis, and policy formation. Major issues will include the relationship between the individual and the community, and the sources of stability, conflict, and change. Prerequisite: Graduate standing. (Typically offered: Fall)

\section*{SOCI 5263. Contemporary Social Theory. 3 Hours.}

Analysis of contemporary social theories \& major theoretical debates. Emphasis is on critical evaluation \& application of theoretical perspectives to current social issues affecting families and communities. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{SOCI 5311L. Applied Data Analysis Laboratory. 1 Hour}

Provides instruction for data transformations required for the advanced statistical procedures used in the Statistical Package for the Social Sciences (SPSS). Also provides instruction in the use of advanced statistical procedures covered in SOCI 5313. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{SOCI 5313. Applied Data Analysis. 3 Hours.}

Covers basic concepts and applications of the general linear model to a variety of sociological research issues and problems. Also provides an introduction to binary dependent and multivariate categorical data analysis for sociological research.
Prerequisite: Graduate standing. Familiarity with statistical computer programs is assumed. (Typically offered: Spring)

\section*{SOCI 5413. Seminar in Criminological Theory. 3 Hours.}

An examination of the causation of crime, focusing primarily on sociological theories. Prerequisite: Graduate standing. (Typically offered: Spring)

SOCI 5423. Research in Criminology. 3 Hours.
Examination of empirical research in criminology, focusing on methodological problems, strategies, and findings. Prerequisite: Graduate standing. (Typically offered: Fall)

SOCI 5433. Victimization. 3 Hours
Study of the causes, correlates, and consequences of victimization, focusing on theories of victimization and the role of victims in the criminal justice system. Prerequisite: Graduate standing. (Typically offered: Irregular)

SOCI 5443. Seminar in Terrorism and Homeland Security. 3 Hours.
Examines the evolution of modern terrorism and homeland security, focusing primarily on the dynamics of American terrorist movements (ideologies, motives, and tactics). Social, political, and criminal justice responses to terrorism are also considered. (Typically offered: Spring)

SOCI 5453. Social Control. 3 Hours.
Study of sociological theories and research on formal social control, primarily institutional responses to criminal behavior. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{SOCI 5473. Crime and Commuity. 3 Hours.}

Examination of how neighborhood structural characteristics and social organization affect crime, as well as how the presence of crime and disorder in a community can affect neighborhood social organization. Prerequisite: Graduate standing. (Typically offered: Irregular)

SOCI 5503. Research Internship. 3 Hours.
Supervised research experience. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer)

\section*{SOCI 5603. Environmental Sociology. 3 Hours.}

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. Graduate degree credit will not be given for both SOCI 4603 and SOCI 5603. (Typically offered: Spring)
This course is cross-listed with HDFS 5603.
SOCI 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Southern Studies (SOST)}

\section*{Courses}

SOST 2003. Introduction to Southern Studies. 3 Hours.
A three credit hour interdisciplinary course that explores the history, politics, literature, and culture of the U.S. South from the colonial era to the present. Students who minor in Southern Studies will be required to take Introduction to Southern Studies. (Typically offered: Fall Odd Years)

SOST 399V. Special Topics in Southern Studies. 1-3 Hour.
Topics that explore the American South which are not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{Space and Planetary Sciences (SPAC)}

\section*{Courses}

SPAC 5033. Astrophysics I: Stars and Planetary Systems. 3 Hours.
Stellar structure and evolution, the properties of the solar system, and extrasolar planetary systems. (Typically offered: Fall Odd Years)
This course is cross-listed with ASTR 5033.

SPAC 5123. Internship. 3 Hours.
Internship for graduate students in the space and planetary sciences graduate degree programs and concentrations in the graduate programs in physics, biology, geosciences and mechanical engineering. Students conduct a phase of their research, normally for one month, at a national or industrial laboratory in North America or overseas. (Typically offered: Fall and Spring)

SPAC 5161. Seminar. 1 Hour.
Seminars organized by the Center for Space and Planetary Sciences covering topics on the cutting edge of research in the field for graduate students conducting research with a faculty member in the space and planetary sciences as part of their graduate degree programs or concentrations in the graduate programs in physics, biology, geology, geography and mechanical engineering. (Typically offered: Fall and Spring) May be repeated for up to 8 hours of degree credit.

SPAC 5211. SPAC Proseminar. 1 Hour.
Introductory course consisting of discourses and case studies in ethics, communications and public policy in the administration of space and planetary sciences. Prerequisite: Admission to program or instructor consent. (Typically offered: Spring)

\section*{SPAC 5313. Planetary Atmospheres. 3 Hours.}

Origins of planetary atmospheres, structures of atmospheres, climate evolution, dynamics of atmospheres, levels in the atmosphere, the upper atmosphere, escape of atmospheres, and comparative planetology of atmospheres. (Typically offered: Irregular)

SPAC 5413. Planetary Geology. 3 Hours.
Exploration of the solar system, geology and stratigraphy, meteorite impacts, planetary surfaces, planetary crusts, basaltic volcanism, planetary interiors, chemical composition of the planets, origin and evolution of the Moon and planets. (Typically offered: Spring Even Years)

\section*{SPAC 5553. Astrobiology. 3 Hours.}

Discusses the scientific basis for the possible existence of extraterrestrial life. Includes origin and evolution of life on Earth, possibility of life elsewhere in the solar system (including Mars), and the possibility of life on planets around other stars. Prerequisite: Instructor consent. (Typically offered: Spring Even Years)
This course is cross-listed with BIOL 5553.
SPAC 5613. Astronautics. 3 Hours.
Study of spacecraft design and operations. Prerequisite: Admission to program or instructor consent. (Typically offered: Irregular)

SPAC 600V. Master's Thesis. 1-10 Hour.
Master's thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{SPAC 700V. Doctoral Dissertation. 1-18 Hour.}

Doctoral dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Spanish (SPAN)}

\section*{Courses}

SPAN 1003. Elementary Spanish I (ACTS Equivalency = SPAN 1013). 3 Hours. A first introduction of Spanish for true beginners--pronunciation, aural comprehension, speaking and reading in Spanish--with an objective towards active mastery of basic grammatical structures. (Typically offered: Fall and Spring)

SPAN 1013. Elementary Spanish II (ACTS Equivalency SPAN 1023). 3 Hours. Elementary courses stress pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery basic grammar and limited reading ability. (Typically offered: Fall and Spring)
SPAN 2003. Intermediate Spanish I (ACTS Equivalency = SPAN 2013). 3 Hours.
Intermediate courses lead to greater facility in spoken language and to more advanced reading skills. (Typically offered: Fall and Spring)

SPAN 2013. Intermediate Spanish II (ACTS Equivalency = SPAN 2023). 3 Hours.
Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Fall and Spring)
SPAN 2013H. Honors Intermediate Spanish II. 3 Hours.
Continued development of basic speaking comprehension and writing skills and intensive development of reading skills. (Typically offered: Fall and Spring) This course is equivalent to SPAN 2013.

\section*{SPAN 2123. Spanish for Heritage Speakers I. 3 Hours.}

Designed for students from a Spanish-speaking background with limited to no formal study of the language. Literacy development in Spanish with emphasis on building vocabulary, plus reading and writing skills. Prerequisite: Students who have taken one year or less of Spanish. Placement by exam or by Spanish Advisor. (Typically offered: Irregular)

\section*{SPAN 3003. Advanced Spanish. 3 Hours.}

Further intensive practice to strengthen written and oral expression. Includes a review of the essentials of Spanish grammar. Prerequisite: SPAN 2013 or equivalent. (Typically offered: Fall and Spring)

\section*{SPAN 3033. Conversation and Composition. 3 Hours.}

Three hours per week of guided conversation (oral) and composition (written) practice for the post-intermediate student. Prerequisite: SPAN 3003. (Typically offered: Fall and Spring)

SPAN 3103. Cultural Readings. 3 Hours.
A course designed to build vocabulary and to strengthen reading skills and oral expression through extensive practice with culturally authentic materials. Prerequisite: SPAN 2013 or equivalent. (Typically offered: Fall and Spring)

\section*{SPAN 3113. Introduction to Literature. 3 Hours.}

Further development of reading skills and introduction to literary commentary and analysis. Prerequisite: (Both SPAN 3003 and SPAN 3103 or only SPAN 3123), or equivalent. (Typically offered: Fall and Spring)

\section*{SPAN 3113H. Honors Introduction to Literature. 3 Hours.}

Further development of reading skills and introduction to literary commentary and analysis. Prerequisite: Honors standing, both SPAN 3003 and SPAN 3103 or only SPAN 3123. (Typically offered: Irregular)
This course is equivalent to SPAN 3113.

\section*{SPAN 3123. Spanish for Heritage Speakers II. 3 Hours.}

Designed for students from a Spanish-speaking background with some formal training in Spanish and/or the ability to read and write in the language. Continue developing language skills, plus introduction to the U.S. Latino literature and culture. Prerequisite: Students who have taken two years of Spanish in High School, SPAN 2123 or placement exam. (Typically offered: Fall and Spring)

SPAN 3883. Translation and Interpretation I: Spa/Eng - Eng/Spa. 3 Hours. Designed for learners who want to improve their proficiency in both Spanish and English while introducing translation and interpretation theory with hands-on practice. Prerequisite: Both SPAN 3003 and SPAN 3103, or only SPAN 3123, or instructor consent. (Typically offered: Irregular)

\section*{SPAN 399VH. Honors Spanish Course. 1-6 Hour.}

Honors thesis research and writing under the direction of a faculty member in the department. Prerequisite: Junior standing. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.

SPAN 4003. Advanced Grammar. 3 Hours.
For majors and advanced students covering the problematic areas of Spanish syntax and usage. Prerequisite: SPAN 3003 and SPAN 3103. (Typically offered: Fall)

SPAN 4073. Introduction to Hispanic Linguistics. 3 Hours.
Deepens students' knowledge of the Spanish language through an introduction to the discipline of Linguistics, which is the field of science that studies human language. Areas of Hispanic linguistics that will be covered include phonology (sound system), morphology (word structure), and syntax (sentence structure). Prerequisite: SPAN 4003. (Typically offered: Irregular)

SPAN 4103. Monuments of Spanish Literature I. 3 Hours.
Monuments of the major works of Spanish literature from El Cid through the 17th century. Prerequisite: SPAN 3113. (Typically offered: Irregular)

SPAN 4113. Monuments of Spanish Literature II. 3 Hours.
Monuments of Spanish literature from the 18th century to the present. Prerequisite: SPAN 3113. (Typically offered: Irregular)

\section*{SPAN 4123. Spanish for Heritage Speakers III. 3 Hours.}

Continued development and expansion of Spanish writing skills. Special emphasis given to active grammar, textual production, and critical thinking for writing in academic and professional settings. Students' work involves research, reading, composing, delivering presentations, writing and proofreading different types of essays. Prerequisite: Students who have taken three or more years of Spanish in high school, AP Spanish, SPAN 3123 or placement exam. (Typically offered: Irregular)

\section*{SPAN 4133. Survey of Spanish-American Literature I. 3 Hours.}

Survey of Spanish-American literature from the Colonial period to mid-19th Century, including pre-Hispanic Indigenous Literatures. Prerequisite: SPAN 3113. (Typically offered: Irregular)

\section*{SPAN 4193. Survey of Spanish-American Literature II. 3 Hours.}

Survey of Spanish-American literature from Modernism to the present. Prerequisite: SPAN 3113. (Typically offered: Irregular)

\section*{SPAN 4213. Spanish Civilization. 3 Hours.}

A wide-ranging exploration of Spanish history and culture from the Middle Ages to the present. Prerequisite: SPAN 3113. (Typically offered: Irregular)

\section*{SPAN 4223. Latin American Civilization. 3 Hours.}

Latin American civilization. Prerequisite: SPAN 3113. (Typically offered: Irregular)
SPAN 4243. Literature and Culture in the Hispanic United States. 3 Hours. An exploration of the history and culture, art and politics of the major Hispanic groups in the United States. Focus on contemporary attitudes and issues. Prerequisite: SPAN 3113. (Typically offered: Irregular)

SPAN 4253. Latin American Cinema and Society. 3 Hours.
This course examines key issues in Latin American culture and history through films, documentaries, and literary and cultural texts. Topics included are: Human Rights, Ethnicity, Gender, Revisions of the past. Prerequisite: SPAN 3113. (Typically offered: Irregular)

\section*{SPAN 4333. Business Spanish I. 3 Hours.}

Enhances ability to interact in Spanish-language business environments by providing a solid foundation in vocabulary and structure in functional business areas such as company structure, banking and accounting, capital investment, goods and services, marketing, finance, and import-export. Students commit to 15 hours during the semester to work on business-related projects with the Spanish-speaking community of Northwest Arkansas. Prerequisite: (SPAN 3003 and SPAN 3103) or SPAN 3123. (Typically offered: Fall and Spring)

\section*{SPAN 4563. Latino Youth Biliteracy Service Learning Project. 3 Hours.}

The Latino Youth Biliteracy Project is a service learning course for students in Spanish and Latin American and Latino Studies. Readings on Latino education policies and challenges, bilingualism, and the immigrant experience. Students commit from 15 to 30 hours of mentoring Latino youth at local schools during the semester (in addition to class meeting times) and complete a research project on Latino education. Prerequisite: SPAN 3113 or SPAN 3123 or instructor consent. (Typically offered: Irregular)

SPAN 4583. Advanced Spanish for Health Professions. 3 Hours
Advanced Spanish for Health Professions is an upper level service learning course for students in Spanish and Latin American and Latino Studies. Development of Spanish language for healthcare providers. Readings on the state of Latino health care in Arkansas and in the United States. Students will work 30 hours during the semester on health related projects with the Spanish speaking community of NWA. Prerequisite: SPAN 3003 and SPAN 3103 or SPAN 3123. (Typically offered: Irregular)

\section*{SPAN 4623. Advanced Proficiency in Spanish. 3 Hours.}

Work in translation and composition, oral proficiency, and phonetics and pronunciation for students who still seek further practice in skills development to extend their fluency and proficiency in the second language. Suitable for nonnative speaking students considering becoming teachers of Spanish. Prerequisite: SPAN 4003 or instructor consent. (Typically offered: Irregular)

SPAN 470V. Special Topics. 1-3 Hour.
May be offered in a topic not specifically covered by courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

SPAN 475V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Fall and Spring) May be repeated for degree credit.

\section*{SPAN 4873. Creative Writing in Spanish. 3 Hours.}

Introduces students to basic skills and tools needed to be a creative writer in Spanish by exploring poetry, short story, and the short novel. Prerequisite: SPAN 3033 and SPAN 3103. (Typically offered: Fall Even Years)

SPAN 5073. Introduction to Hispanic Linguistics. 3 Hours.
Deepens students' knowledge of the Spanish language through an introduction to the discipline of Linguistics, which is the field of science that studies human language. Areas of Hispanic linguistics that will be covered include phonology (sound system), morphology (word structure), and syntax (sentence structure). (Typically offered: Irregular)

SPAN 5203. Medieval Spanish Literature. 3 Hours.
From the 'Jarchas' to the Celestina. (Typically offered: Irregular)
SPAN 5233. Golden Age Novel. 3 Hours.
Major works of Spanish prose fiction from the 16th and 17th centuries, with close reading of major works. (Typically offered: Irregular)

SPAN 5243. Golden Age Poetry and Drama. 3 Hours.
History and development of those genres in the 16th and 17th centuries, with close reading of major works. (Typically offered: Irregular)

\section*{SPAN 5253. Colonial Literature and Culture. 3 Hours.}

An introductory course to the history, culture and literature of colonial Spanish America from 1492 until 1810. The course will cover representative colonial and indigenous texts and their contexts including Renaissance, Baroque, and travel literature of the Eighteenth Century. The course will be taught in Spanish. (Typically offered: Irregular)

SPAN 5273. Survey of 19th Century Spanish Literature. 3 Hours.
A graduate-level survey of Spanish literature from Neoclassicism to the Generation of 1898. (Typically offered: Irregular)

SPAN 5283. Survey of Contemporary Spanish Culture. 3 Hours.
A graduate-level survey that looks at Spanish society, history and culture in the 20th and 21 st centuries. Covering a variety of media, it explores how culture influences aesthetic production and the socio-historical forces that shaped and continue to shape Spain into the present-day. (Typically offered: Irregular)

SPAN 5343. Survey of 20th Century Spanish Literature. 3 Hours.
A graduate-level survey of Spanish literature from the Generation of 1898 to the Transition. Prerequisite: Graduate standing. (Typically offered: Irregular)

SPAN 5393. 19th Century Spanish American Literature. 3 Hours.
Study of representative literary works from Independence (1810) to 1900's. The course covers Neoclassicism, Romanticism, Realism/Naturalism, and Modernism and the role of literature in the nation-building process. The course will be taught in Spanish. (Typically offered: Irregular)

\section*{SPAN 5433. Don Quixote Now and Then. 3 Hours.}

A course on Spain's greatest literary masterpiece: Cervantes' Don Quixote (1605-1615). Addresses Don Quixote's infinite connections both with the literatures of its time and with the cultural products of ours, from medieval books of knights errant and the early modern picaresque to present-day film, comic books, and TV series. (Typically offered: Irregular)

\section*{SPAN 5463. 20th Century Spanish American Literature. 3 Hours.}

Critical survey of major movements and outstanding and representative works in 20th century prose and poetry, from the Mexican Revolution and the avant-garde to the contemporary boom and post-boom. (Typically offered: Irregular)

SPAN 5563. Latino Youth Biliteracy Service Learning Project. 3 Hours.
The Latino Youth Biliteracy Project is a service learning course for students in Spanish and Latin American and Latino Studies. Readings on Latino education policies and challenges, bilingualism, and the immigrant experience. Students commit from 15 to 30 hours of mentoring Latino youth at local schools during the semester (in addition to class meeting times) and complete a research project on Latino education. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{SPAN 5703. Special Topics. 3 Hours.}

May be offered in a subject not specifically covered by the courses otherwise listed. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

SPAN 575V. Special Investigations. 1-6 Hour.
Special investigations. (Typically offered: Irregular) May be repeated for degree credit.

SPAN 5943. U.S. Latino/a Literatures and Cultures. 3 Hours.
Explores the construction and negotiation of Latino/a identities through the study of literary and filmic texts. Theoretical concepts (e.g. latinidad, latinization, intralatino, cultural remittances) will also be studied. Topics of discussion may include: transnationalism, bilingualism, and interactions between different Latino groups. Taught in Spanish. Prerequisite: Graduate standing. (Typically offered: Irregular)

\section*{Special Education (SPED)}

\section*{Courses}

SPED 3863. Applications of Behavior Change Procedures. 3 Hours.
Course content includes (a) information on behavior change procedures; (b) activities designed to acquire skill in developing and evaluating behavioral change programs; and (c) information and activities designed to acquire skills in providing and monitoring persons and systems providing support. Legal and ethical standards will be reviewed and applied to the course content. Prerequisite: SPED 3843. (Typically offered: Spring)

\section*{SPED 411V. Mentoring Students with Special Needs. 1-6 Hour.}

This course provides students an opportunity to mentor students with special needs. Students spend from 3-9 hours weekly providing academic and social supports to students with special needs. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.

SPED 4173. Introduction to Dyslexia: Literacy Development and Structure of Language. 3 Hours.
This course focuses on the assessment of students with disabilities, literacy development, skills \& intervention. Students will utilize foundational concepts of oral and written language including the structure of language to assess student's difficulties and plan appropriate instruction. Techniques discussed include informal observation, miscue analysis, multisensory teaching, and portfolio assessment. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Childhood Education Bachelor of Science in Education (CHEDBS), or departmental consent. (Typically offered: Spring)

SPED 4413. ABA and Classroom Management for Teachers. 3 Hours.
Students in this course will develop an understanding of the basic principles of Applied Behavior Analysis (ABA) and learn how to implement these principles across a Positive Behavior Support Model. Intervention plans include development of individual supports, classroom management supports, and whole school behavior supports. Field experience required. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Birth through Kindergarten Bachelor of Science in Human Environmental Science (BRKDBS), or departmental consent. (Typically offered: Spring)
SPED 4413H. Honors ABA and Classroom Management for Teachers. 3 Hours. Students in this course will develop an understanding of the basic principles of Applied Behavior Analysis (ABA) and learn how to implement these principles across a Positive Behavior Support Model. Intervention plans include development of individual supports, classroom management supports, and whole school behavior supports. Field experience required. Prerequisite: Honors standing. (Typically offered: Spring)
This course is equivalent to SPED 4413.

\section*{SPED 4423. Technology for the Inclusive Classroom. 3 Hours.}

A study of the use of instructional and assistive/augmentative technology for students with learning differences and special learning needs. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS) or departmental consent. (Typically offered: Fall)
SPED 4433. Curriculum Development and Instructional Planning. 3 Hours. Study of the research base for the design and adaptation of curriculum and instructional strategies for students with disabilities in general and special classrooms. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS) or departmental consent. (Typically offered: Spring)

SPED 4443. Career Development and Transition Planning for Students with Disabilities. 3 Hours.
A study of career development theory and the research-based strategies for evaluating, planning, and implementing transition programs for students with disabilities. Prerequisite: Admission into Special Education Bachelor of Science Education (SPEDBS) or departmental consent. (Typically offered: Fall)

SPED 4453. Assessment of Students with Disabilities. 3 Hours.
A study of the methods and techniques of the assessment of children in all areas of exceptionality with emphasis on diagnosis, classification, and tracking progress. Field experience required. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS) or departmental consent. (Typically offered: Fall)

SPED 4453H. Honors Assessment of Students with Disabilities. 3 Hours.
A study of the methods and techniques of the assessment of children in all areas of exceptionality with emphasis on diagnosis, classification, and tracking progress. Field experience required. (Typically offered: Fall)
This course is equivalent to SPED 4453.

SPED 4463. Teaching Students with Extensive Support Needs. 3 Hours. A study of methods and materials for teaching students (K-12) with extensive support needs, including those with intellectual disability, autism, other health impairments, and multiple disabilities. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Birth through Kindergarten Bachelor of Science Human Environmental Sciences (BRKDBS), or departmental consent. (Typically offered: Spring)
SPED 4473. Teaching Students with Disabilities in Math and Science. 3 Hours. A study of content, methods, and materials for teaching mathematics and science to students with diverse learning needs and how to adapt curriculum to meet diverse needs. Field experience required. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS) or departmental consent. (Typically offered: Spring)

SPED 4483. Teaching Literacy Skills to Students with Disabilities. 3 Hours. This course will offer a detailed study of how to systematically and explicitly teach essential reading skills to students with disabilities or those at-risk for learning difficulties. Field experience required. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Childhood Education Bachelor of Science in Education (CHEDBS), or departmental consent. (Typically offered: Fall)

SPED 4493. Introduction to Students with High Incidence Disabilities. 3 Hours. The purpose of this course is to develop an understanding of high incidence disabilities, understand the unique characteristics as they apply to the context of the K-12 classroom, be able to design an appropriate classroom setting, and use evidence-based teaching practices for students with high incidence disabilities. Prerequisite: Admission into Special Education Bachelor of Science in Education (SPEDBS), Birth through Kindergarten Bachelor of Science Human Environmental Science (BRKDBS), or departmental consent. (Typically offered: Fall)

SPED 4538. Special Education Internship - Kindergarten through 6th Grade. 8 Hours.
Provides the opportunity to focus demonstrating and refining teaching skills through a teaching internship in special education grades \(\mathrm{K}-6\) grades while simultaneously developing a professional portfolio. Must be taken concurrently with SPED 4543. Corequisite: SPED 4543. (Typically offered: Fall)

SPED 4543. Special Education Seminar - Kindergarten through 6th Grade. 3 Hours.
Provides the opportunity to focus on issues encountered in the teaching internship in special education grades kindergarten through sixth grades while simultaneously developing a professional portfolio. Must be taken concurrently with SPED 4538. Corequisite: SPED 4538. (Typically offered: Fall)

SPED 4553. Special Education Research - Kindergarten through 6th Grade. 3 Hours.
Designing, conducting and applying research to improve classroom instruction in special education (K-6). (Typically offered: Fall)

SPED 4568. Special Education Teaching Internship - 7th through 12th Grade. 8 Hours.
Provides the opportunity to focus demonstrating and refining teaching skills through a teaching internship in special education grades 7-12 grades while simultaneously developing a professional portfolio. Must be taken concurrently with SPED 4573. Corequisite: SPED 4573. (Typically offered: Spring)

SPED 4573. Special Education Seminar - 7th through 12th Grade. 3 Hours. Provides the opportunity to focus on issues encountered in the teaching internship in special education grades seventh through twelfth grades while simultaneously developing a professional portfolio. Must be taken concurrently with SPED 4568. Corequisite: SPED 4568. (Typically offered: Spring)
SPED 4583. Special Education Research - 7th through 12th Grade. 3 Hours.
Designing, conducting and applying research to improve classroom instruction in special education (7-12). (Typically offered: Spring)

SPED 5013. Introduction to Early Childhood Special Education. 3 Hours.
This course is designed to help students understand the impact of different theories and philosophies of early learning and development on assessment, curriculum, instruction, and intervention decisions while exhibiting skills in reflective practice, advocacy, and leadership while adhering to ethical and legal guidelines in early childhood special education. Prerequisite: Departmental Consent. (Typically offered: Spring)
SPED 5023. Inclusive Practices in Early Childhood Special Education. 3 Hours. This advanced study course supports Scholar Practitioner in pursuit of an in-depth study of knowledge, skills, and dispositions needed to implement inclusive practices for young learners with disabilities in early childhood contexts. Students will learn to use curriculum frameworks to create and support universally designed, high quality learning experiences in natural and inclusive environments that provide each child and family with equitable access and opportunities for learning and growth. Prerequisite: Departmental Consent. (Typically offered: Summer)
SPED 5033. Family \& Professional Partnerships in Early Childhood Special Education. 3 Hours.
This advanced course supports Scholar Practitioners in pursuit of an in-depth study of family-school partnerships from early childhood through the transition to primary school while emphasizing advanced learning in the specialty studies and the social and behavioral studies in the substantive areas. Prerequisite: Departmental Consent. (Typically offered: Fall)

\section*{SPED 5043. Assessment \& Programming in Early Childhood Special} Education. 3 Hours.
This advanced study course supports Scholar Practitioners in pursuit of knowledge and understanding of the purposes of assessment in relation to ethical and legal considerations. Students learn how to choose, use, and analyze data from developmentally, linguistically, and culturally appropriate tools and methods that are responsive to the characteristics of the young child, family, and program through a strength-based approach. (Typically offered: Fall)

SPED 5143. Teaching Communication Skills to Persons with Autism. 3 Hours. This course focuses on classroom and teaching strategies for the development of communication skills with students who have autism spectrum disorders. Students will learn the characteristics of typical language development, atypical language development in autism, functional communication training and behavior analytic approaches to teaching communication. Prerequisite: Admission to the Graduate School. (Typically offered: Summer)

SPED 5173. Introduction to Dyslexia: Literacy Development \& Structure of Language. 3 Hours.
This course focuses on the assessment of students with disabilities, literacy development, skills and intervention. Students will utilize foundational concepts of oral and written language including the structure of language to assess students' difficulties and plan appropriate instruction. Techniques discussed include informal observation, miscue analysis, multisensory teaching, and portfolio assessment. Prerequisite: Admission to graduate school. (Typically offered: Spring)

SPED 532V. Practicum in Special Education. 3-6 Hour.
Supervised field experiences in special education programs, schools, institutions, and other facilities for exceptional children. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SPED 5343. Analysis of Behavior for Teachers. 3 Hours.}

An advanced course in managing behaviors in students with exceptionalities. Students are provided with experiences in applying theoretical bases of classroom management through identifying, assessing graphing, and analyzing behavioral data and implementing management plans. Ethical issues in the use of functional analysis are addressed. (Typically offered: Fall)

SPED 5413. ABA and Classroom Management for Teachers. 3 Hours. Students in this course will develop an understanding of the basic principles of Applied Behavior Analysis (ABA) and learn how to implement these principles across a Positive Behavior Support Model. Intervention plans include development of individual supports, classroom management supports, and whole school behavior supports. Graduate degree credit will not be given for both SPED 4413 and SPED 5413. (Typically offered: Fall)
SPED 5423. Technology for the Inclusive Classroom. 3 Hours.
A study of the use of instructional and assistive/augmentative technology for students with learning differences and special learning needs. Graduate degree credit will not be given for both SPED 4423 and SPED 5423. (Typically offered: Fall)
SPED 5433. Curriculum Development and Instructional Planning for Dyslexia. 3 Hours.
Study of the research base for the design, adaptation, and implementation of curriculum and instructional strategies for students with disabilities with dyslexia in general and special classrooms. (Typically offered: Fall)

SPED 5443. Career Development and Transition Planning for Students with Disabilities. 3 Hours.
A study of career development theory and the research-based strategies for evaluating, planning, and implementing transition programs for students with disabilities. Graduate degree credit will not be given for both SPED 4443 and SPED 5443. (Typically offered: Fall)

SPED 5463. Teaching Students with Significant Disabilities. 3 Hours.
A study of methods and materials for teaching students (K-12) with severe disabilities, including severe mental retardation, serious emotional disturbance, other health impairments, multiple disabilities, and severe physical disabilities. Graduate degree credit will not be given for both SPED 4463 and SPED 5463. (Typically offered: Spring)
SPED 5483. Teaching Literacy Skills to Students with Disabilities. 3 Hours. This course will offer a detailed study of how to systematically and explicitly teach essential reading skills to students with disabilities or those at-risk for learning difficulties. Graduate degree credit will not be given for both SPED 4483 and SPED 5483. (Typically offered: Spring)

SPED 5493. Introduction to Students with Autism Spectrum Disorder. 3 Hours. The purpose of this course is to develop an understanding of autism spectrum disorders, understand the unique characteristics as they apply to the context of the classroom, be able to design an appropriate classroom setting, and use evidence based teaching practices for students with autism spectrum disorders. Graduate degree credit will not be given for both SPED 4493 and SPED 5493. (Typically offered: Spring)
SPED 5543. Dyslexia Teaching Practicum. 3 Hours.
Provides the opportunity to demonstrate and refine teaching skills with dyslexic students and others with literacy learning disabilities through case studies and structured multi-sensory teaching of reading and writing skills with grades \(\mathrm{k}-12\) while simultaneously developing a professional portfolio. A minimum of 82 hours of field experiences with dyslexic students is required. (Typically offered: Spring)

SPED 5633. Curriculum Development and Instructional Planning. 3 Hours. Study of the research base for the design and adaptation of curriculum and instructional strategies for students with disabilities in general and special classrooms. (Typically offered: Irregular)

\section*{SPED 5643. Individual Diagnostic Testing. 3 Hours.}

A study of various individual diagnostic tests used to identify students with disabilities and develop individual educational programs. Prerequisite: Admission to Graduate School. (Typically offered: Irregular)

\section*{SPED 5653. Individual Intelligence Testing. 3 Hours.}

A study of various individual intelligence tests, including the Wechsler series, and their use in schools to identify students with disabilities. Prerequisite: Admission to Graduate School. (Typically offered: Irregular)

SPED 5673. Teaching Students with Disabilities in the Content Areas. 3 Hours. A study of content, methods, and materials for teaching content courses to students with diverse learning needs (K-12). (Typically offered: Irregular)
SPED 5683. Teaching Literacy Skills to Students with Disabilities. 3 Hours.
This course will offer a detailed study of how to systematically and explicitly teach essential reading skills to students with disabilities or those at-risk for learning difficulties. (Typically offered: Spring)
SPED 5713. Career Development and Transition for People with Disabilities. 3 Hours.
This is an advanced course at the master's level in the specialty studies. The Scholar Practitioner model at this level will pursue an in-depth study of the transition process for students with disabilities including transition plan development, work based learning opportunities, developing skills in self-advocacy and selfdetermination using evidence based practices, family engagement, collaborative program planning and evaluation. (Typically offered: Fall)

SPED 5733. Inclusive Practices for Diverse Populations. 3 Hours.
An advanced study of the characteristics of persons with exceptional learning needs and the provision of appropriate instruction in the general education classroom including the use of current technologies including instructional media, social networking, and other educational technologies. Prerequisite: Graduate standing. (Typically offered: Summer)
SPED 5763. Teaching Students with Extensive Support Needs. 3 Hours.
A graduate level study of methods and materials for teaching students (K-12) with extensive support needs including those with intellectual disability, autism, other health impairments, and other disabilities. (Typically offered: Spring)

SPED 5783. Professional and Family Partnerships. 3 Hours.
This course is an advanced course at the master's level in the specialty studies. The Scholar Practitioner model at this level will pursue an in-depth study of familyschool partnerships from early childhood through the transition to adulthood while emphasizing advance learning in the specialty studies and the social and behavioral studies in the substantive areas. Prerequisite: Admission to graduate school. (Typically offered: Fall)

\section*{SPED 5793. Practicum in Applied Behavior Analysis. 3 Hours.}

This course is a supervised practicum that provides students with experience in applying the knowledge, skills, and dispositions by teaching individuals using Applied Behavior Analysis. Instructor approval needed for enrolling in the course. Prerequisite: Instructor Consent. (Typically offered: Fall and Spring) May be repeated for up to 9 hours of degree credit.
SPED 5863. Assessment and Programming for Students with Dyslexia. 3 Hours.
Methods and techniques of assessment of children and youth with dyslexia with emphasis on identification, informal, and formal assessment to support teams in educational program development and implementation. (Typically offered: Summer)

\section*{SPED 5873. Assessment and Programming for Students with Disabilities. 3}

Hours.
Methods and techniques of assessment of children in all areas of exceptionality with emphasis on diagnosis and classification. (Typically offered: Fall)

\section*{SPED 5883. Research in Inclusive Education. 3 Hours.}

Review of research in inclusive education including all areas of exceptionality and English language learners with emphasis on research-based practices. (Typically offered: Fall)

SPED 5893. Organization, Administration and Supervision of Special Education. 3 Hours.
Procedures, responsibilities and problems of organization, administration, and supervision of special education programs. (Typically offered: Irregular)

\section*{SPED 599V. Special Topics. 1-6 Hour.}

Discussion and readings on selected topics in special education. Special focus on recent and emerging topics in special education. Prerequisite: Admission to Graduate School and Special Education graduate program. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SPED 605V. Independent Study. 1-6 Hour.}

Advanced studies on potential research topics for graduate students in special education. Prerequisite: Admission to the Graduate School and instructor consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

SPED 6403. Emerging Issues in Special Education. 3 Hours.
A study in the complex issues with which professionals in the field of special education must be familiar and prepared to address. (Typically offered: Irregular)

\section*{SPED 6433. Legal Aspects of Special Education. 3 Hours.}

A study of litigation and legislation in special education, federal and state laws and court cases, and due process hearings. (Typically offered: Irregular)
This course is cross-listed with EDLE 6433.

\section*{SPED 6453. Human Performance Improvement. 3 Hours.}

This course is an introduction to Human Performance Technology, a rapidly growing field that applies the principles, methods, and empirical generalizations of Behavior Analysis to improving human performance in organizations. Working from a theoretical basis, students will learn how to diagnose performance discrepancies in organizational settings, design and evaluate appropriate behavior-based solutions. Prerequisite: SPED 6843. (Typically offered: Spring)

\section*{SPED 6463. Concepts and Principles in Behavior Analysis. 3 Hours.}

Course provides information on: (a) the philosophical assumptions and principles of behavior analysis; (b) basic principles, processes, and concepts of applied behavior analysis; and (c) the ethical and legal issues in its use. Prerequisite: SPED 6843. (Typically offered: Summer)

SPED 6803. Teaching Students with Autism Spectrum Disorders. 3 Hours. This course provide students with an understanding of individuals who have been diagnosed with autism spectrum disorders. The course provides a life-span perspective by focusing on preschoolers, school-aged children, and adults. Students will study the characteristics of these individuals and general educational strategies for their education. (Typically offered: Fall)

\section*{SPED 6813. Characteristics and Assessment of Persons with ASD. 3 Hours.}

This course provides an in-depth study of the characteristics and assessment of persons with autism spectrum disorders. It includes formal and informal assessment measures used to assist in the identification of students with ASD, as well as provide information for program development for this group of students. (Typically offered: Spring)

\section*{SPED 6823. Instructional Methods for Students with Autism Spectrum Disorders. 3 Hours.}

This course is designed to assist professional educators in planning and implementing instructional and support services for students with autism spectrum disorders. Students will learn how to participate in collaborative family, school, and community partnerships. (Typically offered: Fall)

\section*{SPED 6843. Basic Principles of ABA. 3 Hours.}

Course provides information on: (a) the philosophical assumptions and principles of behavior analysis; (b) basic principles, processes, and concepts of applied behavior analysis; and (c) ethical and legal issues involved in its use. Prerequisite: Admittance to the Applied Behavior Analysis Graduate Certificate (APBAGC). (Typically offered: Fall)

\section*{SPED 6853. Behavioral Assessment in ABA. 3 Hours.}

Course content includes information on effective methods and the development of skills: (a) assessing, organizing, and interpreting behavior; (b) conducting task analysis and selecting intervention goals and strategies; (c) displaying data; and (d) making evidence-based decisions. Legal and ethical standards will be reviewed and applied to behavioral change procedures used. Prerequisite: SPED 6843. (Typically offered: Summer)

\section*{SPED 6863. Behavior Change Procedures and Supports. 3 Hours.}

Course content includes (a) information on behavior change procedures; (b) activities designed to acquire skill in developing and evaluating behavioral change programs; and (c) information and activities designed to acquire skills in providing and monitoring persons and systems providing support. Legal and ethical standards will be reviewed and applied to the course content. Prerequisite: SPED 6843. (Typically offered: Spring)

\section*{SPED 6873. Measurement and Experimental Design. 3 Hours.}

Course content includes information on and the development of skills in: (a) the measurement of the multiple dimensions of behaviors; (b) the use of methods of measuring behavior; (c) the experimental evaluation of interventions; and (d) the multiple methods of displaying and interpreting behavioral data. Legal and ethical standards will be reviewed and applied to the course content. (Typically offered: Fall)

SPED 6883. ABA Ethical, Professional, and Legal Standards. 3 Hours. Course content includes information on the ethical, professional and legal standards in special education and, specifically, the area of applied behavior analysis. Prerequisite: SPED 6843. (Typically offered: Summer)

\section*{Statistics (STAT) Courses}

STAT 2303. Principles of Statistics (ACTS Equivalency = MATH 2103). 3 Hours.
A problem-oriented course with applications from many fields. Emphasis on understanding the nature of statistical orderliness implied by probability laws. Statistical analysis is treated as a means of decision making in the face of uncertainty. Prerequisite: MATH 1203 with a grade of C or better, or MATH 1313 with a grade of \(C\) or better, or a score of at least 50 on the Math Placement Test, or a score of at least 26 on the math component of the ACT exam, or a score of at least 600 on the math component of the old SAT or 620 on the math component of the new SAT. (Typically offered: Fall, Spring and Summer)

\section*{STAT 2823. Biostatistics. 3 Hours.}

An introductory course in biostatistics emphasizing methods for collecting, graphing, and understanding data. Special emphasis is placed upon available methods for both exploratory and confirmatory data analysis. Particular attention is given to statistical methods for data sets with discrete variables. Pre- or Corequisite: MATH 2554. Corequisite: Lab component. (Typically offered: Spring)

\section*{STAT 3001L. Statistics Methods Laboratory. 1 Hour.}

Introduction to the statistical software SAS, including its use for common statistical analyses. A practical complement to the statistical methodology covered in STAT 3003. (Typically offered: Fall and Spring)

\section*{STAT 3003. Statistical Methods. 3 Hours.}

Describing Data, Basic Probability, Random variables, Uniform, Normal and Binomial Distributions, Sampling Distributions, Confidence Intervals, Hypothesis testing, Correlation and Regression, Contingency table, Comparing two populations, ANOVA. Prerequisite: MATH 2554 or MATH 2554C. (Typically offered: Fall and Spring)

\section*{STAT 3013. Introduction to Probability. 3 Hours.}

A calculus-based introduction to probability. Discrete probability spaces and counting techniques, discrete and continuous probability distributions, random variables, random samples, law of large numbers, central limit theorem. Prerequisite: MATH 2564. (Typically offered: Fall, Spring and Summer)
This course is cross-listed with MATH 3013.

\section*{STAT 3113. Introduction to Mathematical Statistics. 3 Hours.}

A calculus-based introduction to mathematical statistics, revolving around estimation, hypothesis testing, and Bayesian inference. Emphasis is given to the unifying mathematical and decision-theoretical principles that provide a justification to different estimation and testing procedures. Prerequisite: STAT 3013 or departmental consent. (Typically offered: Spring)

STAT 4013. Statistical Forecasting and Prediction. 3 Hours.
Provides an in depth look at the theory and practice of applied modeling of temporal data for data science, including model building, selection, autocorrelation, autoregression and moving averages, and prediction for correlated data. Students will gain experience using statistical software to learn from data using applied time series and models. Prerequisite: STAT 3003 or department consent. (Typically offered: Fall)

\section*{STAT 4023. Bayesian Methods. 3 Hours}

Provides an introductory look at the theory and practice of applied Bayesian modeling for data science: including model building, selection, regularization, classification and prediction. Students will gain experience using statistical software to learn from data using applied Bayesian models. Prerequisite: STAT 3003 or department consent. (Typically offered: Spring)

\section*{STAT 4033. Nonparametric Statistical Methods. 3 Hours.}

Goodness-of-fit tests, nonparametric inference in one-sample and two-sample location model, one-way and two-way ANOVA, nonparametric measures of association, Empirical distribution function, Bootstrap and Jackknife, Kernel density estimation. Prerequisite: STAT 2823 or STAT 3003 or departmental consent. (Typically offered: Fall)

\section*{STAT 4043. Sampling Techniques. 3 Hours.}

Considers optimum techniques of simple random, stratified random, cluster, systematic and multistage sampling from finite populations subject to cost precision constraints. Wide range of applications. Prerequisite: STAT 3003 or department consent. (Typically offered: Fall, Spring and Summer)

STAT 405V. Internship in Professional Practice. 1-3 Hour.
Professional work experience involving significant use of mathematics or statistics in business, industry or government. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

\section*{STAT 4101L. Introduction to R. 1 Hour.}

A hands-on introduction to R software, a free and open-source computing environment used for data manipulation and analysis across a broad spectrum of subject areas. Intended for new users. Content begins with simple data manipulation, then complex data structures and common statistical procedures are covered. (Typically offered: Fall)

\section*{STAT 4333. Analysis of Categorical Responses. 3 Hours.}

Statistical tools to analyze univariate and multivariate categorical responses. Emphasis is given to Generalized Linear Models, including logistic regression and loglinear models. Prerequisite: STAT 3003 or departmental consent. (Typically offered: Spring)

\section*{STAT 4373. Experimental Design. 3 Hours.}

Topics in the design and analysis of planned experiments, including randomized block, Latin square, split plot, and BIB designs, use of fractional factorial replication, and repeated measures. Prerequisite: STAT 3003 or department consent. (Typically offered: Spring)

\section*{STAT 5001L. Statistics Methods Laboratory. 1 Hour.}

Introduction to the statistical software SAS, including its use for common statistical analyses. (Typically offered: Fall and Spring)

\section*{STAT 5003. Statistical Methods. 3 Hours.}

Describing Data, Basic Probability, Random variables, Uniform, Normal and Binomial Distributions, Sampling Distributions, Confidence Intervals, Hypothesis testing, Correlation and Regression, Contingency table, Comparing two populations, ANOVA. (Typically offered: Fall and Spring)

\section*{STAT 5033. Nonparametric Statistical Methods. 3 Hours.}

Goodness-of-fit tests, nonparametric inference in one-sample and two-sample location model, one-way and two-way ANOVA, nonparametric measures of association, Empirical distribution function, Bootstrap and Jackknife, Kernel density estimation. Graduate degree credit will not be given for both STAT 4033 and STAT 5033. Prerequisite: STAT 5003 or departmental consent. (Typically offered: Fall)

\section*{STAT 5043. Sampling Techniques. 3 Hours.}

Considers optimum techniques of simple random, stratified random, cluster, systematic and multistage sampling from finite populations subject to cost precision constraints. Wide range of applications. Graduate degree credit will not be given for both STAT 4043 and STAT 5043. Prerequisite: STAT 5003. (Typically offered: Fall, Spring and Summer)

\section*{STAT 505V. Internship in Professional Practice. 1-3 Hour.}

Professional work experience involving significant use of mathematics or statistics in business, industry or government. Graduate degree credit will not be given for both STAT 405 V and STAT 505V. Prerequisite: Departmental consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 3 hours of degree credit.

STAT 5103. Introduction to Probability Theory. 3 Hours.
Fundamentals of probability, distribution theory, and random variables; expected value, moments, and generating functions; classic parametric families of distributions; central limit theorems, inequalities, and laws of large numbers. Prerequisite: MATH 2574 and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall)

STAT 5113. Statistical Inference. 3 Hours.
Statistical theory of estimation and testing hypothesis. Prerequisite: STAT 5103 and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Spring)

\section*{STAT 5121L. Introduction to R. 1 Hour.}

A hands-on introduction to R software, a free and open-source computing environment used for data manipulation and analysis across a broad spectrum of subject areas. Intended for new users. Content begins with simple data manipulation, then complex data structures and common statistical procedures are covered. Graduate degree credit will not be given for both STAT 4101L or STAT 5121L. (Typically offered: Fall)

\section*{STAT 5313. Regression Analysis. 3 Hours.}

Review of matrix algebra, parameter estimation in linear models, regression diagnostics, collinearity, variable selection, nonparametric regression, Bayesian regression. Prerequisite: STAT 5003 or departmental consent. (Typically offered: Spring)

\section*{STAT 5333. Analysis of Categorical Responses. 3 Hours.}

Statistical tools to analyze univariate and multivariate categorical responses. Emphasis is given to Generalized Linear Models, including logistic regression and loglinear models. Prerequisite: STAT 5003 or departmental consent. (Typically offered: Spring)

\section*{STAT 5353. Methods of Multivariate Analysis. 3 Hours.}

Statistical tools to analyze multivariate datasets. Topics include the multivariate linear model, principal component analysis, factor analysis, linear discriminant analysis, clustering, classification and regression trees, support vector machines, nonlinear dimensionality reduction. Prerequisite: STAT 5313, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Spring)

\section*{STAT 5373. Experimental Design. 3 Hours.}

Topics in the design and analysis of planned experiments, including randomized block, Latin square, split plot, and BIB designs, use of fractional factorial replication, and repeated measures. Graduate degree credit will not be given for both STAT 4373 and STAT 5373. Prerequisite: STAT 5003. (Typically offered: Spring)

\section*{STAT 5383. Time Series Analysis. 3 Hours.}

Identification, estimation and forecasting of time series. Spectral analysis including the fast Fourier transform computational aspects are emphasized. Prerequisite: STAT 5103, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall, Spring and Summer)

STAT 5413. Spatial Statistics. 3 Hours.
Applied spatial statistics, covering univariate spatial modeling (kriging), multivariate spatial modeling (cokriging), methods of estimation and inference, and spatial sampling designs. Special relevance to remote sensing. Prerequisite: STAT 5313, and graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Fall)

STAT 5443. Computational Statistics. 3 Hours.
In-depth introduction to computer-based algorithms used for inference and forecasting. Course content may vary by semester. Possible algorithms covered could include: resampling methods (bootstrap), Markov chain Monte Carlo, variable selection in high-dimensional regression (LASSO and LARS), artificial neural networks, ensemble methods (boosting, bagging, random forests), and kernel methods. Prerequisite: STAT 5113 or departmental consent. (Typically offered: Spring)

STAT 610V. Research in Statistics. 1-4 Hour.
Research in statistics. Prerequisite: Graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Irregular)

\section*{STAT 639V. Topics in Statistics. 1-3 Hour.}

Current state of the art on methodology in one of the topics: multivariate analysis, time series analysis, sequential analysis, factor analysis, or biostatistics.
Prerequisite: Graduate standing in mathematics or statistics, or departmental consent. (Typically offered: Irregular) May be repeated for degree credit.

\section*{Statistics and Analytics (STAN)}

\section*{Courses}

STAN 501V. Special Topics in Statistics and Analytics. 1-6 Hour. Designed to cover specialized topics not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

STAN 502V. Research Problems in Statistics and Analytics. 1-6 Hour.
Designed to allow focused study into student's research area. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

STAN 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{STEM Education (STEM)}

\section*{Courses}

STEM 2003. The Art of STEM Communication. 3 Hours.
It is widely known that breakdown of communication contributes to mistrust and misunderstanding of the scientific enterprise. In this dynamic, interdisciplinary course including guest lectures, socio-scientific issues, and theatre-style methods, students will learn to communicate complex STEM topics clearly and effectively using research-based practices from the field of education. (Typically offered: Fall and Spring)

STEM 2103. Knowing and Learning in Science and Mathematics. 3 Hours. This course examines theories of learning to provide a firm foundation for teaching, learning, and communicating within STEM disciplines. Drawing from scholarship in educational psychology and other disciplines, students explore implications for designing effective learning environments, the relationship between communication and learning, and how learning is influenced by culture. (Typically offered: Fall)

STEM 3143. Teaching Science in the Elementary Grades. 3 Hours. Study of the methods and materials in teaching science. Classroom applications of teaching strategies with analysis of teacher effectiveness in seminar settings are emphasized. Field experience required. Prerequisite: (CHEDBS or ELELBS majors), (BIOL 1543, BIOL 1541L, GEOS 1113, and GEOS 1111L), and ((ASTR 2003 and ASTR 2001L) or (STEM 4104 (Offered in fall only)) or (GEOS 1133 and GEOS 1131L) or (PHYS 1034 (offered in spring only)). (Typically offered: Fall and Spring)

\section*{STEM 3203. Classroom Interactions. 3 Hours.}

This course examines the interaction between teachers, students, and content, and how effective communication and pedagogical knowledge contribute to development of conceptual understanding of STEM subjects. Students learn a variety of instructional strategies to engage students of diverse backgrounds to implement in a secondary setting. Prerequisite: STEM 2103. (Typically offered: Spring)
STEM 4033. Introduction to STEM Education. 3 Hours.
This course provides an introduction to the foundations of STEM education disciplines and the strategies used to deliver integrative STEM education in the elementary and secondary school setting. The nature of STEM education disciplines, STEM pedagogy, teaching strategies, integrative STEM learning, STEM careers, and problem-centered instruction are addressed. (Typically offered: Spring and Summer)
STEM 4043. Creativity and Innovation in STEM Education. 3 Hours.
This course in technology and engineering education focuses on the development and introduction of technology and engineering-based activities to support science and mathematics instruction in the elementary and middle level classroom. Through hands-on, problem based learning challenges, students will develop an understanding of the design process and the integration of science, technology, engineering, and mathematics (STEM) often used to solve real-world problems. Prerequisite: STEM 4033. (Typically offered: Spring)

\section*{STEM 4104. Astronomy for Educators. 4 Hours.}

Astronomy for Educators splits evenly between the basics of astronomy and practical methods for teaching astronomy effectively to all grade levels. The class is appropriate and effective for elementary, middle school, and secondary educators. Pedagogy focuses on the use of low-cost models that help all students grasp astronomy fundamentals such as phases of the Moon and how our solar system works. Lab activities include building and working with scientific models, evening lab activities give students the opportunity to use telescopes and binoculars to observe the Moon, planets, constellations and more. No prior experience or astronomy knowledge is assumed for this course. (Typically offered: Fall and Spring)
STEM 4303. Teaching Secondary Mathematics I. 3 Hours.
Study of the theories that have influenced teaching and learning of mathematics. Specific frameworks of secondary students' mathematical thinking and learning trajectories will be examined. Implications for instruction will be explored. Prerequisite: STEM 3203. (Typically offered: Fall)

\section*{STEM 4313. Teaching Secondary Mathematics II. 3 Hours.}

Framed by current literature in mathematics education, teacher candidates will deepen their knowledge of effective practices for teaching mathematics and their understanding of the essential elements of school mathematics programs such as access and equity, curriculum, and assessment. The course will focus on pedagogy for teaching high school mathematics content. Pre- or Corequisite: STEM 3203. (Typically offered: Spring)

STEM 4333. History and Philosophy of Science for Science Teachers. 3 Hours. The History and Philosophy of Science for Science Teachers explores knowledge generation in the sciences by referencing the history and philosophy of the sciences. The course prepares future teachers with the background, rationales and strategies necessary to enhance student knowledge and interest in these important foundation areas. (Typically offered: Spring)

STEM 4403. Teaching Seminar. 3 Hours.
This weekly seminar is designed to help mathematics, science, and computer science teacher interns address complex issues related to novice teaching experiences, including assessment and evaluation of student learning and teaching practice, classroom management challenges, and career readiness. Corequisite: STEM 4506. (Typically offered: Spring)

STEM 4506. Teaching Internship. 6 Hours.
The teaching internship is the apprenticeship experience for students preparing for mathematics, science, or computer science teacher licensure. Interns will teach full-time in secondary schools with mentoring and support provided by university supervisors and experienced classroom educators. Licensure program requirements should be completed before the internship semester. Corequisite: STEM 4403. (Typically offered: Spring)

STEM 5023. Creativity and Innovation in STEM. 3 Hours.
This introductory course in technology and engineering education (TEED) focuses on the development and introduction of TEED activities to support science and mathematics instruction in the elementary classroom. Through hands-on, problembased learning challenges, students will develop and understanding of the engineering design process and the integration of STEM often used to solve realworld problems. Prerequisite: STEM 4033 or STEM 5033 (formerly STEM 4033). (Typically offered: Fall and Summer)

STEM 5033. Introduction to STEM Education. 3 Hours.
This course provides an introduction to the foundations of STEM education disciplines and the strategies used to deliver integrative STEM education in the elementary and secondary school setting. The nature of STEM education disciplines, STEM pedagogy, teaching strategies, integrative STEM learning, STEM careers, and problem-centered instruction are addressed. Graduate degree credit will not be given for both STEM 4033 and STEM 5033. (Typically offered: Spring and Summer)

\section*{STEM 5104. Astronomy for Educators. 4 Hours.}

Astronomy for Educators splits evenly between the basics of astronomy and practical methods for teaching astronomy effectively to all grade levels. The class is appropriate and effective for elementary, middle school, and secondary educators. Pedagogy focuses on the use of low-cost models that help all students grasp astronomy fundamentals such as phases of the Moon and how our solar system works. Lab activities include building and working with scientific models, evening lab activities give students the opportunity to use telescopes and binoculars to observe the Moon, planets, constellations and more. No prior experience or astronomy knowledge is assumed for this course. Graduate degree credit will not be given for both STEM 4104 and STEM 5104. (Typically offered: Fall and Spring)

STEM 5203. Problem-Based Mathematics. 3 Hours.
This graduate level course focuses on sharing, modeling and practicing strategies to support the meaningful integration of science, technology, engineering and mathematics (STEM) with the emphasis on mathematics in the K-4 classroom. A strong foundation for integrating the STEM disciplines through a problemsbased approach within the elementary curriculum will be developed by providing students with theoretical frameworks, research, resources, and methods related to appropriate and effective classroom practice. Prerequisite: CIED 3123. (Typically offered: Irregular)

STEM 5213. Teaching Problem-Based Science in the Elementary Grades. 3 Hours.
This graduate level course focuses on sharing, modeling and practicing strategies to support the meaningful integration of science, technology, engineering and mathematics (STEM) with the emphasis on science in the K-4 classroom. A strong foundation for integrating the STEM disciplines through a problems-based approach within the elementary curriculum will be developed by providing students with theoretical frameworks, research, resources, and methods related to appropriate and effective classroom practice. Prerequisite: CIED 3143 and admission to either Elementary Education (ELEDMA) or Curriculum and Instruction (CIEDME) program. (Typically offered: Spring)

\section*{STEM 5303. Teaching Secondary Mathematics. 3 Hours.}

Study of the methods and materials in teaching middle, junior high, and high school mathematics. Philosophical, cognitive, and psychological dimensions of teaching secondary topics including, but not limited to algebra, geometry, and statistics. The planning of instruction, microteaching, and the development of instructional materials are included. Prerequisite: Admission to Teacher Education (EDUCMA) M.A.T. program. (Typically offered: Summer)

\section*{STEM 5313. Teaching Secondary Mathematics II. 3 Hours.}

Framed by current literature in mathematics education, teacher candidates will deepen their knowledge of effective practices for teaching mathematics, and essential elements of school mathematics programs such as access and equity, curriculum, and assessment. The course will focus on pedagogy for teaching high school mathematics content. Prerequisite: STEM 5303. (Typically offered: Spring)

STEM 5333. Nature of Science: Philosophy of Science for Science Educators. 3 Hours.
The Nature of Science is a hybrid discipline drawing from philosophy, history and sociology of science and the psychology of scientific observation to provide a complete view of how science functions. This understanding is particularly important for science teachers. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{Strategy, Entrepreneurship and Venture Innovation (SEVI) \\ Courses}

\section*{SEVI 2013. Introduction to Venture and Value Creation. 3 Hours.}

This course is a gateway course that establishes a foundation for new venture creation and innovation in business and nonprofit enterprises. Students will develop the skills necessary to identify and refine problems common to new ventures, and methods for individually and collaboratively creating solutions to those problems. The class will cover frameworks for assessing value creation, technical feasibility and organizational viability and is relevant to students interested in for-profit, nonprofit and for-benefit entrepreneurship and innovation. (Typically offered: Fall, Spring and Summer)
SEVI 2033. Business Foundations for Innovators and Entrepreneurs. 3 Hours.
This class is intended for non-Walton College majors who wish to obtain a minor in Innovation and Entrepreneurship. It creates a foundation for understanding entrepreneurship and innovation by surveying areas of business and presents business processes that are common to most enterprises through an integrated classroom/web based design. Throughout the course you will be introduced to multiple different aspects of business such as ethical business, the management process, business ownership, marketing, accounting and finance. Students may not receive credit for both SEVI 2053 and SEVI 2033. Walton College majors are not eligible to register for the course. No degree credit for Walton College majors. (Typically offered: Fall and Spring)

\section*{SEVI 2053. Business Foundations. 3 Hours.}

This course surveys the areas of business and presents business processes that are common to most enterprises through a hands-on, interactive business experience. It reinforces the use of financial accounting for reporting the results of business operations, and introduces managerial accounting concepts and techniques for improving the quality business decisions. Prerequisite: ((Non-business majors: DASC 1003 and DASC 1104) or (Business majors: ISYS 1123 with a grade of \(C\) or better and ACCT 2013 with a grade of C or better)). (Typically offered: Fall, Spring and Summer)

\section*{SEVI 2073. Introduction to Outdoor Recreation Industries. 3 Hours.}

Introduction to Outdoor Recreation Industries will establish a foundation for students interested in pursuing careers or starting businesses in the outdoor products and services industries. The class lays the foundation for the Outdoor Products and Services Certificate program and will serve as a prerequisite for several classes in the program. The class will provide students with an introduction to economic, cultural, health, infrastructure, diversity and ethical aspects of the products and services outdoor industries. (Typically offered: Fall, Spring and Summer)

\section*{SEVI 3013. Strategic Management. 3 Hours.}

Integrative study of managerial decisions; introduces students to an understanding of strategic competitiveness and the way in which business strategy is formulated and implemented; uses a combination of theoretical and applied approaches to analyzing key business decisions, implementing these decisions, and monitoring their effects. Corequisite: Drill component. Prerequisite: ACCT 2013, (ACCT 2023 or SEVI 2053), BUSI 1033, ECON 2013, ECON 2023, (MATH 2053 or MATH 2564), (MATH 2043 or MATH 2554), COMM 1313, BLAW 2013, ISYS 2103, SCMT 2103, MGMT 2103, (FINN 2043 or FINN 3043), MKTG 3433, ISYS 1123, all with a grade of \(C\) or better. (Typically offered: Fall, Spring and Summer)

\section*{SEVI 3013H. Honors Strategic Management. 3 Hours.}

Integrative study of managerial decisions; introduces students to an understanding of strategic competitiveness and the way in which business strategy is formulated and implemented; uses a combination of theoretical and applied approaches to analyzing key business decisions, implementing these decisions, and monitoring their effects. Prerequisite: ACCT 2013, (ACCT 2023 or SEVI 2053), BUSI 1033, ECON 2013, ECON 2023, (MATH 2053 or MATH 2564), (MATH 2043 or MATH 2554), COMM 1313, BLAW 2013, ISYS 2103, SCMT 2103, MGMT 2103, (FINN 2043 or FINN 3043), MKTG 3433, and ISYS 1123, all with a grade of C or better, and honors standing. (Typically offered: Fall, Spring and Summer) This course is equivalent to SEVI 3013.

\section*{SEVI 3033. Social Innovation Strategies. 3 Hours.}

Social Innovation Strategies is a hands-on, active learning and project-based course focused on exploring the process through which social innovations are designed, developed, and introduced to the market. Using the cases of successful social innovation strategies at the grass root, small and medium social enterprises, and corporate levels, students will learn how new technologies, research-based innovation and data science can impact our world by developing viable social innovation strategies and social business models around these innovations. (Typically offered: Fall)

\section*{SEVI 310V. Entrepreneurship Internship. 1-3 Hour.}

This experience is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to startups, non-profits, corporate innovation experiences and others. Prerequisite: Junior standing and department consent. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

SEVI 3233. Corporate Innovation. 3 Hours.
This class establishes a foundational knowledge of innovation within an industry context. By combining case studies with guest speakers, this class will evaluate why some companies succeed at innovation and why others fail and learn how to take an innovation from idea to scale within a large organization. Students will develop the skills necessary become an intrapreneur. The class will cover frameworks for corporate innovation, corporate strategy, networks, and technology assessment and is relevant for all students interested in corporate innovation. Prerequisite: SEVI 2053 or ACCT 2023. (Typically offered: Spring)

\section*{SEVI 3303. Startup Toolkit. 3 Hours.}

The Startup Toolkit is designed for students who want to experience the steps of creating your own business venture. We will explore the initial strategies and tools used by entrepreneurs at the beginning of building a potential business. This class will cover the process of thinking about innovation and the steps entrepreneurs use to solve big problems and determine new venture potential. Students will learn to identify real problems, get to know the potential customers, determine a unique value proposition and create a financially viable solution. This course prepares students to take the Venture Builders (SEVI 4303) course, which completes the rest of the business model planning in preparation for investment seeking opportunities. Prerequisite: Instructor approval. (Typically offered: Spring)

\section*{SEVI 3343. Creativity and Collaboration. 3 Hours.}

This interdisciplinary seminar encourages creative risk-taking, team building, and iteration. Students explore creativity in myriad contexts as they develop their creative and collaborative capacities. Subtopics include defining creativity; claiming creativity; creative rebellion; discovery and innovation; and authenticity and originality. In this highly interactive course, students engage creative process both individually and in teams through a range of meaningful applied learning activities, critical and creative thinking opportunities, and oral and written communication. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

\section*{SEVI 3673. Social Entrepreneurship. 3 Hours.}

The course explores the notion of social entrepreneurship both, as a movement and as an alternative to engage with the market economy. Students will explore the possibility of opening their own business with a strong social mission; adopting some sustainable practices to advance their social or environmental causes; advocating for new ways of measuring impact and returns to investment; or simply by becoming responsible consumers, conscious about the consequences of their decision making power. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

\section*{SEVI 3703. Outdoor Industries Strategies. 3 Hours.}

Outdoor Industries Strategies will explore strategies and business models associated with both products and services based cycling and outdoor recreation companies. The class will also cover career strategies in these industries, including entrepreneurial alternatives and careers in corporate and small venture organizations. Students will synthesize and apply knowledge gained in traditional majors to the cycling and outdoor industry context. Prerequisite: SEVI 2073 or instructor consent. (Typically offered: Fall and Spring)

SEVI 3933. Entrepreneurship and New Venture Development. 3 Hours.
The role of the entrepreneur in starting up new businesses. Identification of new venture opportunities and the evaluation of their feasibility. Prerequisite: Junior Standing. (Typically offered: Fall and Spring)

\section*{SEVI 4003H. Honors Strategy, Innovation and Entrepreneurship Colloquium. 3} Hours.
Colloquium that covers new developments and topics salient to entrepreneurship, innovation and strategy in businesses and nonprofit organizations. Prerequisite: Honors standing and junior standing. (Typically offered: Fall)

\section*{SEVI 4103. Special Topics in Strategy, Entrepreneurship and Innovation. 3}

\section*{Hours.}

Explores trends, concepts, and important developments in strategy, entrepreneurship and innovation as they impact on organizational performance. Topics are selected by the Strategy, Entrepreneurship, and Venture Innovation Department faculty for each semester the course is offered. Prerequisite: Junior standing and completion of the pre-business core. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{SEVI 4103H. Honors Special Topics in Strategy, Entrepreneurship and Innovation. 3 Hours.}

Explores trends, concepts, and important developments in strategy, entrepreneurship and innovation as they impact on organizational performance.
Topics are selected by the Strategy, Entrepreneurship, and Venture Innovation Department faculty for each semester the course is offered. Prerequisite: Honors standing, junior standing and completion of the pre-business core. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.
This course is equivalent to SEVI 4103.

\section*{SEVI 4233. Corporate Innovation II. 3 Hours.}

This course presents an integrated overview of the field of product management. Students learn to be the CEO of their product. Through this interactive course, students will be able to take organizational innovation ideas formed in the prerequisite, Corporate Innovation course to the next level by learning and implementing the fundamentals of product management which include improving technical acumen, strategy development, business modeling, product/market fit, understanding OKRs, EPICs and retrospectives. Prerequisite: SEVI 3233. (Typically offered: Spring)

\section*{SEVI 4303. Venture Builders. 3 Hours.}

Students will assess the best business models developed in the prerequisite Startup Toolkit Course and will work to further develop these ventures with the intent of actually launching new businesses. As entrepreneurs in training, students will create business models and plans that have the potential of attracting outside investment, and that have the potential to scale. Prerequisite: SEVI 3303 and Instructor approval. (Typically offered: Fall)

\section*{SEVI 4333. Biomedical Innovations for Global Impact. 3 Hours.}

This course focuses on specific problems triggered or exacerbated by selected global health care challenges. Acknowledging the interdependence of our world, where the well-being of one individual is intrinsically connected to the well-being of the entire ecosystem, the course connects participating students with a global and local network of students, faculty, community partners, and mentors, and invite them to develop solutions to some of these health care challenges. (Typically offered: Fall) This course is cross-listed with BMEG 4593.

\section*{SEVI 4433. Small Enterprise Management. 3 Hours.}

Small enterprise opportunities and problems emphasizing innovation, management planning and control, financing, marketing and legal requirements. Emphasis on application of management knowledge to small enterprise management.
Prerequisite: SEVI 3933. (Typically offered: Spring)
SEVI 4543. Students Acquiring Knowledge Through Enterprise (S.A.K.E.) Product Innovation Lab. 3 Hours.
Provides a structured stage-gate framework for new product development through a hands-on, interactive product innovation experience. Students will learn and apply skills related to the development and testing of new concepts and products including: ideation techniques; concept writing; designing and implementing effective qualitative and quantitative consumer research; prototyping; financial profile development; and developing impactful presentations. Prerequisite: Junior standing. (Typically offered: Fall and Spring)

SEVI 4583. International Management. 3 Hours.
Develops an understanding of international business management and the cultural environments in which IB exists today. Students examine international business practices and learn about unique elements of business as it practiced in selected nations and diverse cultures. (Typically offered: Fall and Spring)

SEVI 4703. Outdoor Industries Capstone Experience. 3 Hours.
The Outdoor Industries Capstone Experience class will consist of student teams working with outdoor recreation companies to solve real-world business problems. Teams of four to six students will partner with an industry partner to identify, clarify and evaluate a business problem, develop solutions based on analysis and application of theory, and present findings and recommendations to company representatives. (Typically offered: Fall and Spring)

SEVI 4713. Outdoor Industries Product Innovation Studio. 3 Hours.
The Outdoor Industries Product Innovation Studio will develop students' knowledge of the product innovation, design and development processes in the outdoor industry. This project-based course will introduce students to the theoretical and practical aspects of new product development with subjects such as design thinking, customer discovery, product management prototyping, sustainable material sourcing, manufacturing basics, and go-to-market strategies, among others. Participants will develop a low fidelity prototype of their proposed idea as a cumulative final project. (Typically offered: Fall and Spring)

\section*{SEVI 4993. Entrepreneurship Practicum. 3 Hours.}

Hands-on management of an actual on-going business. Students will gain experience working in, making decisions about, and managing a business. Topics covered include accounting, economics, finance, information systems, law, logistics, management, and marketing. Entrance by application only. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

\section*{SEVI 5023. Sustainability in Business. 3 Hours.}

The course focuses on theoretical and practical bases for pursuing sustainability in business and society. Prerequisite: Graduate Standing. (Typically offered: Spring)

\section*{SEVI 5213. Business Foundations for Entrepreneurs. 3 Hours.}

Introduction to the fundamental business concepts an entrepreneur needs to know to evaluate and launch a successful new venture. Topic areas include recruitment, selection, motivation and management of employees, market analysis and the marketing mix, financial strategies and accounting for funds, economic considerations, and the management of operations. Prerequisite: Graduate standing. (Typically offered: Spring)

\section*{SEVI 5233. Human-Centered Design. 3 Hours.}

This course will serve as a highly hands-on experience through the human-centered design process, organized around the following modules: design research, problem identification, concept generation \& creativity, prototyping, testing, communication \& visualization. Within this course, students have the structure and space to be collaborative, creative, and agile, enabling them to rapidly design viable solutions for their organizational partners. (Typically offered: Irregular)

\section*{SEVI 5243. Product Management. 3 Hours.}

This course presents an integrated overview of the field of product management. Through this interactive course, students will be able to take organizational innovation ideas formed in the pre-requisite Human Centered Design course to the next level by learning and implementing the fundamentals of product management which included improving technical acumen, strategy development, business modeling, product market fit, understanding OKR's, EPIC's, and Retrospectives. (Typically offered: Irregular)

\section*{SEVI 5313. Strategic Management. 3 Hours.}

Strategy formulation, strategy implementation, and other topics related to the long-term success of the firm. Includes role of the general manager, international issues, and the impact of management fads on decision making. (Typically offered: Summer)

\section*{SEVI 5323. New Venture Development. 3 Hours.}

Focuses on the identification and analysis of new venture opportunities and how entrepreneurs acquire the human and financial resources needed to develop successful businesses. Topics include market analysis, development of products and services, negotiation, developing and executing business plans, and new venture financing. Students are required to complete summer assignments before the course begins in the fall semester. Prerequisite: SEVI 5213 or an undergraduate degree in business or permission of the instructor. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

\section*{SEVI 5363. Innovation \& Creativity. 3 Hours.}

This class will provide a framework for developing, assessing and implementing innovations in start-ups and established businesses. Focus is on creative decision making, managing for innovation, strategic analysis of innovations, and implementation of innovations. Aimed at entrepreneurs, brand managers, and managers in industries where innovation is a key strategic capability. (Typically offered: Spring)

\section*{SEVI 5391. Business History and Practice. 1 Hour.}

This course provides students with an overview of how businesses evolve over the years, and how they are run today. Using examples from research and practitioner articles, it allows students to learn about hands on concepts such as business models, Integrative Performance, Organization Structure, Competitive Advantage, Value Networks, and Business Obligations in an experiential manner. (Typically offered: Fall and Spring)

\section*{SEVI 541V. New Venture Development II. 3-6 Hour.}

A large-scale, real world, 10 week project involving hands-on work addressing issues faced by managers in partnering firms. Corequisite: Instructor consent. Prerequisite: SEVI 5323. (Typically offered: Spring) May be repeated for up to 12 hours of degree credit.

\section*{SEVI 5423. User Research in Applied Environments. 3 Hours.}

User Research in Applied Environments covers basic methods of user research as it relates to new product creation, including human-centered design and customer discovery. Students will work in a team environment and will learn how to pair qualitative, team-based interviewing techniques with quantitative market research to identify and explore important needs and market opportunities. (Typically offered: Summer)

\section*{SEVI 5433. Legal, Social and Economic Context for Product Innovation. 3} Hours.

In this class, we will cover a variety of issues important to product development including intellectual property and liability issues, industry and competitor analysis, supply chains and sales channels, and social and environmental issues. The course will combine readings guest lectures, and project work that applies concepts to the students' specific projects. (Typically offered: Fall)

\section*{SEVI 5443. Principles of Product Design and Prototyping. 3 Hours.}

Principles of Product Design and Prototyping develops foundational skills in product design, including hands-on experimentation with digital design and prototyping tools (e.g. Autodesk, Solidworks, Adobe). This course will pair readings, lectures, and hands-on mini-workshops to build confidence and capability in product design in the context of the student' own ideas. (Typically offered: Fall)

\section*{SEVI 545V. Product Innovation Practicum. 3-6 Hour.}

In this practicum students will have an opportunity to develop new products that are based on validated needs within their chosen industries, from the idea and discovery phases through to products that are ready to be commercialized. Students will apply concepts from their design and development classes to their product ideas, and will form relationships with corporate and entrepreneurial partners that allow for those products to be tested in real-world pilots. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

SEVI 5463. Product Management. 3 Hours.
In this class, we will explore the relationship between design, product development, and product management in a business environment. Product strategy, lifecycle management, go-to-market strategies, and user and functional testing will be covered, as will techniques of project and product management using tools widely deployed in innovative corporate and startup environments to track user needs, manage product iterations, and execute design sprints. (Typically offered: Spring)

\section*{SEVI 5843. Cross-Sector Collaboration for Sustainability. 3 Hours.}

This course explores how organizations in the three sectors of society work together in value creation by addressing social and environmental problems. Focusing on business and nonprofit organizations, we investigate the forces that bring about and influence these collaborations from practical and theoretical perspectives, and managerial responses to collaboration challenges. Prerequisite: Graduate Standing. (Typically offered: Irregular)

\section*{SEVI 5993. Entrepreneurship Practicum. 3 Hours.}

Hands-on management of an actual on-going business. Students will gain experience working in, making decisions about, and managing a competitive business. Students will be required to analyze the business in a term paper or other integrative assignment. Entrance by application only. (Typically offered: Fall, Spring and Summer)

SEVI 6123. Seminar in Entrepreneurship Research. 3 Hours.
This Ph.D.-level seminar presents an overview and introduction into organization theory literature. Emphasis on the development of relevant schools of thought, changes in the content of the traditional or 'mainstream' themes, current topics, schools of thought, and future directions are examined. Prerequisite: Admission to a Ph.D. program. (Typically offered: Irregular)

\section*{SEVI 6133. Seminar in Strategy Research. 3 Hours.}

This Ph.D.-level seminar presents an overview and introduction into the strategic management literature. Emphasis on both the content and process of the extant research. Relevant theory, methods, 'mainstream' themes, current topics, schools of thought, and future directions are examined. Prerequisite: Admission to a Ph.D. program. (Typically offered: Irregular)

\section*{SEVI 6323. Seminar in Non-Market Strategy Research. 3 Hours.}

Seminar in Non-Market Strategy--This course reviews the major theoretical and empirical foundations of current non-market strategic management thought with attention given to strategic corporate social responsibility and corporate political activity. This is not a lecture class. Students are expected to read, understand, and critique ALL papers assigned for discussion each week. Students will be assigned responsibility for leading the discussion of selected readings as well as participate in the discussion of all assigned readings. Prerequisite: Graduate Standing and SEVI PhD Coordinator approval. (Typically offered: Fall and Spring)

SEVI 636V. Special Topics in Strategy and Entrepreneurship. 1-12 Hour. SEVI 636 V is a course provided by individual faculty and tailored to the research interests of the student. The course is developed in consultation with the student so that scholarly articles are assigned to assist the student with detailed knowledge of the specific research area in which the student has interests. Prerequisite: Graduate standing and permission of the SEVI PhD Coordinator. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

\section*{SEVI 6423. Seminar in Applied Research Methods. 3 Hours.}

This course focuses on applied research topics in the strategic management and entrepreneurship. The main emphasis is on the research methods that will serve as the foundation for the methodological toolkit. Prerequisite: Graduate standing and permission of the SEVI PhD Coordinator. (Typically offered: Irregular)

SEVI 700V. Doctoral Dissertation. 1-18 Hour.
Doctoral dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Supply Chain Management (SCMT)}

\section*{Courses}

\section*{SCMT 2103. Integrated Supply Chain Management. 3 Hours.}

An introduction to integrated supply chain management. Core capabilities in plan, source, make, deliver, service/customer management, new product design, strategy, governance, project management, performance management, technology enablement, and supply chain finance are explored to provide students with a comprehensive cross-functional view of demand-driven value networks. Corequisite: Walton College students: MATH 2053 or MATH 2554 each with a grade of C or better. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of C or better. (Typically offered: Fall and Spring)

\section*{SCMT 2103H. Honors Integrated Supply Chain Management. 3 Hours.}

An introduction to integrated supply chain management. Core capabilities in plan, source, make, deliver, service/customer management, new product design, strategy, governance, project management, performance management, technology enablement, and supply chain finance are explored to provide students with a comprehensive cross-functional view of demand-driven value networks. Corequisite: Walton College students: MATH 2053 or MATH 2554 with a grade of C or better and honors standing. Prerequisite: Non-business students: BUSI 1033, ACCT 2013 and (ECON 2013 or ECON 2023), all with a grade of \(C\) or better and honors standing.
(Typically offered: Fall and Spring)
This course is equivalent to SCMT 2103.

\section*{SCMT 3103. Supply Chain Management Internship. 3 Hours.}

This experience is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the supply chain profession. Prerequisite: Department consent, completion of pre-business core, junior standing, and SCMT 2103 with a grade of C or better. (Typically offered: Fall, Spring and Summer)

SCMT 3103H. Honors Supply Chain Management Internship. 3 Hours.
This experience is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the supply chain profession. Prerequisite: Department consent, completion of pre-business core, junior standing, honors standing and SCMT 2103 with a grade of C or better. (Typically offered: Fall, Spring and Summer)
This course is equivalent to SCMT 3103.
SCMT 3443. DELIVER: Transportation and Distribution Management. 3 Hours. Management of functional delivery and customer service capabilities in demanddriven value networks. Applicable interfaces with enabling capabilities such as governance, performance management, analytics, and technology enablement are evaluated. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 with a grade of \(C\) or better. (Typically offered: Fall and Spring)

SCMT 3613. SOURCE: Procurement and Supply Management. 3 Hours. This course covers the critical sourcing and procurement processes: strategic sourcing, source to pay, and supplier relationship management. Additionally, it covers innovative efforts to grow sourcing contribution to demand-driven supply chain integration, including sustainability, technology, and risk management. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 with a grade of \(C\) or better. (Typically offered: Fall and Spring)

SCMT 3623. PLAN: Inventory and Forecasting Analytics. 3 Hours.
The intent of this course is to rigorously examine two key elements of logistics: inventory control and forecasting. Coverage of the former topic specifically focuses on inventory control methods for stochastic demand and lead times. Besides a review of the associated theoretical bases, the implementation of such policies in Excel is a central component of the course. Forecasting topics covered in this course include a review of a variety of forecasting techniques and forecast error measurement. Moreover, the linkage between forecasting and inventory control is discussed. As with inventory control, students will learn how to implement various forecasting techniques in Excel. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{SCMT 3633. Supply Chain Service and Customer Management. 3 Hours.}

Management of supply chain service quality, relationships, and customer segmentation in demand-driven value networks. Applicable cross-functional interfaces, performance measurement, and integration opportunities for boundary spanning supply chain professionals are discussed with emphasis on value-added behavioral exchange dynamics. Prerequisite: SCMT 3613. (Typically offered: Irregular)

\section*{SCMT 3643. International Logistics. 3 Hours.}

Logistics activities in international business with special emphasis on international sourcing and distribution channels, international transportation, import and export procedures, international sale and payment terms, and documentation. Special emphasis is placed on current events and their effect on the management of operations of U.S.-based organizations. Prerequisite: ((ECON 2013 and ECON 2023), or ECON 2143) and SCMT 2103 with a grade of C or better. (Typically offered: Fall and Spring)

\section*{SCMT 3653. Project Management: Supply Chain New Product Planning and Launch. 3 Hours.}

Applies principles and tools of project management to supply chain industry projects in the new product development launch process to ensure alignment with supply chain processes. Experiential learning in collaborative team settings facilitate new product development and launch solutions to demand-driven value network problems. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of C or better. (Typically offered: Fall and Spring)

SCMT 3663. MAKE: Supply Chain Process Improvement. 3 Hours.
The course focuses on the fundamental concepts, techniques, and tools for managing production and improving business processes across the supply chain, in both manufacturing and service contexts. Philosophies, principles, approaches, and techniques students will learn and experience in this course include Lean, Total Quality Management, Theory of Constraints, Practical Scientific Thinking, and Toyota Kata. Prerequisite: SCMT 2103 with a grade of C or better. (Typically offered: Fall and Spring)

SCMT 4003H. Honors Supply Chain Management Colloquium. 3 Hours. Explores events, concepts and/or new developments in the field of Supply Chain Management. Prerequisite: Honors standing and ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of C or better. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SCMT 4103. Special Topics in Supply Chain Management. 3 Hours.}

Special topics in supply chain management not available in other courses. Topics are selected by the supply chain faculty for each semester each course is offered. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of C or better. (Typically offered: Irregular)

SCMT 4113. Supply Chain Management Executive in Residence. 3 Hours.
The focus of this course will be executive viewpoints in supply chain management as it relates to relational skill development. The growth of supply chain management has resulted in the need for relational skills and capabilities for supply chain professionals. The purpose of the course is to help students identify not only the current issues of the industry, but also gather various viewpoints about the topics. Each week, an executive will speak with students on a topic of his or her choice. The goal is to allow a broad collection of issues to be presented by and to the students.
Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of \(C\) or better. (Typically offered: Fall and Spring)
SCMT 4123. Environmental, Social and Governance Strategies and Operations in Supply Chains. 3 Hours.
Environmental, Social and Governance (ESG) issues can carry significant supply chain challenges, risks, and opportunities. This course focuses on the relationship between ESG and supply chain planning, sourcing, manufacturing and service operations and logistics. Topics may include values-based leadership; globalizing social and environmental sustainability; diversity, inclusion and ethics across the supply chain; and voluntary product standards and governance, stakeholder engagement, reverse logistics, humanitarian logistics, ethical sourcing, transparency, innovation, resource scarcity, waste reduction, carbon emissions, and human rights across the extended supply network. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of \(C\) or better. (Typically offered: Irregular)

\section*{SCMT 4233. Supply Chain Design and Optimization. 3 Hours.}

This course focuses on supply chain network design and the underlying strategies needed to manage a supply chain as business conditions change and evolve. The purpose of this course is to provide the student with supply chain design thinking skills that they can employ to design solutions that optimize supply chain performance considering costs, constraints, and structure. The course is a combination of lecture and supply chain optimization case studies (network, transportation, and inventory). Prerequisite: SCMT 3443 and SCMT 3623. (Typically offered: Fall and Spring)

SCMT 4633. Supply Chain Performance Management and Analytics. 3 Hours. Integrates the strategic directives and successful execution by using supply chain performance management and analytics to drive supply chains from end-to-end. Examines and applies data analytics and visualization tools to better manage conflicting supply chain objectives and trade-offs. Prerequisite: SCMT 2103 with a grade of "C" or better. (Typically offered: Fall and Spring)
SCMT 4653. Supply Chain Strategy and Change Management. 3 Hours. Evaluate and select appropriate supply chain strategies and change management approaches for business situations. This capstone course leverages plan, source, make, deliver, customer service, and new product development capabilities to meet strategic and financial goals in demand-driven networks. Prerequisite: SCMT 3443, SCMT 3613 and SCMT 3623. (Typically offered: Fall and Spring)
SCMT 466V. Independent Study in Supply Chain Management. 1-3 Hour. Permits students to explore selected topics in supply chain management, logistics and transportation. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of C or better. (Typically offered: Fall and Spring)

SCMT 4853. Cross-Sector Collaboration for Sustainability. 3 Hours.
This course explores how organizations in the three sectors of society work together in value creation by addressing social and environmental problems manifest in global supply chains. Focusing on business and nonprofit organizations, we investigate the forces that bring about and influence these collaborations from practical and theoretical perspectives. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and SCMT 2103 each with a grade of \(C\) or better. (Typically offered: Spring)

SCMT 5123. Sustainable Logistics and Supply Chain Management. 3 Hours. Explores key sustainability concepts across supply chain functions of supply management, operations, and distribution. Course topics include values-based leadership, globalizing sustainability, marketing sustainability, voluntary product standards and governance, stakeholder engagement, reverse logistics, humanitarian logistics, and transportation. Overall, we will consider the feasibility and role of firms in producing sustainability in global supply chains. Prerequisite: Graduate Standing and Departmental Consent. (Typically offered: Irregular)

\section*{SCMT 5133. Quantitative Methods and Decision Making. 3 Hours.}

Utilization of information, quantitative techniques, and computer application in decision making and problem solving for managers. Prerequisite: Graduate Standing and Departmental Consent. (Typically offered: Fall)

SCMT 5143. Leveraging Supply Chain Value. 3 Hours.
This course is designed to align traditional supply chain management and supply chain finance. This course focuses on connecting supply chain strategy, tactics and structure with profitability and value creation. This course will explore the impact of service / constraints, costs, capital and cash flows on the supply chain value proposition. Content includes capital budgeting and investment, ROI, cost optimization and working capital management from a supply chain perspective. Real-life supply chain cases will be used throughout the course. Prerequisite: Graduate standing and department consent. (Typically offered: Summer)

\section*{SCMT 560V. Special Topics in Logistics. 1-6 Hour.}

Explores current events, concepts, and new developments in the field of logistics and transportation. Topics are selected by the Marketing and Transportation faculty for each semester the course is offered. Prerequisite: Graduate Standing and Departmental Consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
SCMT 5613. Supply Chain Risk, Disruption, and Resilience. 3 Hours.
This course explores the area of Business Continuity and Risk Management in a comprehensive manner to provide for organizational resilience. Particular emphasis is placed on assessing threats which may lead to disastrous events, evaluating control alternatives and implementing strategies. Practical solutions to enable an organization to mitigate risk, manage crisis and recover after a disaster are discussed. Prerequisite: Graduate standing and department consent. (Typically offered: Fall)

\section*{SCMT 5623. Technology-enabled Supply Chain Design and Optimization. 3} Hours.
This course focuses on supply chain network design and the underlying strategies needed to manage a supply chain as business conditions change and evolve. The purpose of this course is to provide the student with design thinking skills that they can employ to design solutions that optimize supply chain performance considering costs, constraints and structure. The course is a combination of lecture and supply chain optimization case studies (network, transportation and inventory). Prerequisite: Graduate Standing. (Typically offered: Fall and Spring)

\section*{SCMT 5633. Foundations for New Product Launch and Integrated DemandDriven Value Networks. 3 Hours.}

Supply chain management is the integration of key business processes from end user through suppliers. The focus of this course is on the business fundamentals and core processes that must be linked throughout the supply chain in order to ensure the effective development and delivery of products and services that satisfy customers. Prerequisite: Graduate Standing and Department Consent. (Typically offered: Fall and Spring)
SCMT 5663. PLAN: Demand Planning and Inventory Operations. 3 Hours. This course focuses on 'plan' in the plan, source, make, deliver framework. It examines the integrated planning and management of supply chain activities including, notably, demand forecasting and replenishment. In addition to modeling related decisions both in within-firm and supply chain contexts, strategic issues related to interfirm coordination and collaboration will be discussed. Prerequisite: Graduate Standing and Department Consent. (Typically offered: Fall and Spring)

SCMT 5683. SOURCE: Global Procurement and Supply Management. 3 Hours. In the global supply chain sourcing and procurement plays a critical role in ensuring supply, growing margins and contributing to reliable delivery to customers. This course covers the core sourcing and procurement processes of strategic sourcing, supplier relationship management and takes a leadership approach to those covering topics such as change management and business alignment issues involved. Prerequisite: Graduate Standing and Departmental Consent. (Typically offered: Spring)
SCMT 5693. Supply Chain Performance Management and Analytics. 3 Hours. This course will survey standard and advanced analytical techniques used to transform data into actionable business intelligence and students will gain hands-on experience with these techniques. They will gain an understanding of the practical considerations that arise in real-world applications by means of a term project. They will gain exposure to data science software capable of advanced predictive analytics and also through cases, expose them to innovative ways in which firms are using analytics to improve supply chain management processes. Prerequisite: Graduate Standing and Department Consent. (Typically offered: Fall)

SCMT 5713. MAKE: Achieving Operational Excellence. 3 Hours.
This course focuses on understanding the key processes involved in providing valuable products and services for customers as well as important approaches to continuously improving these processes. Learners will leave this course with skills necessary to continuously improve the key manufacturing and service processes involved in providing valuable products and services to customers, as well as the project management competencies necessary to embedded new, innovative capabilities in their supply chains. Prerequisite: Graduate Standing and Departmental Consent. (Typically offered: Fall and Spring)

\section*{SCMT 5723. DELIVER: Customer Service and Distribution Management. 3 Hours.}

This course is designed to provide students with a broad understanding of the customer service and delivery processes needed to drive demand-driven value networks. The emphasis of this course will focus on systemic alignment across the functional capabilities of customer fulfilment service quality, transportation, distribution and return capabilities across the supply chain, with a specific emphasis on governance, performance management and the integration of advanced technologies. Prerequisite: Graduate Standing and Departmental Consent. (Typically offered: Fall and Spring)
SCMT 5733. Supply Chain Strategy, Governance and Change Management. 3 Hours.
Evaluate and select appropriate supply chain strategies, change management approaches, and governance structures for business situations. This course leverages plan, source, make, deliver, customer service, and new product development capabilities to meet strategic and financial goals in demand-driven value networks. Prerequisite: Graduate Standing and Departmental Consent. (Typically offered: Fall and Spring)

\section*{SCMT 601V. Graduate Colloquium. 1-6 Hour.}

This course familiarizes students with academic and professional issues in the discipline of supply chain management with exposure to current research and contemporary research practices, current industry trends, the publication process, professional service opportunities, and pedagogical issues. Prerequisite: Admission to the PhD program in Supply Chain Management. (Typically offered: Fall and Spring) May be repeated for up to 12 hours of degree credit.
SCMT 636V. Special Topics in Supply Chain Management. 1-6 Hour. Independent reading and investigation in supply chain management. Prerequisite: Doctoral standing. (Typically offered: Fall, Spring and Summer)

SCMT 6433. Supply Chain Management Research. 3 Hours.
Introduces students to major streams of SCM research and discusses the interest and merit of the research question(s), the appropriateness of the theoretical framework and/or hypothesis development, the adequacy of the research design, including data collection, measurement, and analysis (methodology), the accuracy of the discussion of the results. Prerequisite: Admission to doctoral program. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SCMT 6443. Theory in Supply Chain Management. 3 Hours.}

Provides an overview of theories from fields such as strategic management and marketing and explores applications of these theories to supply chain management research. Emphasis is placed on the development of theoretically grounded testable hypotheses in the context of a broad range of SCM research areas. Prerequisite: Admission to doctoral program. (Typically offered: Irregular)
SCMT 6453. Behavioral Supply Chain Management. 3 Hours.
Focuses on human behavior in supply chain management. Topics may include but will not be restricted to behavior in inventory and ordering processes, in retail store execution, in global supply chain management, in the face of adversity and catastrophic supply chain risk, and in supply chain relationships. Prerequisite: Admission to doctoral program. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SCMT 6473. Emerging Topics in Supply Chain Management. 3 Hours.}

Covers various emerging topics, such as information technology applications in the supply chain, humanitarian logistics, supply chain security, and individual-level decision-making in the supply chain. Prerequisite: Admission to doctoral program. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SCMT 6483. Supply Chain Economics. 3 Hours.}

This course familiarizes students with economic concepts and philosophies underlying the organization of economic activity in the discipline of supply chain management. Enables students to evaluate, critique, and judge the quality of scholarly supply chain research that is grounded on economic principles and ideas. Provides training in developing supply chain research grounded in economic principles and ideas into an academic paper. Prerequisite: Admission to PhD program in Supply Chain Management. (Typically offered: Fall and Spring)

SCMT 6513. Contemporary Research in Service Supply Chain Management. 3 Hours.
This seminar is designed for doctoral students interested in carrying out research on topics related to Service Supply Chain Management (SSCM). Therefore the course will cover recent and classic literature in the service management, operations management, and supply chain management domains. The seminar is organized as a discussion forum for conceptualization, design and execution of research on these topics. Prerequisite: Instructor Consent. (Typically offered: Irregular)

\section*{SCMT 6523. Theory-Driven Archival Supply Chain Management Research. 3} Hours.
The purpose of this seminar is to learn how to work with and analyze archival data in a manner that is consistent with theory and meets the rising standards and expectations of leading empirical SCM and OM journals. Particular attention will be paid to issues such as data collection, sampling, measurement, econometric issues, estimation methods, the presentation/interpretation of the results, and the assessment of the sensitivity of the results. Students will gain "hands-on" experience collecting, manipulating and analyzing large data sets. Prerequisite: Instructor Consent. (Typically offered: Irregular)

\section*{SCMT 700V. Doctoral Dissertation. 1-18 Hour.}

Dissertation studies in supply chain management. Prerequisite: Candidacy. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Sustainability (SUST)}

\section*{Courses}

\section*{SUST 1103. Foundations of Sustainability. 3 Hours.}

Foundations of Sustainability is an interdisciplinary course to introduce concepts and theories of sustainability at global, regional, and local levels. Emphasis is on four thematic areas of sustainability; social, natural, built and managed systems. The aim is to increase environmental literacy for engagement of sustainability into students' own disciplines. (Typically offered: Spring)

\section*{SUST 1103H. Honors Foundations of Sustainability. 3 Hours.}

Foundations of Sustainability is an interdisciplinary course to introduce concepts and theories of sustainability at global, regional, and local levels. Emphasis is on four thematic areas of sustainability; social, natural, built and managed systems. The aim is to increase environmental literacy for engagement of sustainability into students' own disciplines. Prerequisite: Honors standing. (Typically offered: Spring) This course is equivalent to SUST 1103.

\section*{SUST 2103. Applications of Sustainability. 3 Hours.}

Applications of Sustainability is an interdisciplinary course introducing data gathering, data analysis or interpretation, and synthesis of data applied to problems in sustainability. Students engage in hands-on, inquiry-based investigation of sustainability issues across four thematic areas: social systems, natural systems, built systems (Architecture \& Engineering), and managed systems (Agriculture \& Business). Prerequisite: SUST 1103 or instructor consent. (Typically offered: Fall)
SUST 390V. Special Problems in Sustainability. 1-6 Hour.
Special Problems is intended to fulfill a need in the sustainability curriculum to offer one-time pilot course work in any semester prior to the formal curriculum approval process, offer seminars on unusual but timely topics in sustainability on a one-time basis, or independent study for students seeking additional expertise in sustainability research and scholarship. Prerequisite: SUST 1103 and SUST 2103 or instructor permission. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{SUST 4103. Capstone Experience in Sustainability. 3 Hours.}

A capstone experience focused on service learning, research learning, or internship in sustainability. Student engagement in community service, research, or relevant work on sustainability through a summer internship or equivalent experience provides opportunities for students to apply sustainability theories and principles learned from prior course work toward advancing sustainability across society. Prerequisite: SUST 1103 and SUST 2103. (Typically offered: Spring)

\section*{SUST 4603. Environmental Sociology. 3 Hours.}

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. Prerequisite: Junior or senior standing. (Typically offered: Fall)
This course is cross-listed with HDFS 4603, SOCI 4603.
SUST 4693. Environmental Justice. 3 Hours.
This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. (Typically offered: Spring)
This course is equivalent to GEOS 4693.

SUST 5103. Foundations of Sustainable and Resilient Systems. 3 Hours. Exploring sustainability foundations, application, and assessment, this course provides students the skills and competencies to understand, communicate, and evaluate sustainability at multiple scales. Using core sustainability concepts, such as systems and complexity, resilience and vulnerability, we evaluate interrelationships among environmental, societal, and economic well-being and the implications for decision-making. (Typically offered: Fall)
SUST 5203. Decision Making, Analysis and Synthesis in Sustainability. 3 Hours.
Provides an applied framework for analyzing decision dynamics, supporting and promoting more sustainable decisions, and measuring the sustainability of systems. The course applies theories of change, institutional decision theory, social and institutional constructs of sustainability, indicator and metric development across social, ecological, and economic domains, and communication strategies. (Typically offered: Spring)
SUST 5303. Sustainable Global Food, Energy and Water Systems. 3 Hours. Provides a detailed review of the existing global food production/distribution and water systems, with an emphasis on scarcity, equity, management and challenges from changing global systems. This course explores the inputs and efficiencies of existing agricultural production systems, and examines equity and value in these systems. (Typically offered: Fall)

\section*{SUST 5603. Environmental Sociology. 3 Hours.}

The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. Graduate degree credit will not be given for both SUST 4603 and SUST 5603). (Typically offered: Fall)

\section*{SUST 5693. Environmental Justice. 3 Hours.}

This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies. Graduate degree credit will not be given for both SUST 4693 and SUST 5693. (Typically offered: Spring)

\section*{SUST 590V. Special Problems in Sustainability. 1-6 Hour.}

Special Problems is intended to fulfill a need in the sustainability curriculum to offer one-time pilot course work in any semester prior to the formal curriculum approval process, offer seminars on unusual but timely topics in sustainability on a one-time basis, or independent study for students seeking additional expertise in sustainability research and scholarship. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

SUST 6913. Sustainable Design and Construction: Remediation and Plants on Structure. 3 Hours.
Plants on Structure introduces students to strategies and techniques of plant use in the built environment. Potential topics include green infrastructure (e.g., green roofs and walls), site, soil, and water remediation techniques (e.g., phytoremediation, bioswales, and living machines), and structural considerations. Technical documentation methods and other representation and/or communication techniques as a means of conveying design intent are included. (Typically offered: Spring)

\section*{Swahili (SWAH)}

\section*{Courses}

\section*{SWAH 1003. Elementary Swahili I. 3 Hours.}

Stresses correct pronunciation, aural comprehension, simple speaking ability, and leads to mastery of basic grammar and limited reading ability. (Typically offered: Irregular)

\section*{SWAH 1013. Elementary Swahili II. 3 Hours.}

Continues to stress correct pronunciation, aural comprehension, and speaking ability and continues to build mastery of basic grammar and limited reading ability. Prerequisite: SWAH 1003 (Typically offered: Irregular)
SWAH 2003. Intermediate Swahili I. 3 Hours.
Leads to greater facility in spoken language and develops more advanced reading and writing skills. Prerequisite: SWAH 1003 and SWAH 1013. (Typically offered: Irregular)

\section*{SWAH 2013. Intermediate Swahili II. 3 Hours.}

Leads to greater facility in spoken language and develops more advanced reading and writing skills. Prerequisite: SWAH 1003, SWAH 1013 and SWAH 2003. (Typically offered: Irregular)

\section*{Technology Education (TEED)}

\section*{Courses}

TEED 1203. CAD Technology I. 3 Hours.
Use and care of instruments; lettering, sketching, applied geometry, pictorial drawing, and orthographic projection. Introduction to computer-aided drafting. (Typically offered: Spring)

\section*{TEED 2103. Technology and Society. 3 Hours.}

An examination of the complex relationships between society, values, and technological development in developed and under-developed nations. (Typically offered: Fall)
TEED 4103. Engineering Design for Technology Education Capstone. 3 Hours. Analysis of engineering design, focus on design processes, physical and computer modeling, and materials processing. Prerequisite: TEED 2103. (Typically offered: Irregular)

\section*{Theatre (THTR)}

\section*{Courses}

THTR 1003. Theatre Appreciation (ACTS Equivalency = DRAM 1003). 3 Hours. Introduction to theatre arts; playwriting, directing, acting, and design. For the general student. May not be presented towards satisfaction of the B.A. in fine arts requirement by theatre majors. (Typically offered: Fall, Spring and Summer)

\section*{THTR 1003H. Honors Theatre Appreciation. 3 Hours.}

Introduction to theatre arts; playwriting, directing, acting, and design. For the general student. May not be presented towards satisfaction of the B.A. in fine arts requirement by theatre majors. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to THTR 1003.
THTR 1013. Musical Theatre Appreciation. 3 Hours.
Includes reading, viewing, guided listening, critical thinking, creating, and writing about this quintessentially American art form and its role in society. (Typically offered: Fall, Spring and Summer)
THTR 1013H. Honors Musical Theatre Appreciation. 3 Hours.
Includes reading, viewing, guided listening, critical thinking, creating, and writing about this quintessentially American art form and its role in society. Prerequisite: Honors candidacy. (Typically offered: Fall and Spring)
This course is equivalent to THTR 1013.

THTR 1223. Introduction to Theatre. 3 Hours.
This course is designed to create an ensemble of theatre students, passionate about all areas of discipline within the theatre art form. Theatre majors get acquainted with the practical expectations of being a student in the Department of Theatre while gaining a more in-depth appreciation of theatre as a collaborative art form. Prerequisite: Theatre major or minor. (Typically offered: Fall) This course is equivalent to THTR 1003.
THTR 1313. Stage Technology: Costumes and Makeup. 3 Hours.
Fundamentals of basic costume construction with an emphasis on techniques, materials, planning and process. Training in the basic principles of theatrical makeup application. Corequisite: Drill component. Prerequisite: Theatre major or instructor consent. (Typically offered: Fall and Spring)

THTR 1323. Stage Technology: Scenery and Lighting. 3 Hours.
Fundamentals of scenery and lighting technology with emphasis on theatre tools, equipment, and basic drafting. Training in basic principles and skills of stage carpentry, scene painting, lighting technology and rigging. Prerequisite: Theatre major or instructor consent. Corequisite: Drill component. (Typically offered: Fall and Spring)

\section*{THTR 1423. Script Analysis. 3 Hours.}

Investigation of the dramatic forms and structures of play texts - from the classical era to the present - with special emphasis on how actors, directors, and designers encounter and realize texts in the production process. (Typically offered: Fall and Spring)

\section*{THTR 1683. Acting I. 3 Hours.}

An introductory acting studio course, exploring the physical, vocal, analytical, and imaginative processes required for the performance of dramatic texts. Through exercises and scene study, this course builds a vocabulary and technique for acting. (Typically offered: Fall and Spring)

\section*{THTR 1883. Acting I for Theatre Majors. 3 Hours.}

An introductory acting studio course for theatre majors, exploring the physical, vocal, analytical, and imaginative processes required for the performance of dramatic texts. Through exercises and scene study, this course builds a vocabulary and technique that serves as a foundation for theatre classes within the major. Corequisite: Theatre major or minor. (Typically offered: Fall and Spring)

\section*{THTR 2313. Fundamentals of Theatrical Design. 3 Hours.}

Principles and practices of theatre design including the elements of design and the fundamental principles of art and their application to the areas of set, costume, and lighting design. This course studies the designer's role in the theatre, design process, and aesthetics. Emphasis on the basic principles of two-dimensional art and graphic forms through the use of various media. Prerequisite: THTR 1313, THTR 1323 and THTR 1423. (Typically offered: Fall)
THTR 2461. Alexander Technique Lessons. 1 Hour.
Students will become aware of habitual patterns of tension and how these patterns interfere with performance, learning, and overall health. The Technique offers practical skills for improving coordination and for re-gaining a sense of ease of movement in all activities. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.
THTR 2473. Voice and Speech for the Actor. 3 Hours.
Develops the student's free, natural voice for use on stage and in front of the camera. Topics address physical awareness, breath awareness, touch of sound, gathering vibrations, channel of sound, spine awareness, resonators, rib awareness, and articulation. Prerequisite: (THTR 1223 or THTR 1003), THTR 1423, and (THTR 1683 or THTR 1883). (Typically offered: Fall and Spring)

\section*{THTR 2483. Stage Movement. 3 Hours.}

An introduction to the Psycho-physical approach to acting and actor training developed by Michael Chekhov. Prerequisite: (THTR 1003 or THTR 1223),
THTR 1423 and (THTR 1683 or THTR 1883). (Typically offered: Fall and Spring)

\section*{THTR 2683. Acting II. 3 Hours.}

An acting studio course deepening the exploration of techniques introduced in Acting I, including expanded work on characterization and script analysis through exercises, scene-work and monologue performance. Prerequisite: THTR 1683 or THTR 1883 (Typically offered: Fall and Spring)

THTR 3001. Production Practicum. 1 Hour.
Credit for participation in technical assignments related to mainstage or facultydirected productions: one (1) credit hour per production. Assignments shall be determined by the faculty. Credit will be awarded only after completion of assignments and only with faculty approval. Pre- or corequisite: Current standing as a THTR Major or Minor or with instructor permission. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{THTR 3011. Performance Practicum. 1 Hour.}

Credit for performance in faculty directed productions; one credit hour per production. Assignments shall be determined by the faculty. Credit will be awarded only after satisfactory completion of assignment and with faculty approval. (Typically offered: Fall and Spring) May be repeated for up to 2 hours of degree credit.

\section*{THTR 3213. Costume Design. 3 Hours.}

Learn the art and practice of costume design for theatrical productions. Emphasis will be placed on the elements and principles of design as it relates to character development. Additional emphasis will be placed on script analysis, research methods, fabric selection, collaboration, and rendering techniques. Prerequisite: THTR 2313. (Typically offered: Fall Odd Years)
THTR 3463. Introduction to the Alexander Technique. 3 Hours.
The Alexander Technique helps us to become aware of habits of tension and how these patterns interfere with performance, learning, and overall health. The technique offers a systematic process of re-learning how to move with more ease and coordination in all activities. (Typically offered: Summer) May be repeated for up to 6 hours of degree credit.

\section*{THTR 3513. Drafting for the Theatre. 3 Hours.}

Covers basic technical drawing and graphic skills necessary to communicate design ideas to fellow artisans. Both production and design-oriented drafting will be explored using both hand drafting and computer techniques. Prerequisite: THTR 1323 or instructor consent. (Typically offered: Fall Even Years)

\section*{THTR 3653. Directing I. 3 Hours.}

Basic principles and techniques of play direction, including play analysis, audition and rehearsal organization, staging and collaborating with actors. Pre- or Corequisite: Theatre major and junior or senior standing, or instructor consent. Prerequisite: (THTR 1223 or THTR 1003 or THTR 1003H), THTR 1313, THTR 1323, THTR 1423, and (THTR 1683 or THTR 1883). (Typically offered: Fall and Spring)

\section*{THTR 3663. Acting: Scene Study. 3 Hours.}

An advanced acting studio building on techniques introduced in Acting I and II. Intensive work on script analysis, emotional preparation, awakening the imagination, characterization, partner work and playing action. Prerequisite: THTR 2683. (Typically offered: Spring)

\section*{THTR 3673. Acting: Auditioning. 3 Hours.}

An advanced acting course, focusing on theatrical monologues and developing the actor's confidence and ability in theatre auditioning. In simulated auditions, students develop and explore contrasting monologues, including contemporary and classical pieces, comedy, and drama. Students practice slating techniques, cold and prepared callbacks, musical auditions, video submissions, and resume preparation. Prerequisite: THTR 2683. (Typically offered: Fall)

\section*{THTR 3683. Stage Management. 3 Hours.}

The study of the principles of stage management as practiced in academic and professional theatre. The course develops the core management skills of communication and organization through classroom exercises. The course also provides opportunities for stage management in University productions. Prerequisite: THTR 1313 and THTR 1323. (Typically offered: Spring)

\section*{THTR 3733. Lighting Design. 3 Hours.}

The study of the art and practice of stage lighting design through demonstration and projects. The course includes lighting technology, history, electricity, fixtures, consoles and control systems. Emphasis is placed on collaboration and storytelling with light. Prerequisite: THTR 2313. (Typically offered: Fall Even Years)

\section*{THTR 3903. Makeup Design. 3 Hours.}

Learn the principles, techniques, materials, and tools used in makeup design for theatrical productions. Character analysis, character development, as well as period styles will be the basis for all makeup applications. Specialized make up includes an introduction to prosthetics, scars, and wounds. Prerequisite: THTR 2313. (Typically offered: Irregular)

\section*{THTR 3923H. Honors Colloquium. 3 Hours.}

Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in THTR). (Typically offered: Irregular) May be repeated for degree credit.

\section*{THTR 399VH. Honors Thesis. 1-6 Hour.}

The Honor student will complete a thesis. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

\section*{THTR 4063. Playwriting. 3 Hours.}

A beginning workshop in the fundamentals of playwriting designed for students interested in exploring how their personal stories translate and get expressed theatrically. Exercises in dialogue, character development, conflict, and dramatic structure will culminate in the completion of an original one-act play. Prerequisite: Sophomore standing or greater. (Typically offered: Fall and Spring)

\section*{THTR 4123. Rendering for the Theatre. 3 Hours.}

Develops the vocabulary of visual communication for theatre using a variety of media and techniques. Investigation of traditional as well as digital drawing and painting methods and materials used by theatrical designers. Prerequisite: THTR 2313. (Typically offered: Spring Odd Years)
THTR 4141. Singing for Musical Theatre. 1 Hour.
Private study of the singing voice focusing on musical theatre vocal technique and repertoire. (Typically offered: Irregular) May be repeated for up to 2 hours of degree credit.

\section*{THTR 4153. Musical Theatre Performance. 3 Hours.}

Principles and techniques of performing a singing role for the theatre. Examines the relationship between score and text. (Typically offered: Fall Even Years)

\section*{THTR 4233. History of the Theatre I. 3 Hours.}

A survey of dramatic literature, theatre practices and cultural contexts for dramatic presentation from classical Greece through the 19th century. The research component of this course fulfills the Fulbright Writing Requirement. Prerequisite: THTR 1223 or THTR 1003 or THTR 1003H. (Typically offered: Fall)

\section*{THTR 4333. History of the Theatre II. 3 Hours.}

A survey of dramatic literature from the rise of realism to the present, designed to examine historical context, theatrical convention, modes of storytelling and questions of diversity and inclusion in the theatrical cannon. Prerequisite: THTR 1223 or THTR 1003 or THTR 1003H. (Typically offered: Spring)

THTR 4463. African American Theatre History -- 1950 to Present. 3 Hours. A chronological examination of African-American theatre history from 1950 to the present through the study of African-American plays and political/social conditions. Upon completion of this course the student should be familiar with the major works of African-American theatre and have a deeper understanding of American History. (Typically offered: Irregular)

\section*{THTR 4483. Acting: Meisner I. 3 Hours.}

This course introduces students to the Sanford Meisner approach to acting. A progressive series of exercises focus on listening, concentration, imagination, working from impulse, and actively connecting to given circumstances. This class is the first in a two course sequence of Meisner study. Prerequisite: THTR 2683. (Typically offered: Fall Odd Years)

THTR 4493. Acting: Meisner II. 3 Hours.
Continuation of Beginning Meisner Technique. A progressive series of exercises focus on emotional preparation, connection to impulse, and living fully under imaginative circumstances. Prerequisite: THTR 4483. (Typically offered: Spring Even Years)

\section*{THTR 4653. Scene Design. 3 Hours.}

Theory and practice in the art of scenic design, including historical and contemporary styles and techniques. Prerequisite: THTR 2313. (Typically offered: Spring Even Years)

\section*{THTR 4663. Sound Design and Engineering. 3 Hours.}

The study and application of sound in a theatrical environment covering both technology and design aspects of sound in a live setting. Prerequisite: THTR 2313. (Typically offered: Irregular)

\section*{THTR 4683. Acting: Shakespeare. 3 Hours.}

An acting studio course exploring the performance of Shakespearean texts, with focus on scansion, verse and prose, poetry, characterization and voice and articulation. Prerequisite: THTR 2683. (Typically offered: Spring Odd Years)

\section*{THTR 4703. Theatre Education: Methods of Instruction. 3 Hours.}

Introduces leading theories and practices in theatre instruction for junior high and high school students. Focuses on creating, adapting, and justifying pedagogical strategies as well as the design and implementation of effective theatre curriculum. Prerequisite: CIED 3033 or SEED 4022 or instructor's consent. (Typically offered: Fall)

THTR 4713. Theatre Education: Program Design and Leadership. 3 Hours. Introduces the skills necessary for the successful integration of theatre arts in the secondary school environment. Focuses on the promotion of theatre as a discipline, both in classes and as an co-curricular activity. Advances planning and leadership skills necessary for theatre program directors. Contains one required field experience. Prerequisite: THTR 4703. (Typically offered: Spring)

\section*{THTR 4833. Scene Painting. 3 Hours.}

A studio class in painting techniques for the theatre. Exercises in color, textures, styles, and execution. Prerequisite: THTR 2313. (Typically offered: Fall Even Years)

\section*{THTR 490V. Independent Study. 1-3 Hour.}

Individually designed and conducted programs of reading and reporting under the guidance of a faculty member. Prerequisite: Instructor consent. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.
THTR 491V. Special Topics. 1-3 Hour.
Classes not listed in the regular curriculum, offered on demand on the basis of student needs and changes within the profession. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{THTR 492V. Internship. 1-12 Hour.}

A practical, experiential approach to performance and production using the internship program to provide training and experience more advanced than that provided during the normal school year. Students will outline a contract of specific requirements based upon that individual's needs, goals, and skills. Prerequisite: Instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 12 hours of degree credit.

THTR 493V. Special Topics in Design and Technology. 1-3 Hour.
Topics not listed in the regular curriculum. Topics related to scenery, costumes, lighting, and sound will be offered on demand to accommodate Design \& Technology focused student needs and changes within the profession. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

THTR 494V. Special Topics in Performance. 1-3 Hour.
Topics not listed in the regular curriculum. Topics related to acting, directing, and playwriting will be offered on demand to accommodate Design \& Technology focused student needs and changes within the profession. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.
THTR 4953. Theatre in London. 3 Hours.
Immerses scholars in the world of theatre and culture in Britain. Students spend four weeks in London with excursions to Stratford-upon-Avon, Oxford and Bath. Literature, performance, design and history are all explored through lectures, field trips and writing prompts. (Typically offered: Summer)

\section*{THTR 4991. Theatre Capstone. 1 Hour.}

A culminating experience in the major, students will develop a portfolio of work encompassing their undergraduate focus in Performance or Design and Technology. The course concludes with a presentation of their body of work to a panel of Theatre Department faculty akin to a professional audition or portfolio review. (Typically offered: Fall)

\section*{THTR 5123. Theatrical Design Rendering Techniques. 3 Hours.}

Investigation of drawing and painting methods and materials useful to theatrical designers. Integration of traditional and digital technology and tools in creating the documents necessary to communication in the theatrical process. (Typically offered: Irregular)
THTR 5133. Design Portfolio Development. 3 Hours.
Development of the skills and techniques used to prepare and present a professional design portfolio in order to successfully interview for a career in the theatre.
Traditional and digital output including portfolio, website and marketing materials are created. Prerequisite: Graduate Standing in Theatre or by instructor permission. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{THTR 5143. History of Decor for the Stage. 3 Hours.}

An overview of architectural decoration and its application to theatrical design from the Predynastic Period (4400-3200 B.C.) through the Art Deco period with references to contemporary decor. Prerequisite: Graduate standing. (Typically offered: Irregular)
THTR 5151. Singing for Musical Theatre. 1 Hour.
Private study of the singing voice focusing on musical theatre vocal technique and repertoire. (Typically offered: Irregular) May be repeated for up to 3 hours of degree credit.

\section*{THTR 5173. Drafting for the Designer. 3 Hours.}

Focuses on industry standard practices of drafting. Students will study and execute design drafting packages for the theatre, including but not limited to Designer Drawings, Painter's Elevations, Props Packages, Lighting Plots and Sections. Prerequisite: Graduate Standing in Theatre or by instructor permission. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{THTR 5183. Scene Design Studio. 3 Hours.}

Individual and advanced projects in designing scenery for various theatrical genres as well as non-theatrical applications with emphasis on the design process involving playscript analysis, text analysis, and research. Collaboration skills and advanced rendering techniques will be explored. Contributes to on-going portfolio development. Prerequisite: THTR 4653 or instructor consent. (Typically offered: Fall) May be repeated for up to 6 hours of degree credit.

\section*{THTR 5193. Scene Technology Studio. 3 Hours.}

Individual and advanced projects in scenic techniques with emphasis on scene painting, drafting, rendering, properties design, or scenic crafts as determined by student need. Contributes to on-going portfolio development. Prerequisite: Graduate standing or instructor consent. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

\section*{THTR 5283. Costume Design Studio. 3 Hours.}

Individual and advanced projects in designing costumes for various theatrical genres with emphasis on the design process involving text interpretation, character analysis, and research. Collaboration skills and advanced rendering techniques will be explored. Contributes to on-going portfolio development. Prerequisite: THTR 3213 or instructor consent. (Typically offered: Fall) May be repeated for up to 9 hours of degree credit.

\section*{THTR 5293. Costume Technology Studio. 3 Hours.}

Individual and advanced projects in costume construction and techniques with emphasis on flat pattern, draping, corsetry, tailoring or costume crafts as determined by student need. Contributes to on-going portfolio development. Prerequisite: Graduate standing or instructor consent. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

\section*{THTR 5383. Lighting Technology Studio. 3 Hours}

Individual and advanced projects in lighting technology with emphasis on programming, equipment, advanced control, lighting software, methods of digital rendering and computer visualization. Contributes to ongoing portfolio development. Prerequisite: Graduate standing or instructor consent. (Typically offered: Spring) May be repeated for up to 9 hours of degree credit.

\section*{THTR 5393. Lighting Design Studio. 3 Hours.}

Individual projects in lighting design with an emphasis on stage lighting as an art form. Investigates the design process involving script interpretation, design aesthetics, research and storytelling. Contributes to ongoing portfolio development. Prerequisite: Graduate standing or instructor consent. (Typically offered: Fall) May be repeated for up to 9 hours of degree credit.

\section*{THTR 5413. African American Theatre History -- 1950 to Present. 3 Hours.} A chronological examination of African-American theatre history from 1950 to the present through the study of African-American plays and political/social conditions. Students will become familiar with the major works of African-American theatre and have a deeper understanding of American History. Graduate degree credit will not be given for both THTR 4463 and THTR 5413. (Typically offered: Irregular)

THTR 542V. Graduate Acting Studio. 1-3 Hour.
Provides actors with intensive opportunities to explore specific aspects of their craft. Sample topics include characterization, Chekhov, Pinter, Brecht, improvisation and mask work. Topics vary each semester. Prerequisite: Graduate standing in Theatre. (Typically offered: Irregular) May be repeated for up to 18 hours of degree credit.

\section*{THTR 5432. Graduate Voice and Speech I. 2 Hours.}

Teaches how to build clear vocal production using proper breath support, grounded in the Alexander technique. Emphasis on the connection between breath and thought, learning to undo inadequate vocal habits, and vocal hygiene. Prerequisite: Graduate standing in Theatre. (Typically offered: Fall) May be repeated for up to 4 hours of degree credit

\section*{THTR 5443. Graduate Acting: Period Styles. 3 Hours.}

Styles of acting in relation to French and English Dramatic Literature (16th-19th Centuries). This course also examines the historical and cultural influences that shaped each genre. A period dance component is included. Prerequisite: Graduate standing in Theatre. (Typically offered: Spring)

THTR 545V. Musical Theatre Performance. 1-3 Hour.
Theory and techniques of performing a singing role for the theatre. Integrates acting and vocal techniques and examines the relationship between score and text. Prerequisite: Graduate standing in Theatre. (Typically offered: Irregular)

THTR 548V. Meisner Technique I. 1-3 Hour.
Acting theory and exercises of Sanford Meisner, including repetition work, connecting with partner, three moment game, activities, and emotional preparation. (Typically offered: Irregular)

THTR 549V. Meisner Technique II. 1-3 Hour.
Continuation of Meisner Technique I. Incorporation of theory and advanced exercises of the Meisner Technique into the playing of text. Prerequisite: THTR 548V. (Typically offered: Irregular)

THTR 5511. Alexander Technique Lessons. 1 Hour.
Students will become aware of habitual patterns of tension and how these patterns interfere with performance, learning, and overall health. The Technique offers practical skills for improving coordination and for re-gaining a sense of ease of movement in all activities. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{THTR 5523. Writing for Television and Screen. 3 Hours.}

Advanced study and practice in writing for the small and big screen, with focus on writing for television. This writing workshop is an investigation into the form, structure, and vocabulary of writing for television, designed to give students tools, strategies, and practice in writing for television. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{THTR 5533. Graduate Playwriting: Special Projects. 3 Hours.}

Advanced study and practice in the area of playwriting. The area of concentration will be determined by the student's specific writing project(s). Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for up to 18 hours of degree credit.

\section*{THTR 5552. Graduate Voice and Speech II. 2 Hours.}

A continuation of Graduate Voice and Speech I, exploring more closely the connection between breath support and volume, pitch, range, resonance and articulation. Prerequisite: THTR 5432. (Typically offered: Spring)

THTR 5562. Graduate Voice and Speech III. 2 Hours.
Continuation of Graduate Voice and Speech II, focusing on the classification of vowels and consonants according to the International Phonetic Alphabet (IPA), Prerequisite: THTR 5552. (Typically offered: Fall)

\section*{THTR 5572. Graduate Voice and Speech IV. 2 Hours.}

Continuation of Graduate Voice and Speech III. Extension of the application of the IPA to the analysis of different accents of individuals for whom English is a second language. Approximately eight dialects of English will be examined. Prerequisite: THTR 5562. (Typically offered: Spring)

THTR 5633. Creating a One-Person Show. 3 Hours.
Actors learn to use compelling personal experiences and interests in the creation of a unique one-person show. Includes exploration in characterization, staging and playwriting. Culminates in the public presentation of a short one-person show. Prerequisite: Graduate standing in Theatre. (Typically offered: Irregular)

\section*{THTR 5643. Devised Theatre. 3 Hours.}

Explores performer-created works developed through group dynamics, with emphasis on innovative source materials and inventive theatrical approaches. (Typically offered: Irregular)

\section*{THTR 5663. Directing Modern Drama. 3 Hours.}

Studio course exploring the challenges of directing post-19th Century dramatic literature. Individual projects in collaboration with actors. Sample dramatic literature includes styles such as Realism, Expressionism, Absurdism, post-Modernism and Epic Theatre. Topics vary each semester. Prerequisite: Graduate standing in Theatre. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit

\section*{THTR 5673. Adapting and Directing Non-Theatrical Texts. 3 Hours.}

Offers directors practice in the adaptation and staging of non-theatrical prose, poetry and current events. Individual projects in collaboration with actors. Prerequisite: Graduate standing in Theatre. (Typically offered: Irregular)

\section*{THTR 5683. Directing Studio. 3 Hours.}

Hands-on exploration into the direction of historical and contemporary texts and styles, including Greek, Roman, Shakespeare, Realism, American and international scripts and the adaptation of non-theatrical material. Topics vary each semester. Includes discussion and investigation of the theatrical arts and collaborative and production processes. Prerequisite: MFA Directing student or instructor consent. (Typically offered: Fall and Spring) May be repeated for up to 6 hours of degree credit.

\section*{THTR 5713. Directing Classics. 3 Hours.}

Explores the challenges of directing classic texts. Individual projects in collaboration with actors on a wide variety of pre-20th Century dramatic literature. Topics vary each semester. Prerequisite: Graduate standing in Theatre. (Typically offered: Irregular) May be repeated for up to 12 hours of degree credit.

\section*{THTR 5723. History of the Theatre I. 3 Hours.}

A survey of dramatic literature, theatre practices and cultural contexts for dramatic presentation from classical Greece through the 19th century. (Typically offered: Fall)

\section*{THTR 5733. History of the Theatre II. 3 Hours.}

A survey of dramatic literature from the rise of realism to the present, designed to examine historical context, theatrical convention, modes of storytelling and questions of diversity and inclusion in the theatrical cannon. (Typically offered: Spring)

\section*{THTR 5773. Script Analysis. 3 Hours.}

Introduces the fundamentals of dramatic structure, in plays from the classical era to the present, with emphasis on how a dramatic work conveys cultural meaning and how it informs the production approaches of actors, directors, and designers. (Typically offered: Irregular)

\section*{THTR 5783. Viewpoints. 3 Hours.}

Exploration and application of the Viewpoints movement technique. Prerequisite: Graduate standing in Theatre. (Typically offered: Irregular)

\section*{THTR 5833. Scene Painting. 3 Hours.}

A studio class in painting techniques for the theatre. Exercises in color, textures, styles, and execution. Graduate degree credit will not be given for both THTR 4833 and THTR 5833. (Typically offered: Spring Odd Years) May be repeated for up to 6 hours of degree credit.

\section*{THTR 590V. Independent Study. 1-18 Hour.}

Individually designed and conducted programs of reading and reporting under guidance of a faculty member. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.

THTR 591V. Special Topics. 1-3 Hour.
Classes not listed in the regular curriculum, offered on demand based on student needs and changes within the profession. Prerequisite: Graduate standing in Theatre or Instructor consent required. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{THTR 592V. Internship. 1-6 Hour.}

Supervised practice in the various arts and crafts of the theatre (e.g. full design responsibility for a production; box office management; actor apprenticeship in a professional company). (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{THTR 5953. Theatre in London. 3 Hours.}

Theatre in London Study Abroad immerses scholars in the world of theatre, culture and history in Britain. Students spend four weeks in London with excursions to Stratford-upon-Avon, Oxford and Bath. Literature, performance, design and history are all explored through lectures, field trips and writing prompts. Open to all majors. Graduate degree credit will not be given for both THTR 4953 and THTR 5953. (Typically offered: Summer)

\section*{THTR 600V. Master's Thesis. 1-6 Hour.}

Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall and Spring) May be repeated for degree credit.

THTR 6111. Academic Research I. 1 Hour.
Introduces students to the practice and discipline of academic writing and research. Students are required to write papers throughout the course, in order to become familiar with the formatting criteria of academic writing. Prerequisite: Admission to the MFA Program. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6121. Academic Research II. 1 Hour.}

The class is intended to finalize to the submission of the thesis proposal at the end of the semester for faculty approval. Lectures and class discussions are designed to further expand students' skills in research, academic writing and formatting requirements. Each student will be assigned a thesis advisor. Prerequisite: THTR 6111. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6132. Introduction to the Creative Process. 2 Hours.}

Introduces the creative process as a form of practice through exploring various strategies for generating performative material, including the initiation of an impulse, an action or a concept. Involves studio work, exercises, automatic writing, design, and numerous modes of improvisation. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6142. Extension and Analysis of the Creative Process. 2 Hours.}

Introduction to form and genre via Commedia dell'Arte where students will improvise and construct lazzi within the constraints of a specific form. The fundamental role of musicality and rhythm in dramaturgy will be underlined as students move towards more complex compositional forms. Prerequisite: THTR 6132. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6323. Stylized Theatre Practices. 3 Hours.}

Constellated around the notion of Composed Theatre and draws on the psychophysical vocabulary and various dramaturgical approaches. Focuses on generating textual material and composition, with a view to elaborating personal projects. Provides practical and conceptual tools that enable solutions to be found to acting and dramaturgical challenges of creating new work. Prerequisite: THTR 6132. (Typically offered: Fall, Spring and Summer)

THTR 6333. Devised Theatre Practices. 3 Hours.
Works towards an understanding of what "composed theatre" means focusing on the use of musical concepts and strategies to arrive at a fully formed performance. Focus on the creation of student-driven devised performance projects. Each student will be responsible for devising a short piece to professional standards for public performance. (Typically offered: Fall, Spring and Summer)

THTR 6346. Devised and Physical Theatre Internship. 6 Hours.
Occurs off-site with professional companies. Devised and physical theatre techniques are investigated that supplement or complement the previous semester's study. Requires a journal, a final paper or a final project of the learned technique studied. Prerequisite: Must complete at least 10 hours of credit in 5000 level THTR coursework. (Typically offered: Summer) May be repeated for up to 12 hours of degree credit.

\section*{THTR 6351. Improvisation and Text in Commedia dell'Arte. 1 Hour.}

Delves into the aesthetic, literary, and technical structures in which are rooted the dramaturgical components of Commedia dell'Arte. Focuses on the processes of improvisation, and makes use of sources such as scenarios, acting treatise and repertoires, lazzi, and iconographic documents. Prerequisite: THTR 6741. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6414. Basic Skills of the Physical Actor. 4 Hours.}

Designed to enable actors to develop the physical, vocal, musical and rhythmic skills necessary for their craft, including movements, contemporary dance, voice work and music. Introduces the notion of collaborative theatre and the principles of a trans-disciplinary approach to training. Students will create and perform in Italian. Prerequisite: Admission to the MFA program. (Typically offered: Fall, Spring and Summer)

THTR 6423. Extended Skills of the Physical Actor. 3 Hours.
Presents students with demanding work in movement and vocal skills that move towards character-building, autonomous training methods and a deeper understanding of how musicality and rhythm are a key to both individual and ensemble performance. Fundamental design principles are introduced underscoring improvisation and future composition. Prerequisite: THTR 6414. (Typically offered: Fall, Spring and Summer)

THTR 6432. Advanced Skills of the Physical Actor. 2 Hours.
Presents pathways towards generating work both as an ensemble and as soloists. More complex expressive skills are investigated: text work, dance choreography, movement analysis and impulse, musical "scoring" and dynamo-rhythms in performance. Students encounter advanced design principles that will inform devising. Prerequisite: THTR 6423. (Typically offered: Fall, Spring and Summer)

THTR 6441. Beyond Techniques. 1 Hour.
Tracks students in their final semester focusing on maintaining core fitness and readiness on a physical and vocal level. Students develop further skills in devising, writing and composition in readiness for their thesis projects. Prerequisite: THTR 6432. (Typically offered: Fall, Spring and Summer)

THTR 6471. The Body as Sign. 1 Hour.
Explores the connections between "meaning" and "illusion" in examples drawn from theatre, dance and other art forms. Emphasis on the connections displayed by the actor's body. Classes will investigate plays and works of art by focusing on the role the body assumes as a medium of meanings through illusion. Prerequisite: THTR 6731. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6513. Ensemble Creation. 3 Hours.}

Reinforces the need to maintain a cohesive ensemble where a daily "routine" is part of a company ethic and practice. Students re-visit their ensemble and individual or small-group works devised during the previous courses. They further refine and define these works under faculty mentoring. Prerequisite: THTR 6333. (Typically offered: Fall, Spring and Summer)

THTR 6611. Professional Aspects of Theatre. 1 Hour.
Introduction to industry through research of professional companies producing work that contains devised and physically - based material. Also covers elements of grant writing, producing on a budget, publicity and promotion. Prerequisite: THTR 6346. (Typically offered: Fall, Spring and Summer)

THTR 6711. Theory, History, and Aesthetics of Physical Theatre I. 1 Hour. Investigates key physical theatre practitioners within both the realm of classical and modern theories and the conceptual sphere emerging from significant contemporary theatre. Intended to make students aware of the political value of their artistic vision as an aesthetic expression of contemporary society. Prerequisite: Admission to the MFA Program. (Typically offered: Fall, Spring and Summer)
THTR 6721. Theory, History, and Aesthetics of Physical Theatre II. 1 Hour.
Continuation of Aesthetics and History of Physical Theatre I. Focuses on significant contemporary physical theatre practitioners. Investigates productions, techniques, and poetics of current physical theatre companies presently operating. Prerequisite: THTR 6711. (Typically offered: Fall, Spring and Summer)

THTR 6731. Theory, History, and Aesthetics of Physical Theatre III. 1 Hour. Provides insights into popular theatre practices and practitioners in the broader context of physical theatre. Focuses on the aesthetic, social, political, and economic concerns related to diverse significant popular theatre practices, which were, and still are, alternative to mainstream forms of entertainment: buffoon, clown, and cabaret, among others. Prerequisite: THTR 6721. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6741. Non-Western Theatre. 1 Hour.}

Introduces students to non-Western theatrical forms, concentrating on the traditional, primarily the theatre of three Asian countries: Japan, China, and India. Explores production methods, performance styles, audiences and social milieus, and will challenge the perception of theatre forms usually not included in the Western canon. Prerequisite: THTR 6111. (Typically offered: Fall, Spring and Summer)

THTR 6811. Technical Theatre for the Physical Performer I. 1 Hour.
Introductory, broad based study of technical theatre focusing on contemporary practices in stage lighting, projection, sound, costume and automation. Emphasis will be placed on the blending of old and emerging technology for use by the physical performer. Corequisite: Lab component. Prerequisite: Admission to the M.F.A. Program. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6821. Technical Theatre for the Physical Performer II. 1 Hour.}

Introductory, broad based study of technical theatre focusing on equipment used in stage lighting, projection, sound, costume and automation. Emphasis will be placed on the use of standard theatrical equipment for the theatre as well as software typically used in the creation and presentation of live theatre. Corequisite: Lab component. Prerequisite: THTR 6811. (Typically offered: Fall, Spring and Summer)

\section*{THTR 6913. Special Topics in Devised and Physical Theatre. 3 Hours.}

Topics in the areas of theatre that result in the creation of a devised work in dramatic literature, performance, or design. (Typically offered: Fall, Spring and Summer)

\section*{University (UNIV) Courses}

UNIV 1001. University Perspectives. 1 Hour.
A first-year "student success" course, this class will be taught with both an online component and classroom activities. The course is designed to teach/encourage critical thinking and civic engagement. Additionally, this class will explore strategies for dealing with stress and time management to promote solutions for maintaining a physically and mentally healthy body, and to develop communication and leadership skills to benefit students in their education and their careers. Corequisite: Drill component. (Typically offered: Fall and Spring)

\section*{UNIV 1001H. Honors University Perspectives. 1 Hour.}

A first-year "student success" course, this class will be taught with both an online component and classroom activities. The course is designed to teach/encourage critical thinking and civic engagement. Additionally, this class will explore strategies for dealing with stress and time management to promote solutions for maintaining a physically and mentally healthy body, and to develop communication and leadership skills to benefit students in their education and their careers. (Typically offered: Fall, Spring and Summer)
This course is equivalent to UNIV 1001.
UNIV 1011. Writing with Integrity for the Academic World. 1 Hour.
An exploration of the principles and skills of writing with academic integrity in a collegiate setting. Aimed at preparing students to recognize the intellectual property of others and distinguish it from their own in the research and writing process with attention to the reading, research and writing processes, ethical decision making, and the nature and significance of intellectual property. (Typically offered: Fall and Spring)

\section*{UNIV 1031. Math Study Skills. 1 Hour.}

Eight-week course designed for students experiencing difficulty in studying and learning the cognitive and behavioral dimensions of learning mathematics and includes topics such as memory and mathematics, translating mathematics, and math anxiety. Also recommended for math education majors. (Typically offered: Fall, Spring and Summer)

UNIV 1042. College Learning I. 2 Hours.
The focus of this course is on developing and applying college-level thinking and learning skills specific to the University and on developing a student support base through a class learning community. (Typically offered: Fall and Spring)

UNIV 1051. College Learning II. 1 Hour.
College Learning II complements College Learning I by focusing on additional topics leading to student success, such as setting goals and implementing action plans, assessing interests and skills, investigating career possibilities, and developing financial literacy. (Typically offered: Fall, Spring and Summer)

\section*{UNIV 1101. Independent Study. 1 Hour.}

Allows students to explore selected topics on an individual basis. (Typically offered: Fall, Spring and Summer) May be repeated for up to 2 hours of degree credit.

UNIV 1211. Seminar. 1 Hour.
360 Seminars are courses taught in a small group setting by faculty and staff from throughout departments and colleges on campus that will help students to explore core class content deep level, hone the skills necessary to be successful in a wide range of courses, and recognize interdisciplinary themes in their core courses. In a low-stress/ high-engagement environment, instructors will work with students to address challenges and expand upon areas of interest found in introductory general education courses. Topics vary by semester. Prerequisite: Instructor permission. (Typically offered: Fall and Spring)

UNIV 1401. Classroom to Career. 1 Hour.
This course gives students the tools to prepare for a career or graduate school upon college graduation. Students will graduate from the nationally recognized Career Track Razorbacks program offered by the Career Development Center in an 8-week session as opposed to the traditional non-course option. Coursework will consist of the completion of seven modules including Self-Awareness, Career Exploration, Work and Leadership Experience, Job Search Strategies, Resume/Cover Letter Writing, Interview Skills, and Professional Networking. (Typically offered: Fall and Spring)

\section*{UNIV 2001. Leadership by Design. 1 Hour.}

Leadership by Design is taught by a multi-disciplinary team across campus that will help students examine their campus community and how to intentionally take a leadership role in instigating change. Students will explore concepts of change management, peer leadership, and campus programs and policies and apply these concepts to a team-based project. Students' selected small group projects will allow students to examine a need for new policies and programs on campus or proposing change to existing policies and programs on campus through well-researched project proposals. (Typically offered: Fall and Spring)

UNIV 2101. Peer Mentoring Experience. 1 Hour.
The UNIV 2101 Peer Mentoring Experience is an independent study course open to students selected as a mentor through the the required selection process. Student-mentors enrolled in this course will serve for the semester as a mentor for one or more UNIV 1001 University Perspectives course(s); meet with University Perspectives students who may need additional guidance; engage in required leadership development and training opportunities; read related research on leadership, development, peer mentoring, and first-year experience programs; and provide feedback on their experience as a mentor. Prerequisite: UNIV 1001 and instructor consent. (Typically offered: Fall, Spring and Summer) May be repeated for up to 2 hours of degree credit.

UNIV 2201. Ethical Decision Making. 1 Hour.
An introductory course addressing issues that college students face regarding ethical decision-making. This course will introduce students to the basic terms and concepts related to ethics and decision making, as well as educate students about the many elements that form a personal code of ethics. (Typically offered: Fall and Spring)

UNIV 2301. Conflict Resolution. 1 Hour.
Introductory course aimed at addressing issues that college students face regarding emotional intelligence, anger management, and resolving conflict. This course will introduce students to the basic terms and concepts related to emotional intelligence, anger management, and resolving conflict, as well as educate students about the techniques to identify and manage their emotions and interpersonal conflicts. This course will challenge students to think deeply about emotional intelligence, anger management, and resolving conflict. (Typically offered: Fall and Spring)

\section*{UNIV 3301. University Internship. 1 Hour.}

Provides career development opportunities for students in support of various university programs or departments. Students required to complete 40 hours of supervised internship duties to program or department along with academic requirements. (Typically offered: Fall and Spring) May be repeated for up to 3 hours of degree credit.

UNIV 3401. Career Planning and Professional Development for Juniors and Seniors. 1 Hour.
This course examines the career planning process of self-assessment, exploring career opportunities in the world of work and learning assertive job search strategies that result in the development of a "Life after College" career plan. (Typically offered: Irregular)

\section*{UNIV 4001. Research Experience for Undergraduates. 1 Hour.}

The course is reserved for undergraduate students who are participating in summer research programs. Prerequisite: Departmental/instructor consent. (Typically offered: Summer) May be repeated for up to 3 hours of degree credit.

\section*{World Languages, Literatures and Cultures (WLLC)}

\section*{Courses}

WLLC 3053. The Colonial French in the Mississippi Valley. 3 Hours.
This course focuses on the French Colonial Mississippi Valley from 1698 until 1763. Activities for both French and non-French speaking students provide a rich environment to discuss encounters, subsistence strategies, and warfare faced by native peoples, missionaries, explorers, and colonists alike. Students will examine primary handwritten, transcribed, or translated sources. (Typically offered: Spring)

\section*{WLLC 3063. Intro to Digital Humanities. 3 Hours.}

Explores the myriad intellectual, technological, and aesthetic phenomena emerging from the intersection of the humanities and the digital. Students will critically reflect on the ideas of the innovators who paved the way to the digital age, review humanist responses to the digital age, engage with the field of digital humanities proper, addressing the methodologies, technologies, and histories the field entails, and apply theoretical insights to their practical engagement with a selection of digital tools and projects. (Typically offered: Fall)

WLLC 3073. Digital Humanities Special Topics. 3 Hours.
Topics in digital humanities which are not usually presented in depth in regular courses. Prerequisite: WLLC 3063. (Typically offered: Spring) May be repeated for up to 6 hours of degree credit.

WLLC 3173. Introduction to Linguistics. 3 Hours.
Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, the history of linguistic scholarship. Prerequisite: Junior standing. (Typically offered: Irregular)
This course is cross-listed with COMM 3173, ENGL 3173.

\section*{WLLC 3923H. Honors Colloquium. 3 Hours.}

Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in foreign languages). (Typically offered: Irregular) May be repeated for degree credit.

\section*{WLLC 398V. Special Studies. 1-6 Hour.}

A course (not independent study) which covers a topic or author not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for degree credit.

WLLC 398VH. Honors Special Studies. 1-6 Hour.
A course (not independent study) which covers a topic or author not usually presented in depth in regular courses. (Typically offered: Irregular) May be repeated for degree credit.
This course is equivalent to WLLC 398 V .
WLLC 4013. Ethno-Historic Approach to Native American Languages. 3 Hours. This course pursues an ethno-historic examination of Native American languages among Native nations primarily from the southeast and midwest including the Quapaws, the Cherokee, the Caddos, and the Illinois, though other nations are certainly discussed. This course examines the Native American group's history, European encounters, spoken and written language, nonverbal language, visual and ritual communication, devastation to language and culture through boarding schools, as well as current language revitalization. (Typically offered: Fall)

WLLC 4023. Languages, Cultures, and Teaching with Technology. 3 Hours. This course provides senior level undergraduate and graduate students with innovative ways to teach and communicate through the use of modern technologies as applied to second languages. Topics of discussion include instructional systems design, Web 2.0 technologies, presentation technologies, online facilitation, and pedagogical strategies for using technological tools in language and culture courses. Prerequisite: Senior standing. (Typically offered: Irregular)

WLLC 4033. Languages, Cultures and Teaching with Video. 3 Hours.
This course provides senior level undergraduates and graduate students with the knowledge and skills needed to teach and communicate through the use of video as applied to second languages. Topics of discussion include instructional systems design, development of strong pedagogical strategies for teaching with film, analysis of research focused on subtitling, learning strategies, mental effort, and language and culture development, as well as some videotaping and editing. Prerequisite: Senior standing. (Typically offered: Irregular)

\section*{WLLC 4043. The Early French in North America. 3 Hours.}

This course focuses on French exploration in North America from 1508 until 1698. Activities for both French and non-French speaking students provide a rich environment to discuss first encounters, cultural differences, and colonization struggles throughout New France by indigenous peoples, missionaries, military and colonists alike. This course strongly familiarizes students with historic events leading up to beginnings of Colonial French Arkansas and Lower Mississippi Valley. Prerequisite: FREN 2013 or equivalent. (Typically offered: Fall)
WLLC 423V. Culture and Civilization: Field Studies. 1-18 Hour.
May be taken by students participating in overseas work study programs approved by the department. (Typically offered: Irregular) May be repeated for degree credit.

WLLC 5023. Languages, Cultures, and Teaching with Technology. 3 Hours. This course provides graduate students with innovative ways to teach and communicate through the use of modern technologies as applied to second languages. Topics of discussion include instructional systems design, Web 2.0 technologies, presentation technologies, online facilitation, and pedagogical strategies for using technological tools in language and culture courses. Prerequisite: Graduate standing. (Typically offered: Fall)
WLLC 5033. Languages, Cultures and Teaching with Video. 3 Hours. This course provides graduate students with the knowledge and skills needed to teach and communicate through the use of video as applied to second languages. Topics of discussion include instructional systems design, development of strong pedagogical strategies for teaching with film, analysis of research focused on subtitling, learning strategies, mental effort, and language and culture development, as well as some videotaping and editing. (Typically offered: Spring)
WLLC 5063. Teaching Foreign Languages on the College Level. 3 Hours. Focus on basic methodological concepts and their practical application to college foreign language instruction. (Typically offered: Irregular)

\section*{WLLC 5463. Descriptive Linguistics. 3 Hours.}

A scientific study of language with primary emphasis on modern linguistic theory and analysis. Topics include phonology, morphology, syntax, semantics, language acquisition, and historical development of world languages. (Typically offered: Fall)
WLLC 5723. Language Learning Research and Theory. 3 Hours. Introduces research and theory in the field of second language learning and acquisition. Develops the ability to critically read and assess published research, while connecting with current theories of how languages are learned. Also introduces the process of carrying out research in language learning. A research project proposal is required. (Typically offered: Irregular)

\section*{WLLC 575V. Special Investigations. 1-6 Hour.}

Special investigations in world languages, literatures and cultures. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{WLLC 6553. Applied Linguistics Seminar. 3 Hours.}

Research and discussion in areas of applied linguistics ranging from discourse analysis, literacy, language pedagogy, and language planning to translation theory. Subject matter changes depending on student interest and faculty expertise. Prerequisite: WLLC 5463 or equivalent introduction to linguistics. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.

\section*{World Literature (WLIT) Courses}

WLIT 1113. World Literature: Beginnings to 1650 CE (ACTS Equivalency = ENGL 2113). 3 Hours.
Study of literature from cultural traditions such as Mesopotamia, Egypt, Greece, Rome, China, India, the Middle East, Japan, Europe, Africa, and the Americas, so that students can appreciate and analyze texts from diverse genres, periods, and cultural traditions. Prerequisite: ENGL 1013 and ENGL 1023; or equivalent. (Typically offered: Fall, Spring and Summer)

\section*{WLIT 1113H. Honors World Literature: Literature I Beginnings to 1650 CE. 3} Hours.
Study of literature from cultural traditions such as Mesopotamia, Egypt, Greece, Rome, China, India, the Middle East, Japan, Europe, Africa, and the Americas, so that students can appreciate and analyze texts from diverse genres, periods, and cultural traditions. Prerequisite: Honors standing or English ACT score of 28 or above. (Typically offered: Fall, Spring and Summer)
This course is equivalent to WLIT 1113.

WLIT 1123. World Literature: 1650CE to Present (ACTS Equivalency = ENGL 2123). 3 Hours.

Study of literature from regions such as East and Central Asia, Europe, the Americas, Africa, and others, to provide students with analytical tools and background information to appreciate literary works from a range of traditions. Prerequisite: ENGL 1013 and ENGL 1023; or equivalent. (Typically offered: Fall, Spring and Summer)
WLIT 1123H. Honors World Literature: 1650CE to Present. 3 Hours. Study of literature from regions such as East and Central Asia, Europe, the Americas, Africa, and others, to provide students with analytical tools and background information to appreciate literary works from a range of traditions. prerequisite: (ENGL 1013 and ENGL 1023) or equivalent; and Honors standing. (Typically offered: Fall, Spring and Summer)
This course is equivalent to WLIT 1123.
WLIT 3523. The Quran as Literature. 3 Hours.
The Quran as literary text, its style and form, historical context, translation issues, communities of interpretation, and comparative perspectives. Course's integrated approach includes translations of literature originally in Arabic. All readings in English; students with reading abilities in Arabic encouraged to read original text. (Typically offered: Irregular)

\section*{WLIT 3623. The Bible as Literature. 3 Hours.}

The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Typically offered: Irregular) This course is cross-listed with ENGL 3623.

\section*{WLIT 3713. Literature of Spain. 3 Hours.}

Examines the multiple cultural traditions of Spain between 711 and 1615 C.E. Course's integrated approach includes translation of literature originally in Arabic (50\%+ of course content), Hebrew, Spanish, and French. All readings in English; students with reading abilities in original languages encouraged to read original text. (Typically offered: Irregular)

\section*{WLIT 3983. Special Studies. 3 Hours.}

Covers a topic not usually presented in depth in regular courses. Not an independent study. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{WLIT 4113. Special Themes in Russian. 3 Hours.}

Covers topics not normally dealt with in period courses. Sample topics include gender and sexuality, war and memory, Holocaust, art and protest, modernism/ post-modernism, Jewish writers, and cinema. Topics announced one semester in advance. This course is taught in English. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with RUSS 4113.
WLIT 4133. Survey of Russian Literature Since the 1917 Revolution. 3 Hours. The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English with readings in English. (Typically offered: Irregular)
This course is cross-listed with RUSS 4133.
WLIT 4443. Queer Theor(ies). 3 Hours.
Introduction to the complex history and evolution of Queer Theory into Queer Theor(ies) from Foucault to the Present. (Typically offered: Irregular)
WLIT 4923. Modern World Drama. 3 Hours.
Drama from Ibsen to the 1930s. (Typically offered: Irregular)
WLIT 4993. African Literature. 3 Hours.
A study of modern African fiction, drama, poetry, and film from various parts of Africa in their cultural context. Works are in English or English translation. (Typically offered: Irregular)

WLIT 5003. Internship in Comparative Literature and Cultural Studies. 3 Hours. Internship in a career related venue. Program consent required. Application form detailing internship educational goals, setting, supervision, and evaluation is available in the program page. Prerequisite: Program Director Consent. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{WLIT 5113. Special Themes in Russian. 3 Hours.}

Covers topics not normally dealt with in period courses. Sample topics include gender and sexuality, war and memory, Holocaust, art and protest, modernism/ post-modernism, Jewish writers, and cinema. Topics announced one semester in advance. This course is taught in English. (Typically offered: Irregular) May be repeated for up to 9 hours of degree credit.
This course is cross-listed with RUSS 5113.
WLIT 5123. Survey of Russian Literature from Its Beginning to the 1917 Revolution. 3 Hours.
The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English. Graduate degree credit will not be given for both WLIT 4123 and WLIT 5123. (Typically offered: Irregular)
WLIT 5133. Survey of Russian Literature Since the 1917 Revolution. 3 Hours. The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English with readings in English. Graduate degree credit will not be given for both WLIT 4133 and WLIT 5133. (Typically offered: Irregular)
This course is cross-listed with RUSS 5133.
WLIT 5193. Introduction to Comparative Literature. 3 Hours.
Literary theory, genres, movements, and influences. (Typically offered: Irregular)
WLIT 5443. Queer Theor(ies). 3 Hours.
Introduction to the complex history and evolution of Queer Theory into Queer Theor(ies) from Foucault to the Present. (Typically offered: Irregular)
This course is cross-listed with GNST 5443.
WLIT 5523. The Quran as Literature. 3 Hours.
The Quran as literary text: its style and form, historical context, translation, issues, communities of interpretation, and comparative perspectives. Course's integrated approach includes translations of literature originally in Arabic. All readings in English; students with reading abilities in Arabic encouraged to read original text. (Typically offered: Irregular)

\section*{WLIT 5623. The Bible as Literature. 3 Hours.}

The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Typically offered: Irregular) This course is cross-listed with ENGL 5623.

WLIT 575V. Special Investigations on World Literatures and Cultures. 1-6 Hour. Independent study of a special topic in world literatures and cultures. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{WLIT 5993. African Literature. 3 Hours.}

A study of modern African fiction, drama, poetry, and film from various parts of Africa in their cultural context. Works are in English or English translation. Graduate credit will not be given for both WLIT 4993 and WLIT 5993. (Typically offered: Irregular)
WLIT 600V. Master's Thesis. 1-6 Hour.
Master's Thesis. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{WLIT 603V. Special Studies in Comparative Literature. 1-6 Hour.}

Special studies in comparative literature. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

WLIT 6713. Literature of Spain, 711-1615 C.E.. 3 Hours.
Examines the multiple cultural traditions of Spain between 711-1615 C.E. and train to produce scholarship pertinent to the field. Integrated approach includes English translations of literature originally in Arabic (50\%+ of content), Hebrew, Spanish, French. Students with reading abilities in original languages encouraged to read original text. (Typically offered: Irregular)

\section*{WLIT 6803. Postcolonial Theory and Subaltern Studies. 3 Hours.}

Seminar examining the geopolitical (imperial, colonial and national) implications of knowledge and culture. Selected readings of early postcolonial texts by Cesaire, Fanon, and Fernandez Retamar, as well as more recent texts by Said, Spivak, Bhabha, Mignolo, Beverly and Chakrabarty among others. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

\section*{WLIT 700V. Doctoral Dissertation. 1-18 Hour.}

Doctoral Dissertation. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

\section*{Glossary}

Academic Dismissal. An academic status (http:// catalog.uark.edu/undergraduatecatalog/academicregulations/ academicprobationsuspensionanddismissal/) resulting from unsatisfactory grades in which students are not permitted to enroll at the university until approved through an appeal process.

Academic Probation. An academic status (p. 63) resulting from unsatisfactory grades.

Academic Suspension. An academic status (p. 63) for unsatisfactory grades in which students are not permitted to register for courses for a specified time period.

Act 1052/467. Section 21 of Arkansas Act 467 of 1989 specifies that all first-time entering freshmen who are enrolled in a bachelor's degree program will be placed in either college-level credit courses in English and mathematics or developmental courses in English composition, reading, and mathematics on the basis of their scores on specified tests. Find out more in the Registration (p.49) section of the catalog.

Activity Course. Course devoted to participation in, knowledge of, or performance of some form of physical activity.

\section*{Add. See Drop/Add below.}

Advance Registration. A period of time scheduled during a regular (fall or spring) semester that allows currently enrolled students to register for the next regular semester. In addition, advance registration for the summer sessions is scheduled during the spring semester.

Applied Instruction. A course that integrates both the teaching and hands-on application of knowledge or information; attends to the practical and utilitarian function of the subject (distinguished from theoretical). Examples may include: livestock judging team, music and art courses, cooperative education, and experiential learning.

Apprenticeship/Externship. Experiential learning opportunity to give students practical exposure and training in a career field. This is generally off-campus, supervised, and designed to prepare students for the transition from school to career.

Area Studies. Interdisciplinary study of geographical or cultural areas. Topics include the history, geography, politics, culture, language, and literature of the area. Generally, an area study is a minor or a second
major. Examples of area studies include African and African American studies, Latin American and Latino studies, and Middle East studies.

Audit. To take a course without credit.
Adviser. A faculty or staff member assigned to a student to advise that student on academic matters that include degree requirements and selection of courses.

Certification/Licensure Requirements. The set of course, hour, and other academic requirements that must be completed to receive certification/licensure such as certification to teach in the public schools.

Class Schedule. List of courses and sections for a specific semester, including names of instructors; day, hour, and place of class meetings; and detailed registration procedures. The class schedule is available online.

Clinical Rotation/Instruction. Course that takes place in a clinical setting, including practice labs, hospitals, and other agencies; students apply methods and principles of a clinical discipline.

College or School. One of ten major divisions within the university that offers specialized curricula.

Combined Major. \({ }^{1}\) A combination of subsets of two primary discipline specific requirements (each of which is typically 15 to 24 hours and less than the number required for a major) which together constitute the major in a program of study leading to one bachelor's degree with a combined major in two disciplines. For example, a Bachelor of Arts degree with a combined major in English and journalism.

Concentration. A subset of requirements within the discipline-specific (field of study or major) requirements in a program of study leading to a graduate or bachelor's degree. Examples are the Doctor of Philosophy degree with physics as the field of study and a concentration in neuroscience or a Bachelor of Music degree with a major in music and a concentration in jazz studies. Concentrations will print on the transcript.

Consent. A prerequisite that requires the student to obtain approval from the instructor or the department before he or she will be allowed to register for the course.

Core. Core is a set of required coursework specified for students at the college/school, department, or program/area level. Core is what is required for all students at that level or in that program. Hours will vary depending upon the major. Core and major requirements are usually stated in terms of specific courses or lists of courses from which any course chosen will meet the requirement. The "list" may actually be a defined set such as lower-level courses or upper-level courses; courses in the department, in the program, or in the college; or courses identified by one or more course, program, or department codes.

Elective courses may involve a greater or lesser degree of student choice. A general elective course could be one that is needed to complete the number of hours required for the degree when no other requirements remain to be met. A free elective course may be one that is not needed to complete either course requirements or hour requirements.

Corequisite. A course that must be taken at the same time as the course described.

Correspondence. See Self-Paced (Correspondence) below.
Course. A unit of academic instruction.

Course Deficiencies. Lacking required units of study in high school. Find out more in the Placement and Proficiency portion (p. 39) of the Enrollment Services section of the catalog.

Course Load. The number of semester credit hours a student may schedule in a given term.

Credit Hour. See Academic Policy 1200.40 (https://provost.uark.edu/ policies/120040.php) for university's credit hour definition.

Cumulative Grade-Point Average. An average computed by dividing the total number of grade points earned by the total number of credit hours attempted in all courses for which grades (rather than marks) are given.

Curriculum. A program of courses comprising the formal requirements for a degree in a particular field of study.

Degree Program. The program of study defined by sets of academic requirements that lead to a degree that the university is authorized to offer. Undergraduate degree requirements are typically stated in terms of numbers of credit hours and specific courses at university, college/school, and discipline levels. Graduate degree requirements are typically stated in terms of numbers of credit hours and specific courses at discipline levels. Examples are a Bachelor of Science degree program, which typically has a minimum of 120 hours; a Master of Arts degree program, which typically has a minimum of 30 hours; and a Doctor of Philosophy degree program, which has a minimum of 72 graduate semester credit hours beyond the bachelor's degree and 42 graduate-only semester hours beyond the master's degree.

Department. Division of faculty or instruction within a college, such as Department of Accounting within the Sam M. Walton College of Business.

\section*{Dependent Major. See Second Major below.}

Dissertation/Thesis Research. Research conducted and submitted in support of candidature for a degree or professional qualification; a formal treatise presenting the results of study submitted in partial fulfillment of the requirements of an advanced degree; process requires intensive interaction between student and professor.

Double Degree Program. A program of study that includes one set of university requirements and two sets of college or school and primary discipline-specific requirements and leads to two different bachelor's degrees with two different majors. Such a program could, for example, lead to a Bachelor of Science degree with a major in chemistry and a Bachelor of Science in Chemical Engineering degree. Such programs are comparatively rare, and hours required to complete them vary, depending upon overlap in requirements.

Double Major. \({ }^{1}\) The two complete sets of primary discipline-specific requirements (typically consisting of a minimum of 30 hours each) constituting the two majors within a program of study leading to one bachelor's degree with two complete majors. For example, a Bachelor of Arts degree with a double major in Spanish and French.

Drill. Supplemental instruction or practice using repetition or discussion.
Drop/Add. Dropping or adding of select courses while still remaining enrolled in the university. This can only be done during specified times as published in the academic calendar (http://registrar.uark.edu/academic-dates/academic-semester-calendar/). See also Withdrawal below.

Eight-Semester Degree Completion Program. Most majors offered by the University of Arkansas can be completed in eight semesters, and
the university provides plans that show students which classes to take each semester in order to finish in eight semesters. A few undergraduate majors either require a summer internship or fieldwork or are five-year professional programs, and may therefore not qualify for the eightsemester degree completion program.

Elective. Elective courses may involve a greater or lesser degree of student choice. A general elective course could be one that is needed to complete the number of hours required for the degree when no other requirements remain to be met. A free elective course may be one that is not needed to complete either course requirements or hour requirements.

Equivalent. A course allowed in place of a similar course in the same academic discipline. May require approval by an academic dean.

Externship. See Apprenticeship/Externship above.
Fees. Charges, additional to tuition, that cover specific university services, programs, facilities, activities and/or events. Find out more in the undergraduate Fee and Cost Estimates (p. 51) section or the graduate Fee and Cost Estimates (http://catalog.uark.edu/graduatecatalog/ feeandgeneralinformation/) section.

Field of Study. The primary discipline-specific (or multidisciplinary or interdisciplinary) set of requirements in a graduate program of study. The field of study typically consists of a minimum of 30 hours at the master's degree level, of 30 hours beyond the master's degree at the educational specialist level, and of 96 hours for the doctor of education degree. Field of study hour requirements vary more widely for the doctor of philosophy degree, but 60 hours is typical. For example, a Master of Arts degree in history, a Master of Arts in Teaching degree in teacher education, an Education Specialist degree in curriculum and instruction, a Doctor of Education degree in higher education, a Doctor of Philosophy degree in business administration.

Field Studies. Hands-on study undertaken outside the laboratory or place of learning, usually in a natural environment or among the general public. Examples may include archeological and geological field studies.

Focused Studies. A set of courses that a student may elect to take as part of the major requirements that provides focus in a particular area related to the major. Completing a focused study is not required for the major, but serves as a guide for students who want to further specialize their studies. Focused studies do not need ADHE approval and do not appear on the transcript.

Grade Points. Points per semester hour assigned to a grade (not a mark), indicating numerical value of the grade. The grade-point average indicates overall performance and is computed by dividing the total number of grade points earned by the number of semester hours attempted.

Grade Sanction(s). A penalty for academic dishonesty. Grade sanctions may consist of either a grade of zero or a failing grade on part or all of a submitted assignment or examination or the lowering of a course grade, or a failing grade of XF to denote failure by academic dishonesty.

Hazing. Any activity that is required of an individual that may cause mental or physical stress and/or embarrassment when in the process of joining or belonging to any organization.

Independent Study. Project collaboratively designed by the instructor and student to pursue an area of study not covered by the established
curriculum; typically completed without class attendance but through formal supervision by an instructor.

Internship. A formal program that provides practical experience in an occupation or profession; applied, monitored, and supervised, field-based learning experience for which the student may or may not be paid; may include field work/experience, supervised courses, student teaching, and cooperative education; provides opportunities for students to gain experience in a career field.

Intersession. A two-week mini-session that is held at the beginning of the regular fall, spring, and summer terms. Coursework during an intersession is very concentrated and intensive. Intersession classes are not available to new freshmen.

Laboratory. Course meeting in a defined physical setting for the handson application of methods and principles of a discipline; credit-bearing section which requires a registration separate from the lecture component of the course.

Lecture. A class session in which an instructor speaks on a specific topic.
Lecture/laboratory. Lecture course which integrates a lab component as part of the same course registration.

Major. The primary discipline-specific (or multidisciplinary or interdisciplinary) set of requirements in an undergraduate program of study. The major typically consists of a minimum of 30 hours and identifies by name a specific degree area. For example, a Bachelor of Arts degree with a major in English or a Bachelor of Science in Business Administration degree with a major in accounting.

Minor. The lesser set of discipline-specific (or multidisciplinary or interdisciplinary) requirements in an undergraduate program of study. The minor typically consists of a minimum of 15 hours or more in a designated discipline.

Noncredit Course. A course for which no credit is given. (Some credit courses will not count toward degrees.)

Overload. A course load of more semester hours than a student is normally permitted to schedule in a given period.

Practicum. Involves supervised activities emphasizing practical application of theory, especially one in which a student gains exposure to a field of study; generally required as part of the program curriculum.

Pre-Professional Requirements. The set of course, hour, and other academic requirements that must be completed before entry into a school, a program of study, or an advanced level of a program of study, either at the \(U\) of \(A\) or at another institution.

Prerequisite. A course or requirement that must be completed before the term when the described course is taken.

Private Study. Involves individual instruction with regular meetings; one-to-one demonstration, performance critique, music, fine arts or performing arts are examples.

Readings. A course where the instructor assigns readings and facilitates discussion at regular class meetings.

Registration. Enrollment at the beginning or prior to the beginning of a semester, including selection of classes and payment of fees and tuition.

Research. Research conducted that is independent of that done for a dissertation or thesis.

Sanction(s). The penalty for noncompliance to a policy. Usually a response that will redirect the individual or group's inappropriate behavior, encourage responsible judgment and ethical reasoning, protect the community's property and rights, and affirm the integrity of the institution's conduct standards.

Section. A division of a course for instruction. A course may be taught in one or more sections or classes or at different times, depending on enrollment in the course.

Second/Dependent Major. A second complete set of primary discipline-specific requirements in a discipline in which only a second or dependent major may be earned. A second major must be earned in a degree program in which the first major is one authorized to be given independently. Typically, a minimum of 30 hours is earned in each major area or discipline. Examples of second major areas are African and African American studies, Middle East studies, and Latin American and Latino Studies. An example of a degree with a second major is a Bachelor of Arts degree with a major in political science and a second major in Middle East studies. The second major is always listed second on the transcript.

Self-Paced (Correspondence). Course in which instruction is web-based and students are physically separated from the instructor. Interaction between instructor and student is not regular or substantive, and is primarily initiated by the student. These courses are self-paced and are not distance education. Students are not required to be admitted to the University of Arkansas to take a self-paced course.

Semester Credit Hour. Unit of measure of college work. One semester credit hour is normally equivalent to one hour of class work or from two to six hours of laboratory work per week for a semester.

Seminar. Involves a small group of students engaged in advanced study and original research under a member of the faculty and meeting regularly to exchange information and hold discussions; highly focused and topical course; may include student presentations and discussions of reports based on literature, practices, problems, or research.

Special Problems. Individualized investigation of topics or case studies in a specific field under the supervision of an instructor for the purpose of enhancing or illuminating the regular curriculum.

Special Topics. An organized course devoted to a particular issue in a specific field; course content is not necessarily included in the regular curriculum for the major.

State Minimum Core. See University Core below.
Student Number. A number given to each student as a permanent identification number for use at the university.

Studio Course. Involves the application of design and theory in a defined physical setting; students explore and experiment under the guidance of an instructor.

Summer Sessions. Periods of time during the summer when course work is offered. (Go to the Academic Calendar (p. 9) for specific times and dates.)

Syllabus. An outline or summary of the main points of a course of study, lecture, or text.

Telecommunications. Course that utilizes technology in conveying teaching material. This only includes courses that use technology as the primary delivery method of course content, not courses that simply use technology to support another delivery method. These are distant education courses that generally:Uses one or more of the following technologies to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor, synchronously or asynchronously. The technologies used may include:
- The Internet;
- One-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communications devices;
- Audio-conferencing, etc.; or
- Videocassettes, DVDs, and CD-Roms, if the videocassettes, DVDs, or CD-Roms are used in conjunction with any of the technologies listed in the first three options

Thesis Research. See Dissertation/Thesis Research above.
Track. A subdivision of a concentration that a student must select and fulfill to complete the requirements of the concentration. Examples are the portfolio and thesis tracks within the specialist concentration in the Master of Arts in English degree. Tracks will print on the transcript.

Transcript. A complete record of the student's enrollment and academic history at the University of Arkansas, including all undergraduate, graduate, and law courses.

Tuition. The charge for university enrollment and registration, calculated per credit hour each semester. Tuition rates may vary depending on a student's resident status, undergraduate or graduate standing, and college affiliation. Tuition does not include cost of room and board. Additional charges will apply depending on student status. See the entry for Fees above.

UAConnect (https://uaconnect.uark.edu/). The online database that maintains student, faculty and staff records and class schedules.

Undeclared Major. Designation indicating students who have not selected a major.

Undergraduate Study. Work taken toward earning an associate or a baccalaureate degree.

University Core. The state of Arkansas specifies a number of core courses that students must successfully pass to obtain a degree. These are also sometimes referred to as the State Minimum Core. Find out more in the Requirements for Graduation (p. 86) and University Core (http://catalog.uark.edu/undergraduatecatalog/academicregulations/ universitycore/) portions of the Academic Regulations section.

Withdrawal. Official withdrawal (http://registrar.uark.edu/registration/ withdrawal.php) from all courses during a semester at the university.

1 In establishing the official count of degrees awarded by the \(U\) of \(A\), the Arkansas Department of Higher Education will count only one degree (major) for each student who completes a degree with double or combined majors. U of A staff may note in which major the degree is counted. Two degrees are counted only if the student completes two separate degree programs, a Master of Arts and a Master of Science, for instance.
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[^0]:    - Below 19 on the English section of the ACT and high school GPA less than 3.20

[^1]:    Satisfies General Education Outcome

[^2]:    **Internship choice should coincide with concentration declared

[^3]:    AMPD 2013H. Honors Fashion, Buying and Promotion in a Global Market. 3 Hours.
    Fashion components, marketing theories and practices as they specifically relate to apparel, home goods, and other design driven products in the global market. Focus on principles and techniques on how fashion marketers develop and apply marketing strategies that meet consumer needs at a profit. International buying and promotional aspects of the apparel industry are emphasized. Lecture 3 hours per week. Prerequisite: AMPD major, AMPD 1013 and honors standing. (Typically offered: Fall and Spring)
    This course is equivalent to AMPD 2013.

[^4]:    BIOL 2531L Cell Biology Laboratory
    BIOL 2321L General Genetics Laboratory
    BIOL 3861L General Ecology Laboratory
    b. Biology Electives (13 hours): must include at least 9 hours in BIOL courses numbered 3000 or higher and at least one course numbered 2000 or higher with a laboratory. (Laboratory courses also include BIOL 480V, BIOL 480VH, BIOL 499V, and BIOL 499VH.)
    3. Requirements in cognate science and mathematics include:
    A.

    CHEM 1103 University Chemistry I (ACTS Equivalency = 4
    \& CHEM 1101L CHEM 1414 Lecture)
    and University Chemistry I Laboratory (ACTS and University Chemistry I Labor
    Equivalency = CHEM 1414 Lab)
    CHEM 1123 University Chemistry II (ACTS Equivalency = 4
    \& CHEM 1121L CHEM 1424 Lecture)
    and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)
    Select one of the following:
    CHEM 2613 Organic Physiological Chemistry (ACTS

    CHEM 3603 Organic Chemistry I
    \& CHEM 3601 and Organic Chemistry I Laboratory
    \& CHEM 3613 and Organic Chemistry II
    \& CHEM 3611 and Organic Chemistry II Laboratory
    B.

    PHYS $2013 \quad$ College Physics I (ACTS Equivalency = PHYS 4
    \& PHYS 2011L 2014 Lecture)
    and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)
    PHYS $2033 \quad$ College Physics II (ACTS Equivalency $=$ PHYS 4 \& PHYS 2031L 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)
    C.

    MATH 2043 Survey of Calculus (ACTS Equivalency = MATH 3-4 2203)
    or MATH 2554Calculus I (ACTS Equivalency = MATH 2405)
    D.

    Select one of the following: 3-4

    | STAT 2823 | Biostatistics |
    | :--- | :--- |
    | STAT 2303 | Principles of Statistics (ACTS Equivalency $=$ |
    |  | MATH 2103) |
    | STAT 3003 | Statistical Methods |
    | MATH 2183 | Mathematical Reasoning in a Quantitative World |

    4. Requirement in Philosophy

    Select one of the following:
    PHIL 2103 Introduction to Ethics (ACTS Equivalency = PHIL 1003)
    PHIL 2203 Logic (ACTS Equivalency = PHIL 1003)
    PHIL 3113 Environmental Ethics
    PHIL 4213 Philosophy of Science

[^5]:    ${ }^{2}$ Students may not receive credit for both HIST 3383 and HIST 4583.

[^6]:    1 Topics and studies include over a dozen courses.
    2 Courses focus on early indigenous and French encounters in the Canadian Quebec region and along the Lower Mississippi River Valley,

[^7]:    1 Students completing the Jazz Concentration must select MUTH 3723.

[^8]:    1 Meets 40-hour advanced credit hour requirement.

[^9]:    * Students may elect to substitute a Minor in Global Studies (Option 1 only) in lieu of the 9 hours of World Language and the 6 hours of Area Studies requirement for the Bachelor of Science in International Business.

